

ILAS
INSTITUTE FOR LIBERAL ARTS AND SCIENCES



Liberal Arts and Sciences to learn in English

2019

英語で学ぶ全学共通科目

Liberal Arts and Sciences *to learn in* ENGLISH 2019

英語で学ぶ全学共通科目

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Message from the Director

Against a background of ongoing technological advancement and the drive for globalization, our current era is characterized by rapid social change. Students living through this time are expected to help shape the future of our societies. The Institute for Liberal Arts and Sciences was established in April 2013 with a view to educating those students to become globally oriented individuals who can function effectively anywhere in the world by exercising their broad perspectives, extensive knowledge, and unparalleled creativity. The Institute aspires to "teach the basic knowledge and methodologies that are common among a wide range of cross-disciplinary fields and foster rich humanity by providing students with opportunities to come into contact with advanced learning and culture" (Article 3, Kyoto University Institute for Liberal Arts and Sciences Regulations).



Throughout its more than 100-year history, Kyoto University has fostered a tradition of academic freedom under the banner of "self-teaching and self-learning" based on dialogue. At the core of this time-honored tradition is the immutable conviction that learning is a process of uncovering hitherto unrecognized issues through self-thinking, experience, and free dialogue, and of opening up new intellectual horizons by inquiring into humanity, society, and natural phenomena according to fundamental principles. Of course, it is also important to have an attitude of respectfully learning from the wisdom of those who have come before us. In addition, I expect our students to aim higher in their endeavors to investigate the unknown and create something new. To this end, it is necessary to shift the direction of advanced learning away from efficient absorption of existing knowledge and toward creation of new knowledge through intensive research. "Self-teaching and self-learning" based on dialogue is a new intellectual habit of learning that must be acquired, and one that will make it possible to take the first step into academia. The primary goal of Kyoto University's liberal arts and sciences programs is to create an intellectual space that is free, open, and conducive to the taking of that initial step.

Rapid progress in academic research means that specialized fields are becoming increasingly segmented. Meanwhile, the global community is being confronted with issues that involve different specialized fields. In order to resolutely tackle these issues, it is not enough to merely study one's specialized subjects; one must have a broad knowledge base which enables events to be observed from various perspectives. We hope that students from different faculties will come together to freely discuss and learn the knowledge and ideas that underpin the wide variety of subjects concerning humanity, society, and nature that are offered in our liberal arts and sciences courses. Our goal is to see our students enhance their own education while deepening their mutual ties with others.

For students to be able to play active roles in the global arena, it is also important to communicate and live in harmony with people from around the globe with different values, cultures, and lifestyles. To address this fundamental requirement, the Institute emphasizes education in English and other languages through such measures as improving the quality and quantity of classes taught in English by foreign faculty members. We have also introduced support programs for students who wish to study abroad so that they can explore their potential in the international arena.

The Institute will remain committed to providing students with quality liberal arts and sciences education through close collaboration with all of Kyoto University's faculties and the generous cooperation of its graduate schools, research institutes, and centers. It is our sincere hope that students will learn a great deal from our intellectually stimulating classes, taught by highly enthusiastic teachers, and through candid, unconstrained discussion with fellow students, and that they will enhance their capabilities before launching themselves into the big, wide world that awaits them.

Hisashi Miyagawa
Director
Institute for Liberal Arts and Sciences

Courses 授業科目一覽

Lecture code	Course title	Instructor	No. of credits	No. of weekly time blocks	Semester	Day/Period	Target year	Eligible students	Page
Humanities and Social Sciences (Philosophy)									
H155001	Logic I-E2:Sentential Logic and Deductions	BROWN, John	2	1	1st	Wed/1	Mainly 1st & 2nd	All	19
H156001	Logic II-E2:Quantificational Logic and Deductions	BROWN, John	2	1	2nd	Wed/1	Mainly 1st & 2nd	All	20
H149001	The History of Eastern Thought I-E2	CATT , Adam Alvah	2	1	1st	Wed/2	All	Liberal Arts	21
H150002	Science of Religion I-E2	CATT , Adam Alvah	2	1	2nd	Wed/2	All	Liberal Arts	22
H151001	History of Modern Science-E2	D'SOUZA, Rohan Ignatious	2	1	1st	Tue/3	All	All	23
H154001	Philosophy of Modern Science-E2	D'SOUZA, Rohan Ignatious	2	1	2nd	Tue/3	All	All	24
H159001	Theories of Religion in the Social Sciences-E2	Julius Bautista	2	1	1st	Tue/4	Mainly 1st & 2nd	Liberal Arts	25
H161001	Japanese Philosophy I-E2	PASCA, Roman	2	1	1st	Wed/2	All	All	26
H162001	Japanese Philosophy II-E2	PASCA, Roman	2	1	2nd	Wed/2	All	All	27
H163001	Philosophy of Nature I-E2	PASCA, Roman	2	1	1st	Wed/3	All	All	28
H164001	Philosophy of Nature II-E2	PASCA, Roman	2	1	2nd	Wed/3	All	All	29
Humanities and Social Sciences (History and Civilization)									
H281001	Japanese History I-E2	VAN STEENPAAL , Niels	2	1	1st	Tue/2	All	All	30
H281002	Japanese History I-E2	KNAUDT , Till	2	1	1st	Tue/2	All	All	31
H281003	Japanese History I-E2	KNAUDT , Till	2	1	1st	Wed/2	All	All	31
H282001	Japanese History II-E2	VAN STEENPAAL , Niels	2	1	2nd	Tue/2	All	All	32
H282002	Japanese History II-E2	KNAUDT , Till	2	1	2nd	Tue/2	All	All	33
H282003	Japanese History II-E2	KNAUDT , Till	2	1	2nd	Wed/2	All	All	33
H275001	Western History I-E2	BHATTE , Pallavi Kamlakar	2	1	1st	Tue/2	All	All	34
H275002	Western History I-E2	BHATTE , Pallavi Kamlakar	2	1	1st	Fri/2	All	All	35
H274001	Western History II-E2	BHATTE , Pallavi Kamlakar	2	1	2nd	Tue/2	All	All	36
H274002	Western History II-E2	BHATTE , Pallavi Kamlakar	2	1	2nd	Fri/2	All	All	37
H277001	Introduction to World Religions-E2	Julius Bautista	2	1	1st	Tue/2	Mainly 1st & 2nd	Liberal Arts	38

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Lecture code	Course title	Instructor	No. of credits	No. of weekly time blocks	Semester	Day/Period	Target year	Eligible students	Page
H280001	Introduction to Asian Societies-E2	Julius Bautista	2	1	2nd	Tue/2	Mainly 1st & 2nd	Liberal Arts	39
H279001	Religion in Contemporary Society-E2	Julius Bautista	2	1	2nd	Tue/4	Mainly 1st & 2nd	Liberal Arts	40
H283001	Japanese Intellectual History I-E2	VAN STEENPAAL · Niels	2	1	1st	Wed/2	All	All	41
H284001	Japanese Intellectual History II-E2	VAN STEENPAAL · Niels	2	1	2nd	Wed/2	All	All	42
H287001	Japanese Popular Culture-E2	MURPHY, Mahon	2	1	1st	Tue/2	Mainly 1st & 2nd	All	43
H287002	Japanese Popular Culture-E2	MURPHY, Mahon	2	1	2nd	Wed/4	Mainly 1st & 2nd	All	44
Humanities and Social Sciences (Arts, Literature and Linguistics)									
H381001	Introduction to Linguistic Science-E2	CATT · Adam Alvah	2	1	1st	Wed/1	All	Liberal Arts	45
H382001	Introduction to Japanese Linguistics I-E2	CATT · Adam Alvah	2	1	2nd	Wed/1	All	Liberal Arts	46
H383001	Intercultural Communication I-E2	TANGSEEFA · Decha	2	1	1st	Wed/4	Mainly 1st & 2nd	All	47
H384001	Intercultural Communication II-E2	TANGSEEFA · Decha	2	1	2nd	Wed/4	All	All	48
Humanities and Social Sciences (Pedagogy, Psychology and Sociology)									
H727001	Pedagogy I-E2	Jeremy Rappleye	2	1	1st	Wed/1	Mainly 1st & 2nd	All	50
H728001	Pedagogy II-E2	Jeremy Rappleye	2	1	2nd	Wed/1	Mainly 1st & 2nd	All	51
H739001	Psychoanalysis-E2	TAJAN · Nicolas Pierre	2	1	1st	Thu/5	All	All	52
H721001	Sociology I-E2	Stephane Heim	2	1	1st	Tue/3	Mainly 1st	All	53
H715001	Advanced Lecture for Pedagogy I-E2	Jeremy Rappleye	2	1	1st	Wed/2	Mainly 1st & 2nd	All	54
H716001	Advanced Lecture for Pedagogy II-E2	Jeremy Rappleye	2	1	2nd	Wed/2	Mainly 1st & 2nd	All	55
H709001	Introduction to Educational Psychology I-E2	Emmanuel MANALO	2	1	1st	Mon/3	Mainly 1st & 2nd	All	56
H710001	Introduction to Educational Psychology II-E2	Emmanuel MANALO	2	1	2nd	Mon/3	Mainly 1st & 2nd	All	57
H708001	Introduction to Educational Studies I-E2	Emmanuel MANALO	2	1	1st	Mon/1	Mainly 1st & 2nd	All	58
H711001	Introduction to Educational Studies II-E2	Emmanuel MANALO	2	1	2nd	Mon/1	Mainly 1st & 2nd	All	59
H740001	Psychoanalysis II-E2	TAJAN · Nicolas Pierre	2	1	2nd	Tue/4	All	All	60
H723001	Introduction to Primate Behavior and Cognition-E2	Anderson · James Russell	2	1	2nd	Tue/4	All	All	61

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Lecture code	Course title	Instructor	No. of credits	No. of weekly time blocks	Semester	Day/Period	Target year	Eligible students	Page
H722001	Introduction to Comparative Psychology-E2	Anderson , James Russell	2	1	1st	Tue/4	All	All	62
H724001	Introduction to Globalization Studies-E2	Stephane Heim	2	1	1st	Tue/4	Mainly 1st	All	63
H725001	Introduction to Social Research-E2	Stephane Heim	2	1	2nd	Tue/3	Mainly 1st & 2nd	All	64
H726001	Sociology of Work and Organizations-E2	Stephane Heim	2	1	2nd	Tue/4	Mainly 1st & 2nd	All	65
H712001	Introduction to Sociological Observation-E2	SINGER JANE	2	1	1st	Fri/4	Mainly 1st & 2nd	All	66
H717001	Introduction to Risk Communication-E2	SAMADDAR , Subhajyoti	2	1	2nd	Wed/3	Mainly 1st & 2nd	All	67
H718001	Introduction to Society and Community Studies-E2	SAMADDAR , Subhajyoti	2	1	2nd	Wed/2	Mainly 1st & 2nd	All	68
H734001	Introduction to Ritual Studies-E2	LAHOURNAT , Florence	2	1	2nd	Tue/4	Mainly 1st & 2nd	All	69
H733001	Disaster and Culture-E2	LAHOURNAT , Florence	2	1	2nd	Tue/2	Mainly 1st & 2nd	All	70
Humanities and Social Sciences (Regions and Cultures)									
H598001	Cultural Anthropology I-E2	LOPEZ , Mario Ivan	2	1	1st	Mon/3	Mainly 1st & 2nd	All	71
H598002	Cultural Anthropology I-E2	LOPEZ , Mario Ivan	2	1	2nd	Mon/3	Mainly 1st & 2nd	All	72
H598003	Cultural Anthropology I-E2	COKER , CAITLIN CHRISTINE	2	1	1st	Thu/2	All	All	73
H598004	Cultural Anthropology I-E2	COKER , CAITLIN CHRISTINE	2	1	1st	Thu/4	All	All	74
H802002	Human Geography-E2	BAARS, ROGER C.	2	1	1st	Thu/2	Mainly 1st & 2nd	All	75
H802003	Human Geography-E2	BAARS, ROGER C.	2	1	2nd	Thu/2	Mainly 1st & 2nd	All	76
H815001	Topics in Cultural Anthropology I-E2	COKER , CAITLIN CHRISTINE	2	1	2nd	Thu/3	All	All	77
H815002	Topics in Cultural Anthropology I-E2	COKER , CAITLIN CHRISTINE	2	1	2nd	Thu/4	All	All	78
H589001	Environmental Anthropology-E2	D'SOUZA, Rohan Ignatious	2	1	1st	Fri/3	All	All	79
H599001	Topics in Human Geography VII-E2(Population and Mobility)	SINGER JANE	2	1	2nd	Thu/3	Mainly 2nd	All	80
H813001	Contemporary Japanese Architecture-E2	DANIELL , Thomas	2	1	1st	Tue/3	Mainly 1st	All	81
H812001	Theory of Landscape Design-E2:House and Gardens of Kyoto	DANIELL , Thomas	2	1	2nd	Tue/3	Mainly 1st	All	82
H591001	Introduction to Globalization I-E2	LOPEZ , Mario Ivan	2	1	1st	Tue/3	Mainly 1st & 2nd	All	83

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Lecture code	Course title	Instructor	No. of credits	No. of weekly time blocks	Semester	Day/Period	Target year	Eligible students	Page
H592001	Introduction to Globalization II-E2	LOPEZ, Mario Ivan	2	1	2nd	Tue/3	Mainly 1st & 2nd	All	84
H801001	Environmental Histories of South Asia-E2	D'SOUZA, Rohan Ignatious	2	1	2nd	Fri/3	All	All	85
H814001	Introduction to Urban Geography-E2	BAARS, ROGER C.	2	1	1st	Thu/4	All	All	86
H814002	Introduction to Urban Geography-E2	BAARS, ROGER C.	2	1	2nd	Thu/4	All	All	87
H806001	Introduction to Urban Planning-E2	SAMADDAR, Subhajyoti	2	1	1st	Wed/3	Mainly 1st & 2nd	All	88
H808001	Food and Globalization I-E2	Hart Nadav FEUER	2	1	1st	Wed/2	Mainly 1st & 2nd	All	89
H809001	Food and Globalization II-E2	Hart Nadav FEUER	2	1	2nd	Wed/2	Mainly 1st & 2nd	All	90
Humanities and Social Sciences (Jurisprudence, Politics and Economics)									
H926001	Jurisprudence-E2	KARAIKOS, Antonios	2	1	2nd	Mon/4	Mainly 1st & 2nd	All	91
H927001	Law and Culture in Japan-E2	KARAIKOS, Antonios	2	1	1st	Fri/4	Mainly 1st & 2nd	All	92
H938001	Political Science I-E2	TANGSEEFA, Decha	2	1	1st	Wed/3	All	All	93
H939001	Political Science II-E2	TANGSEEFA, Decha	2	1	2nd	Wed/3	All	All	94
H934001	Introduction to Economics-E2	NEWTON, Jonathan Charles Scott	2	1	1st	Wed/1	Mainly 1st	All	95
H935001	Principles of Economics-E2	NEWTON, Jonathan Charles Scott	2	1	1st	Wed/2	Mainly 1st	All	96
H936001	Economy and Society I-E2	NEWTON, Jonathan Charles Scott	2	1	1st	Thu/3	Mainly 2nd	Liberal Arts	97
H937001	Economy and Society II-E2	NEWTON, Jonathan Charles Scott	2	1	1st	Thu/1	Mainly 2nd	Liberal Arts	98
H930001	Introduction to European Law-E2	KARAIKOS, Antonios	2	1	1st	Fri/3	2nd or above	All	99
H928001	Japan's Political Economy-E2	HIJINO Ken	2	1	2nd	Tue/2	Mainly 1st & 2nd	All	100
H929001	Japanese Politics-E2	HIJINO Ken	2	1	1st	Tue/2	2nd or above	All	101
H931001	Modern Classics in Political Science-E2	HIJINO Ken	2	1	1st	Wed/2	Mainly 1st & 2nd	All	102
H943001	International History 1900 to the Present-E2	MURPHY, Mahon	2	1	1st	Wed/4	2nd or above	All	103
H944001	An International History of East Asia 1839-1945-E2	MURPHY, Mahon	2	1	2nd	Tue/2	Mainly 1st & 2nd	All	104
Natural Sciences (Mathematics)									
N157001	Calculus with Exercises A	Karel SVADLENKA	3	2	1st	Tue/2 · Wed2	Mainly 1st	Science	105

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Lecture code	Course title	Instructor	No. of credits	No. of weekly time blocks	Semester	Day/Period	Target year	Eligible students	Page
N158001	Calculus with Exercises B	Karel SVADLENKA	3	2	2nd	Tue/2 · Wed2	Mainly 1st	Science	106
N159001	Linear Algebra with Exercises A	COLLINS · Benoit Vincent Pierre	3	2	1st	Mon/3 · Tue/2	Mainly 1st	Science	107
N160001	Linear Algebra with Exercises B	COLLINS · Benoit Vincent Pierre	3	2	2nd	Mon/3 · Tue/2	Mainly 1st	Science	108
N168001	Mathematical Description of Natural Phenomena	CHANG · Kai-Chun	2	1	1st	Tue/3	Mainly 1st	Science	109
N178001	Mathematical Description of Natural Phenomena-E2	ISLAM, A K M Mahfuzul	2	1	1st	Tue/2	Mainly 1st	Science	110
N174001	Quest for Mathematics I-E2	CROYDON, David	2	1	1st	Fri/2	Mainly 1st & 2nd	Liberal Arts	111
N174002	Quest for Mathematics I-E2	Arseniy Aleksandrovich · Kuzmin	2	1	1st	Tue/2	Mainly 1st & 2nd	All	112
N175001	Quest for Mathematics II-E2	TAN · Fucheng	2	1	1st	Thu/4	All	All	113
N175002	Quest for Mathematics II-E2	TAN · Fucheng	2	1	2nd	Thu/4	All	All	115
N169001	Advanced Calculus I-Vector Calculus	QURESHI · Ali Gul	2	1	1st	Wed/5	2nd or above	Science	117
N170001	Advanced Calculus II-Differential Equations	QURESHI · Ali Gul	2	1	2nd	Wed/5	2nd or above	Science	118
N106001	Advanced Linear Algebra	CHANG · Kai-Chun	2	1	1st	Fri/2	2nd or above	Science	119
N162001	Function Theory of a Complex Variable-E2	CROYDON, David	2	1	1st	Fri/1	Mainly 2nd	Science	120
N161001	Honors Mathematics A-E2	COLLINS · Benoit Vincent Pierre	2	1	2nd	Tue/3	Mainly 1st	Science	121
N165001	Honors Mathematics B-E2	Karel SVADLENKA	2	1	1st	Tue/3	Mainly 2nd	Science	122
Natural Sciences (Data Science)									
N804001	Introductory Statistics-E2	VEALE · Richard Edmund	2	1	1st	Fri/3	All	All	123
N804002	Introductory Statistics-E2	VANDENBON · Alexis	2	1	2nd	Tue/2	All	All	124
N815001	Mathematical Statistics-E2	CROYDON, David	2	1	1st	未定	Mainly 2nd	Science	125
N815002	Mathematical Statistics-E2	CROYDON, David	2	1	2nd	未定	Mainly 2nd	Science	126
N809001	Basic Data Analysis-E2	VANDENBON · Alexis	2	1	1st	Tue/2	All	All	127
N816001	Second Course in Statistics-E2	CROYDON, David	2	1	2nd	未定	Mainly 2nd	All	128
N813001	Data Analysis Practice I-E2	RAKERS · Christin	2	1	1st	Thu/4	All	All	129

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Lecture code	Course title	Instructor	No. of credits	No. of weekly time blocks	Semester	Day/Period	Target year	Eligible students	Page
N813002	Data Analysis Practice I-E2	RAKERS , Christin	2	1	2nd	Thu/4	All	All	130
N814001	Data Analysis Practice II-E2	PATAKY , Todd	2	1	2nd	Fri/3	All	All	131
Natural Sciences (Physics)									
N208001	Fundamental Physics A	QURESHI , Ali Gul	2	1	1st	Thu/4	Mainly 1st	Science	132
N261001	Fundamental Physics A-E2	OKEYO , Kennedy Omondi	2	1	1st	Thu/2	Mainly 1st	Science	133
N209001	Fundamental Physics B	QURESHI , Ali Gul	2	1	2nd	Thu/4	Mainly 1st	Science	134
N264001	Fundamental Physics B-E2	DE ZOYSA , Menaka	2	1	2nd	Thu/3	Mainly 1st	Science	135
N256001	Elementary Experimental Physics-E2	WENDELL,Roger	2	2	2nd	Wed/3 · Wed/4	Mainly 1st	Science	136
N255001	Elementary Course of Physics A-E2	PETERS,Robert	2	1	1st	Mon/3	Mainly 1st	Science	137
N271001	Elementary Course of Physics B-E2	Arseniy Aleksandrovich , Kuzmin	2	1	2nd	Tue/2	Mainly 1st	Science	138
N211001	Advanced Dynamics	KIM , SUNMIN	2	1	2nd	Tue/3	Mainly 1st	Science	139
N207001	Physics of Wave and Oscillation	KIM , SUNMIN	2	1	1st	Thu/4	Mainly 2nd	Science	140
N251001	Advanced Course of Electromagnetism-E2	BEAUCAMP , Anthony Tadeus Herve	2	1	1st	Tue/1	Mainly 2nd	Science	141
N253001	A Guide to Modern Physics A-E2	WENDELL,Roger	2	1	1st	Mon/3	Mainly 1st	All	142
N260002	Physics for All-E2	ISLAM, A K M Mahfuzul	2	1	1st	Tue/3	Mainly 1st & 2nd	Liberal Arts	143
N260001	Physics for All-E2	OKEYO , Kennedy Omondi	2	1	2nd	Tue/3	Mainly 1st	All	144
N262001	Introduction to Modern Optics-E2	BEAUCAMP , Anthony Tadeus Herve	2	1	1st	Tue/2	Mainly 1st & 2nd	Science	145
N263001	Introduction to Light Control-E2	DE ZOYSA , Menaka	2	1	1st	Wed/1	Mainly 2nd	Science	146
N272001	Fundamentals of Materials I-E2	GAO , Si	2	1	1st	Thu/2	Mainly 1st & 2nd	Science	147
N273001	Fundamentals of Materials II-E2	GAO , Si	2	1	2nd	Mon/2	Mainly 1st & 2nd	Science	148
N257001	Introduction to Statistical Physics-E2	PETERS,Robert	2	1	2nd	Wed/4	Mainly 1st & 2nd	Science	149
N249001	Theory of Special Relativity-E2	Antonio De Felice	2	1	2nd	Wed/2	Mainly 1st & 2nd	All	150
N254001	Analytic Dynamics-E2	PETERS,Robert	2	1	1st	Tue/3	Mainly 2nd	Science	151

Courses 授業科目一覽

Lecture code	Course title	Instructor	No. of credits	No. of weekly time blocks	Semester	Day/Period	Target year	Eligible students	Page
N270001	Introduction to Quantum Physics-E2	Arseniy Aleksandrovich , Kuzmin	2	1	2nd	Tue/4	Mainly 2nd	Science	152
N269001	Introduction to Plasma Science-E2	Arseniy Aleksandrovich , Kuzmin	2	1	2nd	Tue/3	Mainly 1st	All	153
N248001	Introduction to Cosmology-E2	Antonio De Felice	2	1	1st	Wed/2	Mainly 1st & 2nd	All	154
Natural Sciences (Chemistry)									
N371001	Essentials of Basic Physical Chemistry-E2	ARIVAZHAGAN RAJENDRAN	2	1	1st	Mon/2	Mainly 1st & 2nd	Science	155
N365002	Basic Physical Chemistry (thermodynamics)-E2	PARK , Jaehong	2	1	2nd	Thu/3	Mainly 1st & 2nd	Science	156
N365001	Basic Physical Chemistry (thermodynamics)-E2	ARIVAZHAGAN RAJENDRAN	2	1	1st	Mon/3	Mainly 1st & 2nd	Science	157
N366003	Basic Physical Chemistry (quantum theory)-E2	PARK , Jaehong	2	1	1st	Tue/3	Mainly 1st & 2nd	Science	158
N366002	Basic Physical Chemistry (quantum theory)-E2	ARIVAZHAGAN RAJENDRAN	2	1	2nd	Mon/2	Mainly 1st & 2nd	Science	159
N368002	Basic Organic Chemistry I-E2	Juha Lintuluoto	2	1	1st	Thu/2	Mainly 1st	Science	160
N368001	Basic Organic Chemistry I-E2	Amelie Perron	2	1	1st	Tue/5	Mainly 1st & 2nd	Science	161
N369002	Basic Organic Chemistry II-E2	Juha Lintuluoto	2	1	2nd	Thu/2	Mainly 1st	Science	162
N369003	Basic Organic Chemistry II-E2	Amelie Perron	2	1	2nd	Tue/5	Mainly 1st & 2nd	Science	163
N374001	Fundamental Chemical Experiments-E2	Juha Lintuluoto	2	2	1st	Wed/3 · Wed/4	Mainly 1st	Science	164
N374003	Fundamental Chemical Experiments-E2	Cedric Tassel	2	2	1st	Wed/3 · Wed/4	Mainly 1st	Science	164
N374002	Fundamental Chemical Experiments-E2	Juha Lintuluoto	2	2	2nd	Wed/3 · Wed/4	Mainly 1st	Science	165
N374004	Fundamental Chemical Experiments-E2	Cedric Tassel	2	2	2nd	Wed/3 · Wed/4	Mainly 1st	Science	165
N384001	Outline of Chemistry I(Its History and Fundamentals)-E2	GAO , Si	2	1	2nd	Thu/2	Mainly 1st & 2nd	All	166
N362001	Everyday Life Chemistry-E2	Amelie Perron	2	1	2nd	Thu/4	Mainly 1st & 2nd	All	167
N367001	Chemistry of Sustainable Energy-E2	ARIVAZHAGAN RAJENDRAN	2	1	2nd	Mon/3	All	Science	168
N377001	Revisiting Basic Organic Chemistry I-E2	LANDENBERGER , Kira Beth	2	1	2nd	Thu/4	Mainly 2nd	Science	169
N378001	Revisiting Basic Organic Chemistry II-E2	LANDENBERGER , Kira Beth	2	1	1st	Thu/4	Mainly 2nd	Science	170
N381001	Revisiting Basic Physical Chemistry (thermodynamics)-E2	ALCANTARA AVILA, Jesus Rafael	2	1	1st	Thu/4	Mainly 2nd	Science	171

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Lecture code	Course title	Instructor	No. of credits	No. of weekly time blocks	Semester	Day/Period	Target year	Eligible students	Page
N382001	Revisiting Basic Physical Chemistry (quantum theory)-E2	ALCANTARA AVILA, Jesus Rafael	2	1	2nd	Thu/4	Mainly 2nd	Science	172
N373001	Equilibrium and Energy-E2:A Macroscopic Perspective of Chemistry	THUERMER, Stephan	2	1	1st	Mon/3	Mainly 1st & 2nd	Science	173
N363001	Introduction to Inorganic Chemistry A-E2	Cedric Tassel	2	1	1st	Tue/3	Mainly 1st & 2nd	Science	174
N364001	Introduction to Inorganic Chemistry B-E2	Cedric Tassel	2	1	2nd	Tue/3	Mainly 1st & 2nd	Science	175
N361001	Organic Chemistry of Life-E2	Amelie Perron	2	1	1st	Thu/4	Mainly 1st & 2nd	Science	176
N372001	Introduction to Surface Chemistry-E2	THUERMER, Stephan	2	1	2nd	Mon/3	Mainly 2nd	Science	177
N383001	Chemistry in Solar Energy Conversion-E2	PARK, Jaehong	2	1	1st	Tue/4	Mainly 1st & 2nd	Science	178
N380001	Chemical Kinetics and Molecular Reaction Dynamics-E2	PARK, Jaehong	2	1	2nd	Thu/4	Mainly 1st & 2nd	Science	179
Natural Sciences (Biology)									
N923001	Fundamentals of Cell and Molecular Biology-E2	TAKENAKA, Mizuki	2	1	1st	Fri/2	Mainly 1st & 2nd	All	180
N924001	Introduction to Plant Science-E2	TAKENAKA, Mizuki	2	1	2nd	Fri/2	Mainly 1st & 2nd	All	181
N497001	Comparative Cognition-E2	Andrew MacIntosh	2	1	2nd	Mon/4	All	Science	182
N496001	Conservation Biology-E2	Andrew MacIntosh	2	1	1st	Mon/5	All	Science	183
N498001	Animal Behavior-E2	Andrew MacIntosh	2	1	1st	Mon/4	All	Science	184
N499001	Zoo Biology-E2	Andrew MacIntosh	2	1	2nd/int	-	All	Science	185
N492001	Principles of Genetics-E2	Shohab YOUSSEFIAN	2	1	1st	Tue/2	Mainly 1st & 2nd	Science	186
N901001	Introduction to Genetics and Evolution-E2	HEJNA, James	2	1	2nd	Mon/3	Mainly 1st & 2nd	Science	187
N911001	Basic Biology-E2	HEJNA, James	2	1	1st	Mon/3	Mainly 1st & 2nd	Science	188
N912001	Basic Genetic Engineering-E2	HEJNA, James	2	1	2nd	Wed/2	Mainly 1st & 2nd	Science	189
N490001	Introduction to Biochemistry-E2	Shohab YOUSSEFIAN	2	1	2nd	Tue/2	Mainly 1st & 2nd	Science	190
N490003	Introduction to Biochemistry-E2	Shohab YOUSSEFIAN	2	1	2nd	Tue/3	Mainly 1st & 2nd	Science	191
N490002	Introduction to Biochemistry-E2	Marco,Marques Candeias	2	1	2nd	Tue/2	Mainly 1st & 2nd	Science	192
N490004	Introduction to Biochemistry-E2	Marco,Marques Candeias	2	1	2nd	Tue/3	Mainly 1st & 2nd	Science	193

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Lecture code	Course title	Instructor	No. of credits	No. of weekly time blocks	Semester	Day/Period	Target year	Eligible students	Page
N491001	Introduction to Molecular Biotechnology-E2	Shohab YOUSSEFIAN	2	1	1st	Tue/3	Mainly 1st & 2nd	Science	194
N913001	Introduction to Behavioral Neuroscience A-E2	VEALE · Richard Edmund	2	1	1st	Fri/5	All	All	195
N914001	Introduction to Behavioral Neuroscience B-E2	VEALE · Richard Edmund	2	1	2nd	Fri/5	All	All	196
N917001	Fundamentals of Neuroscience-E2	ZENAS C. CHAO	2	1	1st	Mon/2	All	All	197
N918001	Introduction to Human Physiology-E2	ZENAS C. CHAO	2	1	2nd	Mon/2	All	All	198
N931001	Introduction to Biological Rhythms-E2	Fustin · Jean Michel	2	1	1st	Thu/5	Mainly 2nd	Science	199
N932001	Introduction to Molecular Cell Biology-E2	Fustin · Jean Michel	2	1	2nd	Fri/5	Mainly 1st	Science	200
N904001	Chromosome Biology-E2	CARLTON · Peter	2	1	1st	Tue/5	Mainly 1st & 2nd	All	201
N907001	Practical Computing for Biologists-E2	CARLTON · Peter	2	1	2nd	Tue/5	Mainly 1st & 2nd	Science	202
N493001	Basic Plant Science-E2	Garry John PILLER	2	1	1st	Mon/2	Mainly 1st & 2nd	Science	203
N494001	Introductory Plant Ecology-E2	Garry John PILLER	2	1	1st	Wed/3	Mainly 1st & 2nd	Science	204
N495001	Principles of Horticulture-E2	Garry John PILLER	2	1	2nd	Wed/3	Mainly 1st & 2nd	Science	205
N905001	Introduction to Ecology-E2	BARNETT · Craig Antony	2	1	1st	Mon/2	Mainly 1st & 2nd	All	206
N906001	Introduction to Evolution-E2	BARNETT · Craig Antony	2	1	2nd	Mon/2	Mainly 1st & 2nd	All	207
N925001	Biological Sciences through Scientific Articles I-E2	TAKENAKA · Mizuki	2	1	1st	Tue/5	Mainly 1st & 2nd	All	208
N926001	Biological Sciences through Scientific Articles II-E2	TAKENAKA · Mizuki	2	1	2nd	Tue/5	Mainly 1st & 2nd	All	209
N928001	Introduction to Biological Data Analysis-E2	RAKERS · Christin	2	1	1st	Thu/3	All	Science	210
N927001	Introduction to Computational Molecular Biology-E2	RAKERS · Christin	2	1	2nd	Thu/3	All	Science	211
N929001	Introduction to Plant Physiology-E2	Daniel Epron	2	1	2nd	Mon/3	Mainly 1st & 2nd	All	212
N533001	Introduction to Earth Science A	FLORES Giancarlo	2	1	1st	Fri/2	Mainly 1st	Science	213
N560001	Introduction to Earth Science B-E2	ZWINGMANN · Horst Friedrich August	2	1	2nd	Wed/1	Mainly 1st & 2nd	Science	214
Natural Sciences (Earth Science)									
N563001	How the Earth Works I-E2:Environmental Change	ENESCU · Bogdan Dumitru	2	1	1st	Thu/4	All	All	215

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N564001	How the Earth Works II-E2:Earth's History	ENESCU , Bogdan Dumitru	2	1	2nd	Mon/5	All	All	216
N565001	Introduction to General Astronomy-E2	LEE , Shiu Hang	2	1	1st	Wed/4	All	All	217
N566001	Science on Water, Soil and Ecosystems-E2	VILAYVONG , Khonesavanh	2	1	2nd	Thu/2	Mainly 1st & 2nd	All	218
N562001	Field Earth Science-E2	ZWINGMANN , Horst Friedrich August	2	1	2nd	Wed/2	2nd or above	Science	219
N537001	Introduction to Engineering Geology	FLORES Giancarlo	2	1	2nd	Thu/3	Mainly 2nd	Science	220
N561001	Advanced Practice of Earth Science-E2	ZWINGMANN , Horst Friedrich August	4	2	2nd/int	-	Mainly 2nd	Science	221
N559001	Introduction to Hydrology-E2	Sameh Kantoush	2	1	1st	Tue/4	Mainly 1st & 2nd	Science	222
N558001	Introduction to Mineral Resources-E2	MCLELLAN , Benjamin	2	1	2nd	Thu/2	Mainly 1st & 2nd	Science	223
Informatics									
T008001	Practice of Basic Informatics	FLORES Giancarlo	2	1	1st	Tue/4	Mainly 1st	Science	224
T056003	Practice of Basic Informatics-E2	ISLAM, A K M Mahfuzul	2	1	1st	Fri/2	Mainly 1st	All	226
T056001	Practice of Basic Informatics-E2	LIN , Donghui	2	1	2nd	Fri/5	All	All	227
T056002	Practice of Basic Informatics-E2	CROMIERES , Fabien	2	1	1st	Fri/5	All	All	228
T015001	Basic Informatics	CHANG , Kai-Chun	2	1	2nd	Tue/4	Mainly 1st	Science	229
T051001	Basic Informatics-E2	LIN , Donghui	2	1	1st	Wed/5	All	All	230
T018001	Information and Society-E2	LIN , Donghui	2	1	1st	Mon/5	All	All	231
T018002	Information and Society-E2	LIN , Donghui	2	1	2nd	Mon/5	All	All	232
T020001	Programming Practice (Matlab)-E2	DE BRECHT , Matthew	4	2	1st	Thu/4 · Thu/5	All	All	233
T058001	Programming Practice (R)-E2	Daniel Epron	2	1	2nd	Mon/5	Mainly 1st & 2nd	All	234
T052001	Introduction to Algorithms-E2	LE GALL, Francois	2	1	1st	Thu/2	All	All	235
T052002	Introduction to Algorithms-E2	LE GALL, Francois	2	1	2nd	Tue/2	All	All	236
T048001	Fundamentals of Discrete Optimization-E2	LE GALL, Francois	2	1	2nd	Wed/2	All	All	237
T049001	Introduction to Coding Theory and Cryptography-E2	LE GALL, Francois	2	1	1st	Fri/2	All	All	238

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T019001	Information Network-E2	DE BRECHT · Matthew	2	1	2nd	Thu/4	All	All	239
T057002	Fundamentals of Artificial Intelligence-E2	CROMIERES · Fabien	2	1	1st	Tue/5	All	All	240
T057001	Fundamentals of Artificial Intelligence-E2	CROMIERES · Fabien	2	1	2nd	Wed/5	All	All	241
T047001	Information Literacy for Academic Study-E2	CROMIERES · Fabien	2	1	2nd	Thu/5	All	All	242
T050001	Processing and Analyzing Data I-E2:Shell-based data processing fundamentals	BROWN, John	2	1	1st	Wed/3	All	All	243
Health and Sports Sciences									
U104001	Basics of the Human Body-E2	SUGUIMOTO, S. Pilar	2	1	1st	Mon/3	All	All	244
U106001	Introduction to Lifestyle Related Diseases-E2	SUGUIMOTO, S. Pilar	2	1	2nd	Mon/3	All	All	245
U144001	Nutrition and Health-E2	POUDYAL · Hemant	2	1	2nd	Fri/5	All	All	246
U145001	Biology and Sociology of Chronic Diseases-E2	POUDYAL · Hemant	2	1	1st	Fri/5	All	All	247
U149001	Introduction to Basic Concepts of Health Psychology-E2:Communication Issues and Decision-making in Patient Care	ANAGNOSTOU · Despoina	2	1	1st	Tue/3	All	All	248
U148001	Structures and Mechanisms of Human Movement-E2	PATAKY · Todd	2	1	1st	Fri/3	Mainly 1st & 2nd	All	249
U155001	Psychopathology I-E2	TAJAN · Nicolas Pierre	2	1	1st	Mon/4	All	All	250
U135001	Introduction to Medical Psychology-E2	VEALE · Richard Edmund	2	1	2nd	Fri/3	All	All	251
U154001	Cultural Aspects of Health Care-E2	ANAGNOSTOU · Despoina	2	1	2nd	Tue/3	All	All	252
U136001	Basic Biology and Metabolism-E2	Fustin · Jean Michel	2	1	1st	Thu/4	Mainly 1st	Science	253
Career Support (International Communication)									
W226001	Scientific English II-E3(Presentation & Discussion)	FLORES Giancarlo	4	1	Year-round	Fri/3	2nd or above	Science	254
W227001	Advanced Scientific English-E3(Debate)	SCHMOECKER · Jan-Dirk	4	1	Year-round	Wed/2	2nd or above	Science	255
W228001	Business English-E3	WILLIAM BABER	2	1	1st	Tue/2	2nd or above	All	256
W228002	Business English-E3	HAN, Hyun Jeong	2	1	2nd	Tue/3	2nd or above	All	257
W229001	Business Thinking-E3	WILLIAM BABER	2	1	1st	Wed/2	2nd or above	All	258
W230001	Negotiation-E3	WILLIAM BABER	2	1	1st	Tue/4	2nd or above	All	259
W231001	Digesting Scientific English-E3	Anderson · James Russell	2	1	1st	Thu/1	2nd or above	All	260

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W232001	Scientific Writing and Presenting in English-E3	Anderson , James Russell	2	1	2nd	Thu/1	2nd or above	All	261
Interdisciplinary Sciences (Environmental Sciences)									
Y212001	Introduction to Food Sustainability-E2	Garry John PILLER	2	1	2nd	Thu/2	Mainly 1st & 2nd	All	262
Y221001	Sustainable Forest Environment-E2	VILAYVONG , Khonesavanh	2	1	1st	Thu/2	Mainly 1st & 2nd	All	263
Y225001	Introduction to Biogeochemistry-E2	Daniel Epron	2	1	1st	Mon/3	Mainly 1st & 2nd	All	264
Y208001	Chemistry , Society and Environment-E2	MCLELLAN , Benjamin	2	1	1st	Wed/2	Mainly 1st & 2nd	Science	265
Y213001	Introduction to Sustainable Development-E2	MCLELLAN , Benjamin	2	1	1st	Thu/4	Mainly 1st & 2nd	All	266
Y209001	Human-environmental Interactions-E2	SINGER JANE	2	1	1st	Thu/3	Mainly 1st & 2nd	All	267
Y213002	Introduction to Sustainable Development-E2	SINGER JANE	2	1	2nd	Thu/4	Mainly 1st & 2nd	All	268
Y211001	Introduction to Biological Invasion-E2	YANG , Chin-Cheng	2	1	2nd	Thu/4	Mainly 1st & 2nd	All	269
Y210001	Insect-human Interactions-E2	YANG , Chin-Cheng	2	1	1st	Thu/4	Mainly 1st & 2nd	All	271
Y214001	Natural Disaster Science-E2	Sameh Kantoush	2	1	2nd	Tue/4	All	All	273
Seminar in Liberal Arts and Sciences (ILAS Seminar)									
Z002075	ILAS Seminar-E2:Global Environmental Issues (地球環境問題)	Daniel Epron	2	1	1st	Mon/5	Mainly 1st	All	274
Z002002	ILAS Seminar-E2:Introduction to Computation and Logic (計算と論理への入門)	DE BRECHT , Matthew	2	1	1st	Mon/5	Mainly 1st	All	275
Z002048	ILAS Seminar-E2:Introduction to Engineering in Biology and Medicine (医工学の基礎)	OKEYO , Kennedy Omondi	2	1	1st	Mon/5	Mainly 1st	All	276
Z002026	ILAS Seminar-E2:Methods in Ecology and Natural History (生態学・自然史学の手法)	BARNETT , Craig Antony	2	1	1st	Mon/5	Mainly 1st	All	277
Z002003	ILAS Seminar-E2:The wonderful world of quantum physics (素晴らしい量子物理の世界)	PETERS,Robert	2	1	1st	Mon/5	Mainly 1st	All	278
Z002039	ILAS Seminar-E2:Topics in Frontier Physics (現代物理学の最先端)	WENDELL,Roger	2	1	1st	Mon/5	Mainly 1st	All	279
Z002071	ILAS Seminar-E2:Clinical and ethical issues within palliative care-the European Context (ヨーロッパにおける緩和ケア)	ANAGNOSTOU , Despoina	2	1	1st	Tue/5	Mainly 1st	All	280
Z002040	ILAS Seminar-E2:Dams and Reservoirs (ダムと貯水池)	Sameh Kantoush	2	1	1st	Tue/5	Mainly 1st	All	281
Z002058	ILAS Seminar-E2:Food Systems in Asia (アジアにおける食農システム)	Hart Nadav FEUER	2	1	1st	Tue/5	Mainly 1st	All	282

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Z002059	ILAS Seminar-E2:Food Systems in Asia (アジアにおける食農システム)	Hart Nadav FEUER	2	1	2nd	Tue/5	Mainly 1st	All	283
Z002078	ILAS Seminar-E2:Frontiers in psychopathology (精神病理学のフロンティア)	TAJAN, Nicolas Pierre	2	1	1st	Tue/5	Mainly 1st	All	284
Z002079	ILAS Seminar-E2:Nanostructured Materials (ナノ組織材料)	GAO, Si	2	1	1st	Tue/5	Mainly 1st	All	285
Z002073	ILAS Seminar-E2:Robots in Japanese Popular Culture (日本の大衆文化のなかのロボット)	DANIELL, Thomas	2	1	1st	Tue/5	Mainly 1st	All	286
Z002067	ILAS Seminar-E2:The Life and Work of Albert Einstein (アルバート・アインシュタインの生涯と業績)	Helmke, Stefan	2	1	1st	Tue/5	Mainly 1st	All	287
Z002031	ILAS Seminar-E2:What are Liquids? Answers from Physics, Chemistry and Engineering (液体は何?液体の基礎物理学と化学)	THUERMER, Stephan	2	1	1st	Tue/5	Mainly 1st	All	288
Z002010	ILAS Seminar-E2:First Step to Qualitative Research Methods - Field Surveys and Data Analysis (質的研究へのはじめの一步 - フィールド調査とデータ分析)	SAMADDAR, Subhajyoti	2	1	1st	Wed/5	1st	All	289
Z002008	ILAS Seminar-E2:Frontiers in Theoretical Physics I (理論物理学最前線 I)	Antonio De Felice	2	1	1st	Wed/5	Mainly 1st	All	291
Z002016	ILAS Seminar-E2:Frontiers in Theoretical Physics II (理論物理学最前線 II)	Werner, Marcus Christian	2	1	1st	Wed/5	Mainly 1st	All	292
Z002012	ILAS Seminar-E2:Global Health (グローバルヘルス)	SUGUIMOTO, S. Pilar	2	1	1st	Wed/5	Mainly 1st	All	293
Z002014	ILAS Seminar-E2:Introduction to Human Genetics and Genetic Disease (人類遺伝学と遺伝病入門)	Marco, Marques Candeias	2	1	1st	Wed/5	Mainly 1st	All	294
Z002020	ILAS Seminar-E2:Project-based data analysis seminar (プロジェクト型データ解析)	BROWN, John	2	1	1st	Wed/5	Mainly 1st	All	295
Z002063	ILAS Seminar-E2:Wearable technology (ウェアラブル技術入門)	PHILAMORE, Hemma	2	1	1st	Wed/5	Mainly 1st	All	296
Z002043	ILAS Seminar-E2:Minds and Machines- Can a Machine Think (心と機械)	ZENAS C. CHAO	2	1	1st	Thu/2	Mainly 1st	All	297
Z002080	ILAS Seminar-E2 :Introduction to Probability (確率入門)	CROYDON, David	2	1	1st	Thu/4	Mainly 1st	All	298
Z002041	ILAS Seminar-E2:Encounters with modern arithmetic (現代整数論との出会い)	TAN, Fucheng	2	1	1st	Thu/5	Mainly 1st	All	299
Z002046	ILAS Seminar-E2:Ethical issues in Health sciences (健康科学における倫理的課題)	POUDYAL, Hemant	2	1	1st	Thu/5	Mainly 1st	All	300
Z002004	ILAS Seminar-E2:Frontiers of Earthquake Science (地震学の最前線)	ENESCU, Bogdan Dumitru	2	1	1st	Thu/5	Mainly 1st	All	301
Z002019	ILAS Seminar-E2:How to Read a Scientific Paper (英語科学論文の読み方)	HEJNA, James	2	1	1st	Thu/5	Mainly 1st	All	302
Z002022	ILAS Seminar-E2:Introduction to Stem and iPS Cells (幹細胞とiPS細胞入門)	Marco, Marques Candeias	2	1	1st	Thu/5	Mainly 1st	All	303

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Z002017	ILAS Seminar-E2:Introduction to Biomedical Presentation and Debate (医学英語入門-プレゼンテーションとディベート)	Walinda , Erik	2	1	1st	Thu/5	Mainly 1st	All	304
Z002018	ILAS Seminar-E2:Introduction to the biology of nematodes (線虫の生物学入門)	CARLTON , Peter	2	1	1st	Thu/5	Mainly 1st	All	306
Z002034	ILAS Seminar-E2:Introduction to the biology of nematodes (線虫の生物学入門)	CARLTON , Peter	2	1	2nd	Thu/5	Mainly 1st	All	307
Z002062	ILAS Seminar-E2:Introduction to robotics - a practical approach (ロボット工学入門-実践編)	PHILAMORE , Hemma	2	1	1st	Thu/5	Mainly 1st	All	308
Z002068	ILAS Seminar-E2:Programming for data analysis (データ解析のためのプログラミング)	VANDENBON , Alexis	2	1	1st	Thu/5	Mainly 1st	All	309
Z002056	ILAS Seminar-E2:Regional Disaster Prevention (地域防災学)	VILAYVONG , Khonesavanh	2	1	1st	Thu/5	Mainly 1st	All	310
Z002025	ILAS Seminar-E2:Smart Materials (Innovations in Materials Chemistry) (スマートマテリアル-材料化学の革新)	LANDENBERGER , Kira Beth	2	1	1st	Thu/5	Mainly 1st	All	311
Z002050	ILAS Seminar-E2:The Invisible Universe (不可視の宇宙)	LEE , Shiu Hang	2	1	1st	Thu/5	Mainly 1st	All	312
Z002024	ILAS Seminar-E2:Urban Pest Management (都市害虫の管理)	YANG , Chin-Cheng	2	1	1st	Thu/5	Mainly 1st	All	313
Z002052	ILAS Seminar-E2:Wonders of semiconductor (半導体のふしぎ)	DE ZOYSA , Menaka	2	1	1st	Thu/5	Mainly 1st	All	315
Z002001	ILAS Seminar-E2:Contracts and Law in Modern Society (現代社会における契約と法)	KARAISKOS , Antonios	2	1	1st	Fri/5	Mainly 1st	All	316
Z002027	ILAS Seminar-E2:Introduction to life science and scientific conversation (生命科学へのいざない)	Walinda , Erik	2	1	1st	Fri/5	Mainly 1st	All	317
Z002069	ILAS Seminar-E2:Let's create 3D computer animations (三次元アニメーションを作ってみよう)	PATAKY , Todd	2	1	1st	Fri/5	Mainly 1st	All	318
Z002021	ILAS Seminar-E2:Logic , critical thinking and argument (自然科学・工学に関する論理的・批判的思考法と議論)	MCLELLAN , Benjamin	2	1	1st	Fri/5	Mainly 1st	All	319
Z002060	ILAS Seminar-E2:Introduction to anthropological thinking (人類学的アプローチ概論)	LAHOURNAT , Florence	2	1	1st/int	-	Mainly 1st	All	320
Z002061	ILAS Seminar-E2:Introduction to cross-cultural communication (異文化コミュニケーション入門)	LAHOURNAT , Florence	2	1	1st/int	-	Mainly 1st	All	321
Z002029	ILAS Seminar-E2:Consumer Society and Law (消費生活と法)	KARAISKOS , Antonios	2	1	2nd	Mon/5	Mainly 1st	All	322
Z002049	ILAS Seminar-E2:Discussions in Biomechanics and Biophysics (バイオメカニクス・生物物理セミナー)	OKEYO , Kennedy Omondi	2	1	2nd	Mon/5	Mainly 1st	All	323
Z002036	ILAS Seminar-E2:Introduction to Bird Study - Ornithology (鳥類研究のすすめ)	BARNETT , Craig Antony	2	1	2nd	Mon/5	Mainly 1st	All	324
Z002013	ILAS Seminar-E2:How to Study Atoms and Molecules with the Help of Light (光を使って原子や分子を調べる)	THUERMER , Stephan	2	1	2nd	Tue/5	Mainly 1st	All	325
Z002074	ILAS Seminar-E2:Radical Art and Politics in Japan 1960-70 (1960年から70年の日本における前衛芸術と政治)	DANIELL , Thomas	2	1	2nd	Tue/5	Mainly 1st	All	327

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Z002072	ILAS Seminar-E2:Understanding and critical appraisal of qualitative research methods in health care (ヘルスケアにおける質的研究)	ANAGNOSTOU, Despoina	2	1	2nd	Tue/5	Mainly 1st	All	328
Z002064	ILAS Seminar-E2:An introduction to programming for engineers (エンジニア向けのプログラミング入門)	PHILAMORE, Hemma	2	1	2nd	Wed/5	Mainly 1st	All	329
Z002030	ILAS Seminar-E2:Socio-epidemiology in health research (ヘルスリサーチにおける社会疫学)	SUGUIMOTO, S. Pilar	2	1	2nd	Wed/5	Mainly 1st	All	331
Z002042	ILAS Seminar-E2:Introduction to Computational Neuroscience (計算論的神経科学入門)	ZENAS C. CHAO	2	1	2nd	Thu/2	Mainly 1st	All	332
Z002065	ILAS Seminar-E2:An introduction to programming for everyone (一般向けのプログラミング入門)	PHILAMORE, Hemma	2	1	2nd	Thu/5	Mainly 1st	All	333
Z002033	ILAS Seminar-E2:Biochemistry Principles (生化学の塾)	Walinda, Erik	2	1	2nd	Thu/5	Mainly 1st	All	334
Z002045	ILAS Seminar-E2:Critical thinking and Communication skills (批判的思考とコミュニケーション・スキル)	POUDYAL, Hemant	2	1	2nd	Thu/5	Mainly 1st	All	335
Z002037	ILAS Seminar-E2:Earthquakes & Volcanoes - Prediction and Hazards (地震・火山噴火の予知及び防災)	ENESCU, Bogdan Dumitru	2	1	2nd	Thu/5	Mainly 1st	All	336
Z002057	ILAS Seminar-E2:Geo-Disaster Risk Reduction and Prevention (土砂災害の防災・減災学)	VILAYVONG, Khonesavanh	2	1	2nd	Thu/5	Mainly 1st	All	337
Z002035	ILAS Seminar-E2:Insect and ecosystem sustainability (昆虫と持続可能な生態系)	YANG, Chin-Cheng	2	1	2nd	Thu/5	Mainly 1st	All	338
Z002066	ILAS Seminar-E2:Introductory Bioinformatics (バイオインフォマティクス入門)	VANDENBON, Alexis	2	1	2nd	Thu/5	Mainly 1st	All	340
Z002053	ILAS Seminar-E2:What is light? (光って何?)	DE ZOYSA, Menaka	2	1	2nd	Thu/5	Mainly 1st	All	341
Z002038	ILAS Seminar-E2:Biochemistry Principles (生化学の塾)	Walinda, Erik	2	1	2nd	Fri/5	Mainly 1st	All	342
Z002070	ILAS Seminar-E2:Let's simulate human movement (コンピューターで人を動かしてみよう)	PATAKY, Todd	2	1	2nd	Fri/5	Mainly 1st	All	343
Z002076	ILAS Seminar-E2:Technology and Modern Society - A Historical Perspective (日本の工業技術史と現代社会)	ISLAM, A K M Mahfuzul	2	1	2nd	Fri/5	Mainly 1st	All	344
Z003006	ILASセミナー (海外) : Conflict Management[Global Water Issues]	角 哲也	2	1	1st/int	-	Mainly 1st	All	345

How to read Syllabi シラバスの見方

※ ILASセミナー用フォーマット / For ILAS Seminars

Course title <English>	授業科目名 <英訳>		Affiliated department, Job title,Name	担当者所属 職名・氏名		
Group	群	Field(Classification)	分野 (分類)			
Language	使用言語		Old group	旧群※ 1	Number of credits	単位数
Number of weekly time blocks	週コマ数	Class style	授業形態		Course offered year/period	開講年度・開講期
Day/period	曜時間	Target year	配当学年	Eligible students	対象学生	
[Outline and Purpose of the Course]						
授業の概要・目的						
[Course Goals]						
到達目標						
[Course Schedule and Contents]						
授業計画と内容※ 2						
[Class requirement]						
履修要件						
[Method, Point of view, and Attainment levels of Evaluation]						
成績評価の方法・観点及び達成度※ 2						
[Textbook]						
教科書						
[Reference book, etc.] (Reference book)						
参考書						
[Regarding studies out of class (preparation and review)]						
授業外学習 (予習・復習) 等						
[Others (office hour, etc.)]						
その他 (オフィスアワー) 等						

Lecture code: 講義コード

Course title <English>	授業科目名 <英訳>		Affiliated department, Job title,Name	担当者所属 職名・氏名		
Group	群	Number of credits	単位数	Number of weekly time blocks	週コマ数	
Class style	授業形態		Course offered year/period	開講年度・開講期	Quota (Freshman)	受講定員 (1回生定員)
Target year	配当学年	Eligible students	対象学生		Day/period	曜時間
Classroom	教室				Language	使用言語
Keyword	キーワード					
[Outline and Purpose of the Course]						
授業の概要・目的						
[Course Goals]						
到達目標						
[Course Schedule and Contents]						
授業計画と内容※ 2						
[Class requirement]						
履修要件						
[Method, Point of view, and Attainment levels of Evaluation]						
成績評価の方法・観点及び達成度※ 2						
[Textbook]						
教科書						
[Reference book, etc.] (Reference book)						
参考書						
[Regarding studies out of class (preparation and review)]						
授業外学習 (予習・復習) 等						
[Others (office hour, etc.)]						
その他 (オフィスアワー) 等						

Lecture code: 講義コード

※ 1

平成24年度以前入学者用の群を表記しています。平成24年度以前入学者については、この欄に記載した群により、学部ごとに修得すべき全学共通科目の単位数が決められています。

In this space, groups of courses for students enrolled in or before 2012 are listed. The mandatory number of liberal arts and sciences' credits students should obtain from these groups is fixed by each faculty for enrolled students within that time frame.

※ 2

ここに掲載されているシラバスは、各科目の概要を伝えるものです。科目を選択する際の参考にしてください。実際の授業は、教員と参加する学生によって作られていくものです。そのため、授業の進捗状況や受講生の習熟度などによって、「授業計画と内容」、「成績評価の方法・観点及び達成度」が変わる場合があります。それらの変更については、教員が授業の中で受講生に直接伝えることを原則としています。

Syllabi in this booklet describe each course. Please refer to it when you select courses. Instructors and students who attend make the actual course. Therefore, "Course schedule and Contents" and "Method, Point of view, and Attainment levels of Evaluation" might be changed due to the progress of the course or proficiency level of the students. In that case, instructor should directly inform students about the change as a general rule.

Lecture code: H155001

Course numbering		U-LAS00 10006 LE34			
Course title <English>	Logic I-E2 :Sentential Logic and Deductions		Affiliated department, Job title,Name	Graduate School of Medicine Senior Lecturer,John BROWN	
	Logic I-E2 :Sentential Logic and Deductions				
Group	Humanities and Social Sciences		Field(Classification)	Philosophy(Foundations)	
Language	English		Old group	Group A	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Wed.1		Target year	Mainly 1st & 2nd year students	Eligible students For all majors
[Outline and Purpose of the Course]					
Logic is the study of arguments and actions taken based on the validity of those arguments.					
Students of all disciplines will learn how to transform natural language (English, Japanese, etc) into symbolic representations, and use those representations to assess the validity of arguments. The content of the course is applicable to both study and everyday thought processes. This course will cover arguments that can be described by sentential logic.					
Students will actively practice (1) transforming English sentences into their symbolic representation, (2) assessing the representations logically, and (3) transforming the conclusion of logical arguments back to natural English.					
[Course Goals]					
(1) Students will be able to capture the intent/meaning of English language documents or statements and represent the meaning symbolically. (2) Students will be able to derive logical conclusions from a document, and detect examples of poor or incorrect logic. (3) Students will practice creating documents in natural English language based on logical argument, with emphasis on creating English that is easy to interpret. After completion of the course, students should acquire improved English expression skill.					
[Course Schedule and Contents]					
(1~2) Course overview: what is an argument, and what makes an argument valid?					
(3~4) Classes of valid and incorrect arguments, sentence forms, logical connectives, conversion of simple sentences to symbols					
(5~6) Truth table definitions of AND, OR, and NOT, argument analysis by truth table, conditional and biconditional truth tables					
(7~9) Deductive logic rules, introduction to proofs					
(10~11) Deductive proofs using non-conditional rules					
Continue to Logic I-E2 :Sentential Logic and Deductions(2) ↓ ↓ ↓					

Logic I-E2 :Sentential Logic and Deductions(2)
(12~13) Proofs including conditional rules
(14) Summary and review
(15) Final examination
(16) Feedback (Methods of feedback to be notified during class)
[Class requirement]
None
[Method, Point of view, and Attainment levels of Evaluation]
Attendance (25%), Quizzes (35%), final examination (40%).
[Textbook]
Not used
[Reference book, etc.]
(Reference book) Gustason 『Elementary Symbolic Logic』 (Waveland Press) ISBN:0-88133-412-X
[Regarding studies out of class (preparation and review)]
Students are recommended to review prior lecture content for 2-3 hours per week outside of class.
[Others (office hour, etc.)]

Lecture code: H156001

Course numbering		U-LAS00 10008 LE34			
Course title <English>	Logic II-E2 :Quantificational Logic and Deductions		Affiliated department, Job title,Name	Graduate School of Medicine Senior Lecturer,John BROWN	
	Logic II-E2 :Quantificational Logic and Deductions				
Group	Humanities and Social Sciences		Field(Classification)	Philosophy(Foundations)	
Language	English		Old group	Group A	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019・Second semester
Day/period	Wed.1		Target year	Mainly 1st & 2nd year students	Eligible students For all majors
[Outline and Purpose of the Course]					
Students will expand their study of symbolic logic to incorporate quantitative elements in logical reasoning. In addition to the basic "if-then", "and", "or", and "not" logical connectives covered in Logic I, the course will add the use of variables and their application to logical argument. This includes concepts such as "there exists" or "for all".					
The course will provide ample time for study and discussion of quantitative logical proofs. Similar to Logic I, transformation of natural language to symbolic representation, logical deduction and reasoning in symbolic form, and translation of the conclusions from quantitative logic back to high-quality English will all be covered.					
[Course Goals]					
(1) Students will acquire the ability to assess an argument in order to determine the unique or general nature of the elements of the argument.					
(2) Students will be able to solve quantitative logic proofs, resulting in the ability to prove the existence or non-existence of something, or an actionable conclusion as a result of a proof.					
(3) Students will practice and acquire enhanced ability to write clear, systematic English documents that are unambiguous and present a logical system of reasoning.					
[Course Schedule and Contents]					
(1~3) Review: sentential logic and truth tables, deductive proofs In-class exercises: deductive proofs and conversion of natural English to symbolic form.					
(4~6) Introduction to quantificational logic Variables, "exists", and "for all" elements Conversion of natural English to quantificational logic symbols Quantificational logic symbolic representation					
(7~10) Quantificational logic proofs: introduction and semantics Quantificational logic: existential instantiation and existential generalization Quantificational logic: universal instantiation and universal generalization Quantificational logic: quantifier negation, and proof exercises					
Continue to Logic II-E2 :Quantificational Logic and Deductions(2) ↓ ↓					

Logic II-E2 :Quantificational Logic and Deductions(2)
(11) Logic proofs strategies Strategies and techniques for solving logical proofs
(12~14) Modern applied logic, with consideration of the "Semantic Web"
(15) Exam: solution of quantitative logic proofs, writing of essay/document describing a problem, the symbolic representation of the problem, logical proof, and writing of the logical conclusion derived from proof.
(16) Feedback : to be communicated in class.
[Class requirement]
Students are <u>STRONGLY</u> recommended to take Logic I before this course. (Self-study of Chapters 1-3 of the reference text before taking this course is possible.)
Logic Iを履修することを強く推薦する。 (参考書のChapter 1-3を独学した場合もLogic IIを履修することが可能。)
[Method, Point of view, and Attainment levels of Evaluation]
Attendance (25%), quizzes (35%), final exam (40%)
[Textbook]
Not used
[Reference book, etc.]
(Reference book) Gustason 『Elementary Symbolic Logic』 (Waveland Press) ISBN:0-88133-412-X
[Regarding studies out of class (preparation and review)]
Students should review weekly course material. Students may need to practice solving challenging proofs outside of class.
[Others (office hour, etc.)]

Lecture code: H149001

Course numbering		U-LAS00 10012 LE34			
Course title <English>		The History of Eastern Thought I-E2 The History of Eastern Thought I-E2		Affiliated department, Job title,Name Graduate School of Letters Associate Professor,CATT, Adam Alvah	
Group		Humanities and Social Sciences		Field(Classification) Philosophy(Foundations)	
Language		English		Old group Group A	
Number of weekly time blocks		1		Number of credits 2	
Class style		Lecture		Course offered year/period 2019 • First semester	
Day/period		Wed.2		Target year All students	
Eligible students		For liberal arts students			
[Outline and Purpose of the Course]					
This course is designed as an introduction to the history of eastern philosophical and religious thought. We will begin with a reading of early Indian Vedic literature and then turn our focus to Zoroastrianism and early and later forms of Buddhism.					
[Course Goals]					
By the end of this course, students will have gained a basic understanding of eastern philosophical and religious thought by learning how to respond to readings in this field in a critical manner.					
[Course Schedule and Contents]					
The course is divided into the following three sections, each with a different theme. We will spend about five weeks on each section. You will be asked to do readings, in-class presentations, and discussion to help you assimilate the material.					
<ol style="list-style-type: none"> 1. The Vedas and Upanishads 2. Zoroastrianism 3. Buddhism 					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
Grades are based on attendance (20%), class participation (30%), and assignments/exams (50%). Important: If you miss four or more classes, you will not be given credit for the course.					
[Textbook]					
Relevant materials will be provided in class.					
[Regarding studies out of class (preparation and review)]					
Readings will be assigned on a weekly basis, and you will be expected to prepare sufficiently before each class.					
[Others (office hour, etc.)]					
Office hours to be specified (check KULASIS). For questions about the course or to set up a meeting, email me at catt.adam.7c@kyoto-u.ac.jp . Please include "Eastern Thought I" in the mail header and your full name and student number in the email. Important: Make sure that you search for answers to questions yourself before contacting me by email.					



Lecture code: H150002

Course numbering	U-LAS00 10015 LE34				
Course title <English>	Science of Religion I-E2 Science of Religion I-E2		Affiliated department, Job title,Name	Graduate School of Letters Associate Professor,CATT, Adam Alvah	
Group	Humanities and Social Sciences	Field(Classification)	Philosophy(Foundations)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • Second semester
Day/period	Wed.2	Target year	All students	Eligible students	For liberal arts students
[Outline and Purpose of the Course]					
This course provides an introduction to methods for understanding and evaluating religious ideas and practices, focusing in particular on modern approaches such as evolutionary biology and cognitive psychology to address the question of where religious beliefs come from and why we find them so compelling.					
[Course Goals]					
By the end of this course, students will have gained a basic understanding of the scientific study of religion, learning how to respond to readings in this field in a critical manner.					
[Course Schedule and Contents]					
After an introduction to the course, each class will be based around addressing the following two questions: 1. Why do we have religious beliefs? 2. How can religious beliefs be explained using the tools of anthropology, evolutionary biology, and cognitive psychology?					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
Grades are based on attendance (20%), class participation (30%), and assignments/exams (50%). Important: If you miss four or more classes, you will not be given credit for the course.					
[Textbook]					
Relevant materials will be provided in class.					
[Reference book, etc.]					
(Reference book) Introduced during class					
[Regarding studies out of class (preparation and review)]					
Readings will be assigned on a weekly basis, and you will be expected to prepare sufficiently before each class.					
[Others (office hour, etc.)]					
Office hours to be specified (check KULASIS). For questions about the course or to set up a meeting, email me at catt.adam.7c@kyoto-u.ac.jp. Please include "Religion" in the mail header and your full name and student number in the email. Important: Make sure that you search for answers to questions yourself before contacting me by email.					

Lecture code: H151001

Course numbering		U-LAS00 10021 LE34			
Course title <English>	History of Modern Science-E2 History of Modern Science-E2		Affiliated department, Job title,Name	Graduate School of Asian and African Area Studies Associate Professor,D'SOUZA, Rohan Ignatious	
Group	Humanities and Social Sciences	Field(Classification)	Philosophy(Foundations)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • First semester
Day/period	Tue.3	Target year	All students	Eligible students	For all majors
[Outline and Purpose of the Course]					
Broadly, in part one [semester: April-September], the course will introduce students to some of the main historiographical debates about the origins and defining features of modern science. The central effort here is to familiarise students both at the level of the biographical details of the main thinkers and the significant ideas that comprise our current understandings and assessments about what constitutes modern science.					
[Course Goals]					
By rehearsing some of the significant historiographical and philosophical debates and discussions on the theme of modern science, this course aims to develop an interdisciplinary ability. The attempt to problematize the “hard sciences” through social science questions and theories will help prepare students to take up innovative and important research projects and also helps them think through the centrality of modern science in their everyday lives.					
[Course Schedule and Contents]					
Each class will comprise a 90 minute session; involving a lecture of 60 minutes and followed by a 30 minute interactive discussion in which student participation will also be elicited through either group or individual presentations. Four themes will be covered in this class and each theme will be covered in three to four weeks. a) Plato's (429?-347 B.C.E.) Forms and Aristotle's (384-322 B.C.E.) Empiricism b) The Scientific Revolution c) Colonial Science d) Scientific Nationalism					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
There will be a regular cycle of written submissions and feedback through class discussions and teacher evaluations. The idea is to develop a credible capacity for reading and writing amongst those who take up the course. Evaluations will be based on class presentations, writing assignments and a tutorial. Details are explained during class.					
Continue to History of Modern Science-E2(2) ↓ ↓ ↓					

History of Modern Science-E2(2)
[Textbook]
Not used
[Reference book, etc.]
(Reference book)
Steven Shapin 『The Scientific Revolution』 (University of Chicago Press 1996) ISBN:978-0226750217 Margaret J. Osler 『Reconfiguring the World: Nature, God and Human Understanding from the Middle Ages to Early Modern Europe』 (The John Hopkins Press: Baltimore 2010) ISBN:978-0801896569 Alfred North Whitehead 『Science and the Modern World』 (The Free Press: New York 1967 [1925]) ISBN: 978-0684836393 Deepak Kumar 『Science and the Raj : a study of British India』 (Oxford University Press; New Delhi 2006 (2nd edition) [1995]) ISBN: 978-0195680034 Hiromi Mizuno 『Science for the Empire: Scientific Nationalism in Modern Japan』 (Stanford University Press: Stanford 2008) ISBN:978-0804776561
(Related URL)
(Relevant sections and chapters from the above books will be assigned as readings for the course. Other reading materials such as articles or short write-ups may be included based on class discussions and interest.)
[Regarding studies out of class (preparation and review)]
Students will be expected to have read at least five pages of pre-assigned reading, at the very minimum, before attending each class.
[Others (office hour, etc.)]
Students can meet me during office hours with prior appointment.


Lecture code: H154001

Course numbering		U-LAS00 10022 LE34			
Course title <English>	Philosophy of Modern Science-E2 Philosophy of Modern Science-E2		Affiliated department, Job title,Name	Graduate School of Asian and African Area Studies Associate Professor,D'SOUZA, Rohan Ignatious	
Group	Humanities and Social Sciences	Field(Classification)	Philosophy(Foundations)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • Second semester
Day/period	Tue.3	Target year	All students	Eligible students	For all majors
[Outline and Purpose of the Course]					
<p>This section of the course will introduce students to some of the Philosophical debates that have troubled the notion of modern science.</p> <p>The central effort, however, is to introduce the study of these “philosophical problems” as aspects of historiographical concern. That is, to urge students to discuss the relationships between philosophy and modern science as puzzles and ideologies of history writing and thinking. The thrust, therefore, will be on biographies and historical contexts in understanding how philosophy has helped set up the interrogation of modern science.</p>					
[Course Goals]					
<p>By rehearsing some of the significant historiographical and philosophical debates and discussions on the theme of modern science, this course aims to develop an interdisciplinary ability. The attempt to problematize the “hard sciences” through social science questions and theories will help prepare students to take up innovative and important research projects and also helps them think through the centrality of modern science in their everyday lives.</p>					
[Course Schedule and Contents]					
<p>Each class will comprise a 90 minute session; involving a lecture of 60 minutes and followed by a 30 minute interactive discussion in which student participation will also be elicited through either group or individual presentations.</p> <p>Four themes will be covered in this class and each theme will be covered in three to four weeks.</p> <p>a) Karl Popper and the ‘Problem of Demarcation’ b) Thomas Kuhn and ‘Normal Science’, ‘Progress’ and the ‘Paradigm’ c) Paul Feyerabend ‘Against Method’ d) Realism and their Discontents</p>					
[Class requirement]					
None					
Continue to Philosophy of Modern Science-E2(2) ↓ ↓ ↓					

Philosophy of Modern Science-E2(2)
[Method, Point of view, and Attainment levels of Evaluation]
<p>There will be a regular cycle of written submissions and feedback through class discussions and teacher evaluations. The idea is to develop a credible capacity for reading and writing amongst those who take up the course.</p> <p>Evaluations will be based on class presentations, writing assignments and a tutorial. Details are explained during class.</p>
[Textbook]
Not used
[Reference book, etc.]
<p>(Reference book)</p> <p>Donald Gillies 『Philosophy of Science in the 20th Century』 (Blackwell) ISBN:978-0631183587 Anthony O’ Hear 『Karl Popper』 (Routledge) ISBN:978-0415084802 Thomas Kuhn 『The Essential Tension』 (University of Chicago Press) ISBN:978-0226458069 Alexander Bird 『Thomas Kuhn』 (Princeton University Press) Paul Horwich (ed.) 『World Changes』 (MIT Press) ISBN:978-0262581387 Paul Feyerabend 『Killing Time: The Autobiography of Paul Feyerabend』 (University of Chicago Press) ISBN:978-0226245324 Paul Feyerabend 『Against Method』 (Verso; 4th edition) ISBN:978-1844674428 G. Andersson 『Criticism and the History of Science: Kuhn's, Lakatos's and Feyerabend's Criticisms of Critical Rationalism』 (Leiden: Brill) C. Hooker and P. Churchland (ed.) 『Images of Science』 (University of Chicago Press) ISBN:978-0226106540 Jarrett Leplin (ed.) 『Scientific Realism』 (University of California Press) ISBN:978-0520051553</p> <p>(Related URL)</p> <p>(Relevant sections and chapters from the above books will be assigned as readings for the course. Other reading materials such as articles or short write-ups may be included based on class discussions and interest.)</p>
[Regarding studies out of class (preparation and review)]
Students will be expected to have read at least five pages of pre-assigned reading, at the very minimum, before attending each class.
[Others (office hour, etc.)]
Students can meet me during office hours with prior appointment.


Lecture code: H159001

Course numbering		U-LAS00 10025 LE34			
Course title <English>	Theories of Religion in the Social Sciences-E2		Affiliated department, Job title,Name	Center for Southeast Asian Studies Associate Professor,Julius Bautista	
	Theories of Religion in the Social Sciences-E2				
Group	Humanities and Social Sciences		Field(Classification)	Philosophy(Foundations)	
Language	English		Old group	Group A	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Tue.4		Target year	Mainly 1st & 2nd year students	Eligible students For liberal arts students
[Outline and Purpose of the Course]					
The course offers a basic foundation for the study of religion by introducing a number of different perspectives from the Sciences and Humanities. Religions are conceived of as part of the history of ideas that shaped the major intellectual traditions such as science, politics, cultural and social studies. The course will cultivate two learning areas: (1) a basic understanding of the approaches and methodologies that have been used in the study of religious phenomena, and (2) a critical discussion of the various religious, moral and ethical issues that influence contemporary ideas and discoveries.					
[Course Goals]					
At the end of this course, students will be able to (1) describe how some of the world's major thinkers and intellectuals have engaged with the topic of religion over the past two centuries. From this intellectual platform, students will be equipped to (2) describe how the concept of religion itself has evolved in ways that is relevant to the various social, cultural and environmental conditions in which it can be observed.					
[Course Schedule and Contents]					
Week 1 Introduction and Course Queries					
Week 2 Religion as an Academic Field of Study					
Week 3 Religion and the formation of Social Sciences					
Week 4 Anthropological Approaches to Religion					
Week 5 Religion and the Sociological Imagination					
Week 6 Religion as a Psychological Problem					
Week 7 Religion and the formation of Critical Politics					
Week 8 Recap Lecture/Midterm					
Week 9 Materialist Approaches to Religion					
Week 10 Interpretive Approaches to Religious Experience					
Week 11 Religion and the Scientific Method					
Week 12 Religion and the Secular					
Week 13 Conclusion and Recap					
Week 14 Reading Week					
Week 15 Examination					
Week 16 Feedback Week					
Continue to Theories of Religion in the Social Sciences-E2(2) ↓ ↓ ↓					

Theories of Religion in the Social Sciences-E2(2)	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Students will be evaluated according to three main criteria. (1) their ability to participate class discussion (20% of the overall grade), (2) a written essay (40%), and (3) group project/presentation (40%). ***The group project/presentation may be replaced by a written exam, depending on class numbers. This will be announced when the final number of enrollment is confirmed.**	
[Textbook]	
Kessler, Gary 『Fifty Key Thinkers on Religion』 (Routledge) ISBN:415492610	
[Reference book, etc.]	
(Reference book)	
Introduced during class	
[Regarding studies out of class (preparation and review)]	
No prior knowledge of religion is required. Students should be able to participate in discussions with their classmates in English. This may be face-to-face small group discussion or online. Students may also be asked to make short presentations in English based on the class topics.	
[Others (office hour, etc.)]	
Consultation is by appointment via email to bautista@cseas.kyoto-u.ac.jp	
	
	

Lecture code: H161001

Course numbering					
Course title <English>	Japanese Philosophy I-E2 Japanese Philosophy I-E2		Affiliated department, Job title,Name	Graduate School of Letters Associate Professor,PASCA, Roman	
Group	Humanities and Social Sciences	Field(Classification)	Philosophy(Foundations)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • First semester
Day/period	Wed.2	Target year	All students	Eligible students	For all majors
[Outline and Purpose of the Course]					
<p>What is philosophy, after all? Is it a discipline that gives us answers, or is it a tool that helps us ask better questions? What is “Japanese philosophy”? What is its relevance for world philosophy? Is there a difference between “shiso;” and “tetsugaku”?</p> <p>In this class, we will start from these questions and try to think together about the meaning of premodern “Japanese philosophy”. The course will focus on premodern Japanese thought, discussing the most important traditions and authors.</p>					
[Course Goals]					
<p>In this class, students will learn</p> <ol style="list-style-type: none"> 1) to recognize the characteristics of a philosophical text; 2) to critically examine fundamental questions, notions and concepts in premodern Japanese thought; 3) to reflect on the challenges and limitations of translating philosophy; 4) to express their opinions, ideas and arguments in a clear manner. 					
[Course Schedule and Contents]					
<p>For each meeting, we will read and discuss one (or more) short text(s) of Japanese philosophy. We will think together about their meaning and relevance, while also talking - from a philosophical perspective - about concepts and notions such as language, metaphysics, critical spirit, ethics, self, mind, human nature, political thought, education, environment, culture and identity, aesthetics etc.</p> <p>The course is structured as follows.</p> <p>Topics:</p> <ol style="list-style-type: none"> 1. Introduction. What is “philosophy”? What is “Japanese philosophy”? [1 week] 2. Re-reading the Shotoku Constitution. Kojiki. [1 week] 3. Buddhism as philosophy. [3-4 weeks] Kukai, Dogen, Nichiren, Zen, Shinran etc. 4. Confucianism and Neo-confucianism. [3-4 weeks] Hayashi Razan, Kumazawa Banzan, Kaibara Ekken, Yamaga Soko, Ogyu Sorai, Miura Baien, etc. 5. Shinto and kokugaku [2-3 weeks] Motoori Norinaga, Hirata Atsutane etc. 6. Aesthetics [3-4 weeks] Genji monogatari, Fujiwara no Shunzei, Kamo no Chomei, Zeami. 7. Course round-up and reflection. [1 week] 8. Feedback (Students will be notified of feedback methods separately.) [1 week] 					
----- Continue to Japanese Philosophy I-E2(2) ↓ ↓ ↓					

Japanese Philosophy I-E2(2)	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Short quizzes and a final paper.	
[Textbook]	
No textbook. There will be class handouts for each meeting.	
[Regarding studies out of class (preparation and review)]	
There will be several reading assignments - students will have to read a short text before class and prepare comments.	
[Others (office hour, etc.)]	

Lecture code: H162001

Course numbering					
Course title <English>	Japanese Philosophy II-E2 Japanese Philosophy II-E2		Affiliated department, Job title,Name	Graduate School of Letters Associate Professor,PASCA, Roman	
Group	Humanities and Social Sciences	Field(Classification)	Philosophy(Foundations)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019・Second semester
Day/period	Wed.2	Target year	All students	Eligible students	For all majors
[Outline and Purpose of the Course]					
<p>What is philosophy, after all? Is it a discipline that gives us answers, or is it a tool that helps us ask better questions? What is “Japanese philosophy”? What is its relevance for world philosophy? Is there a difference between “shis#333” and “tetsugaku”?</p> <p>In this class, we will start from these questions and try to think together about the meaning of “Japanese philosophy”. This is an introductory class meant to familiarize students with some of the most important names and topics in modern and contemporary Japanese philosophy.</p>					
[Course Goals]					
<p>In this class, students will learn</p> <ol style="list-style-type: none"> 1) to recognize the characteristics of a philosophical text; 2) to critically examine fundamental questions, notions and concepts in modern and contemporary Japanese thought; 3) to reflect on the challenges and limitations of translating philosophy; 4) to express their opinions, ideas and arguments in a clear manner. 					
[Course Schedule and Contents]					
<p>For each meeting, we will read and discuss one (or more) short text(s) of Japanese philosophy. We will think together about concepts and notions such as language, metaphysics, critical spirit, ethics, self, mind, human nature, political thought, education, environment, culture and identity, aesthetics etc.</p> <p>The course is structured as follows.</p> <p>Topics:</p> <ol style="list-style-type: none"> 1. Introduction. What is “modernity”? [1 week] 2. Meiji philosophers. [3-4 weeks] Nishi Amane, Fukuzawa Yukichi, Nakae Chomin, Inoue Tetsujiro etc. 3. The Kyoto School. [3-4 weeks] Nishida Kitaro, Tanabe Hajime, Ueda Shizuteru, Nishitani Keiji etc.. 4. Contemporary philosophy. [4-5 weeks] Tosaka Jun, Imanishi Kinji, Maruyama Masao, Yuasa Yasuo, Kimura Bin, Hiromatsu Wataru, Fujita Masakatsu etc. 5. Women philosophers. [2 weeks] Yosano Akiko, Hiratsuka Raicho. 6. Course round-up and reflection. [1 week] 7. Feedback (Students will be notified of feedback methods separately.) [1 week] 					
Continue to Japanese Philosophy II-E2(2) ↓ ↓ ↓					

Japanese Philosophy II-E2(2)	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Short quizzes and a final paper.	
[Textbook]	
No textbook. There will be class handouts for each meeting.	
[Regarding studies out of class (preparation and review)]	
There will be several reading assignments - students will have to read a short text before class and prepare comments.	
[Others (office hour, etc.)]	

Lecture code: H163001

Course numbering					
Course title <English>	Philosophy of Nature I-E2 Philosophy of Nature I-E2		Affiliated department, Job title,Name	Graduate School of Letters Associate Professor,PASCA, Roman	
Group	Humanities and Social Sciences	Field(Classification)	Philosophy(Foundations)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • First semester
Day/period	Wed.3	Target year	All students	Eligible students	For all majors
[Outline and Purpose of the Course]					
<p>What is the correct name for nature? Physis, natura, jinen, shizen? How do I, as an individual human being, fit into the world of nature? Am I a part of it, or do I control it? Do I have the right to cut a tree? What is my responsibility toward the environment? How do I respond to the current environmental crisis?</p> <p>In this class, we will start from these questions and try to think together about the different understandings of “nature” and about the different ways in which we can engage with it. We will focus on views of nature in Japan, from premodern literary texts to contemporary philosophy.</p>					
[Course Goals]					
<p>In this class, students will learn</p> <ol style="list-style-type: none"> 1) to critically examine notions and concepts related to nature in Japan; 2) to apply ethical theories to some challenging question in our experience of nature; 3) to express their opinions, ideas and arguments in a clear manner. 					
[Course Schedule and Contents]					
<p>For each meeting, we will read and discuss one (or more) short philosophical text(s). The course is structured as follows.</p> <p>Topics:</p> <ol style="list-style-type: none"> 1. Introduction. What is “nature” ? How do we understand / define it? [1 week] 2. Nature in literature [3-4 weeks] Kojiki and Nihonshoki. Waka, zuihitsu, etc. 3. Buddhism and ecology [3-4 weeks] Kukai and Dogen. Pure Land Buddhism, Zen and nature. 4. Confucianism and nature [2-3 weeks] Honzogaku. Kaibara Ekken, Yamato Honz#333. Sato Nobuhiro and the human dominion over nature 5. Nature and human beings [2-3 weeks] Ando Shoeki, Shizen shin` eido. Ishida Baigan and Ninomiya Sontoku. 6. Nature in modern philosophy [2-3 weeks] Edo Tekirei. Minakata Kumagusu. Watsuji Tetsuro, Fudo. 7. Course round-up and reflection. [1 week] 8. Feedback (Students will be notified of feedback methods separately.) [1 week] 					
----- Continue to Philosophy of Nature I-E2(2) ↓ ↓ ↓					

Philosophy of Nature I-E2(2)
[Class requirement]
None
[Method, Point of view, and Attainment levels of Evaluation]
Short quizzes and a final paper.
[Textbook]
No textbook. There will be class handouts for each meeting.
[Regarding studies out of class (preparation and review)]
There will be several reading assignments - students will have to read a short text before class and prepare comments.
[Others (office hour, etc.)]

Lecture code: H164001

Course numbering					
Course title <English>	Philosophy of Nature II-E2 Philosophy of Nature II-E2		Affiliated department, Job title, Name	Graduate School of Letters Associate Professor, PASCA, Roman	
Group	Humanities and Social Sciences	Field(Classification)	Philosophy(Foundations)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • Second semester
Day/period	Wed.3	Target year	All students	Eligible students	For all majors
[Outline and Purpose of the Course]					
<p>What is the correct name for nature? Physis, natura, jinen, shizen? How do I, as an individual human being, fit into the world of nature? Am I a part of it, or do I control it? Do I have the right to cut a tree? What is my responsibility toward the environment? How do I respond to the current environmental crisis?</p> <p>In this class, we will start from these questions and try to think together about the different understandings of “nature” and about the different ways in which we can engage with it. We will focus on views of nature in the Greco-European tradition, but our approach will be a comparative one.</p>					
[Course Goals]					
<p>In this class, students will learn</p> <ol style="list-style-type: none"> 1) to critically examine notions and concepts related to nature in the Greco-European tradition; 2) to gain a comparative perspective on philosophy; 3) to express their opinions, ideas and arguments in a clear manner. 					
[Course Schedule and Contents]					
<p>For each meeting, we will read and discuss one (or more) short philosophical text(s). The course is structured as follows.</p> <p>Topics:</p> <ol style="list-style-type: none"> 1. Introduction. What is “nature” ? How do we understand / define it? [1 week] 2. Thinking about nature. Religion and nature [3-4 weeks] Aristotle, Physics. St. Thomas Aquinas, The Principles of Nature. Descartes, Discourse on Method, etc. 3. Nature and non-humans [2-3 weeks] Darwin, Origin of Species. Kant, Duties to Animals, etc. 4. Nature, society and agriculture [3-4 weeks] Adam Smith, The Wealth of Nations. Quesneau and the physiocrats. Jean-Jacques Rousseau. Nature and ethics, etc. 5. Human beings and nature. [3-4 weeks] Aldo Leopold, The Land Ethic. Environmental ethics. Deep ecology. 6. Course round-up and reflection. [1 week] 7. Feedback (Students will be notified of feedback methods separately.) [1 week] 					
----- Continue to Philosophy of Nature II-E2(2) ↓ ↓ ↓					

Philosophy of Nature II-E2(2)
[Class requirement]
None
[Method, Point of view, and Attainment levels of Evaluation]
Short quizzes and a final paper.
[Textbook]
No textbook. There will be class handouts for each meeting.
[Regarding studies out of class (preparation and review)]
There will be several reading assignments - students will have to read a short text before class and prepare comments.
[Others (office hour, etc.)]

Lecture code: H281001

Course numbering		U-LAS01 10002 LE38			
Course title <English>	Japanese History I-E2 Japanese History I-E2		Affiliated department, Job title,Name	Graduate School of Education Associate Professor,Niels van Steenpaal	
Group	Humanities and Social Sciences	Field(Classification)	History and Civilization(Foundations)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • First semester
Day/period	Tue.2	Target year	All students	Eligible students	For all majors
[Outline and Purpose of the Course]					
This course will offer an introduction to premodern Japanese history (~1600) from a global perspective. That is, we will approach the Japanese archipelago not as an isolated territory that seamlessly transformed into the nation state as we now know it, but as a geographical hub that has been shaped by various “foreign” encounters through the centuries. We will look at how trade, war, diplomacy and ideas fostered international connections that have played crucial roles in deciding the trajectory of Japan’s development.					
[Course Goals]					
Upon the successful completion of this course, students will: (1) have a general understanding of the major periods and events of Japanese premodern history. (2) gain a sensibility for the way in which the history of nation states is intimately bound up with, and cannot be told separately from global events.					
[Course Schedule and Contents]					
Course themes per week: 1. Introduction 2. Prehistory 3. Jomon 4. Yayoi and Kofun 5. Early State Formation I 6. Early State Formation II 7. Imperial Period 8. (Midterm Exam) 9. Mongol Invasion I 10. Mongol Invasion II 11. East Asia War I 12. East Asia War II 13. Christianity I 14. Christianity II					
----- Continue to Japanese History I-E2(2) ↓ ↓ ↓					

Japanese History I-E2(2)	
[Class requirement]	
As a survey introduction class, this course will require no reading preparations, but competence in English is required to fruitfully engage in class and exams. Furthermore, although not a strict requirement, it is recommended that the student will either precede or follow up this class with Japanese History II - E2.	
[Method, Point of view, and Attainment levels of Evaluation]	
Grading will be based on attendance, participation, a midterm and a final exam as follows: 20% Attendance & Participation 30% Midterm Exam 50% Final Exam (Students who are absent more than 4 times will automatically fail this course)	
[Textbook]	
Not used	
[Regarding studies out of class (preparation and review)]	
Reviewing class notes and possibly clarifying unclear items through independent study.	
[Others (office hour, etc.)]	
Students should be aware of the fact that student interest in this course always exceeds its capacity and that enrollment permission will be decided based on a random lottery. Students who have inquiries of any kind are welcome to contact me by email. In doing so, however, please heed the following: 1.write in either Japanese or English, whichever language you are most proficient in. 2.write in a formal format appropriate to the university setting. Emails that do not conform to both items will be sent back without a response.	

Lecture code: H281002

Course numbering		U-LAS01 10002 LE38			
Course title <English>	Japanese History I-E2 Japanese History I-E2		Affiliated department, Job title,Name	Institute for Research in Humanities Associate Professor,KNAUDT, Till	
Group	Humanities and Social Sciences	Field(Classification)	History and Civilization(Foundations)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • First semester
Day/period	Tue.2/Wed.2	Target year	All students	Eligible students	For all majors
[Outline and Purpose of the Course]					
In class the participants will work on the course of modern Japanese history from the last years of the early modern period to the end of World War II in Asia. Special attention will be payed to questions of Meiji nation building and political representation, post-World War I industrialization and its social impact, and politics and culture in Japanese Empire in times of peace and total war.					
[Course Goals]					
Knowledge on key phenomena and research perspectives in prewar modern Japanese history.					
[Course Schedule and Contents]					
1 Introduction					
2 The end of the Tokugawa period (1850s~1868)					
3~5 Nation building and representation in the Meiji period (1868~1912)					
6~8 Industrialization, social movements and imperialism in Taisho; and prewar Showa Japan (1912~1937)					
9 Colonialism					
10-13 Politics and culture in times of total war (1937~1945)					
14 Conclusion					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
Written final report.					
[Textbook]					
Reading materials will be handed out during class.					
[Reference book, etc.]					
(Reference book)					
Reading materials will be handed out during class.					
[Regarding studies out of class (preparation and review)]					
Knowledge of modern Japanese history in the Asian and global context is appreciated.					
[Others (office hour, etc.)]					



Lecture code: H282001

Course numbering		U-LAS01 10004 LE38			
Course title <English>	Japanese History II-E2 Japanese History II-E2		Affiliated department, Job title,Name	Graduate School of Education Associate Professor,Niels van Steenpaal	
Group	Humanities and Social Sciences	Field(Classification)	History and Civilization(Foundations)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019・Second semester
Day/period	Tue.2	Target year	All students	Eligible students	For all majors
[Outline and Purpose of the Course]					
This course will offer an introduction to early modern and modern Japanese history (1600~1911) from a global perspective. That is, we will approach the Japanese archipelago not as an isolated territory that seamlessly transformed into the nation state as we now know it, but as a geographical hub that has been shaped by various "foreign" encounters through the centuries. We will look at how trade, war, diplomacy and ideas fostered international connections that have played crucial roles in deciding the trajectory of Japan's development. As a survey introduction class, this course will require no reading preparations, but competence in English is required to fruitfully engage in class discussion.					
[Course Goals]					
Upon the successful completion of this course, students will:					
(1) have a general understanding of the major periods and events of early modern and modern Japanese history.					
(2) gain a sensibility for the way in which the history of nation states is intimately bound up with, and cannot be told separately from global events.					
[Course Schedule and Contents]					
Course themes per week:					
1. Introduction					
2. Tokugawa Order					
3. Maritime Prohibition					
4. The Dutch					
5. The Zheng Family					
6. Ryukyu & Ezo					
7. Rise of the West					
8. (Midterm Exam)					
9. Opium Wars					
10. Opening Japan					
11. Meiji Restoration					
12. Sino-Japanese War					
13. Russo-Japanese War I					
14. Russo-Japanese War II					
Continue to Japanese History II-E2(2) ↓ ↓ ↓					

Japanese History II-E2(2)	
[Class requirement]	
As a survey introduction class, this course will require no reading preparations, but competence in English is required to fruitfully engage in class and exams. Furthermore, although not a strict requirement, it is recommended that the student will either precede or follow up this course with Japanese History I - E2.	
[Method, Point of view, and Attainment levels of Evaluation]	
Grading will be based on attendance, participation, a midterm and a final exam as follows: 20% Attendance & Participation 30% Midterm Exam 50% Final Exam (Students who are absent more than 4 times will automatically fail this course)	
[Textbook]	
Not used	
[Regarding studies out of class (preparation and review)]	
Reviewing class notes and possibly clarifying unclear items through independent study.	
[Others (office hour, etc.)]	
Students should be aware of the fact that student interest in this course always exceeds its capacity and that enrollment permission will be decided based on a random lottery.	
Students who have inquiries of any kind are welcome to contact me by email. In doing so, however, please heed the following:	
1. write in either Japanese or English, whichever language you are most proficient in.	
2. write in a formal format appropriate to the university setting.	
Emails that do not conform to both items will be sent back without a response.	
	

Lecture code: H282002

Course numbering		U-LAS01 10004 LE38			
Course title <English>	Japanese History II-E2 Japanese History II-E2		Affiliated department, Job title,Name	Institute for Research in Humanities Associate Professor,KNAUDT, Till	
Group	Humanities and Social Sciences	Field(Classification)	History and Civilization(Foundations)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • Second semester
Day/period	Tue.2/Wed.2	Target year	All students	Eligible students	For all majors
[Outline and Purpose of the Course]					
In class the participants will work on Japanese history from the time of US occupation until the “lost decade” of the 1990s. Special attention will be put on economic high growth’s impact on society, the environment, gender, and youth. Emphasizing Japan’s global entanglement, the course will introduce agents of socio-historical change in the late Sh#333wa period and early years of Heisei.					
[Course Goals]					
Knowledge of key phenomena and recent research perspectives of modern Japanese history after 1945.					
[Course Schedule and Contents]					
1 Introduction 2~4 Japanese society under US occupation (1945~1952) 5~7 The era of economic high growth (1952~1973) 8~10 Crisis and society in late industrial Japan (1973~1995) 11~13 Social movements after 1945 14 Conclusion					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
Written final report.					
[Textbook]					
Reading materials will be handed out during class.					
[Reference book, etc.]					
(Reference book) Reading materials will be handed out during class.					
[Regarding studies out of class (preparation and review)]					
Knowledge of modern Japanese history in the Asian and global context is appreciated.					
[Others (office hour, etc.)]					

Lecture code: H275001

Course numbering		U-LAS01 10008 LE38			
Course title <English>	Western History I-E2 Western History I-E2		Affiliated department, Job title,Name	Graduate School of Human and Environmental Studies Program-Specific Senior Lecturer,BHATTE, Pallavi Kamalakar	
Group	Humanities and Social Sciences	Field(Classification)	History and Civilization(Foundations)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • First semester
Day/period	Tue.2	Target year	All students	Eligible students	For all majors
[Outline and Purpose of the Course]					
This is an introductory undergraduate course, providing students a basic narrative of British ascendancy and expansionism in India during the late eighteenth century to the twentieth century. This is a contents based course taught in English.					
[Course Goals]					
The goals of this course is to help students to (a) compare alternative and compelling views and interpretations and assess their significance, (b) become familiar with key debates of the period, (c) assess primary sources in the light of historical research and (d) present arguments clearly and concisely both orally and on paper.					
[Course Schedule and Contents]					
Week 1: Introduction to the course and Overview Week 2/3: The Mughals; Emerging European presence in India Week 4/5: Establishment of Company Rule Week 6/7: The Colonizer and the Indigenous People Week 8/9: Rebellion and Revolt: The Mutiny of 1857-58 Week 10/11: Social Reform Movements Week 12/13: Nationalism and Communism Week 14: Independence and Partition Week 15: Final examination Week 16: Feedback & Summary					
*Note: The schedule may change slightly depending on class requirements.					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
A system of continuous evaluation will be adopted. Although this will be a lecture styled course, students will be required to engage in discussions and/or presentations and submit written work as per instructions.					
Final grade will be based on the following: 30% Regular participation and activity in class. 70% Exam/Final Paper at the end of the course.					
----- Continue to Western History I-E2(2) ↓ ↓ ↓					

Western History I-E2(2)
[Textbook]
Not used Reference materials and notes will be distributed in class as per requirements. Students will be expected to go through the handouts and bring them to class as per instruction.
[Regarding studies out of class (preparation and review)]
No prior knowledge of history is required. Students should be able to participate in discussions with their classmates in English.
[Others (office hour, etc.)]
No office hours specified. Meetings are to be arranged by appointment. Classroom Management: Be respectful to everyone and everything in class.

Lecture code: H275002

Course numbering		U-LAS01 10008 LE38			
Course title <English>	Western History I-E2 Western History I-E2		Affiliated department, Job title,Name	Graduate School of Human and Environmental Studies Program-Specific Senior Lecturer,BHATTE, Pallavi Kamalakar	
Group	Humanities and Social Sciences	Field(Classification)	History and Civilization(Foundations)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • First semester
Day/period	Fri.2	Target year	All students	Eligible students	For all majors
[Outline and Purpose of the Course]					
This is an introductory undergraduate course, providing students a basic narrative of British ascendancy and expansionism in India during the late eighteenth century to the twentieth century. This is a contents based course taught in English.					
[Course Goals]					
The goals of this course is to help students to (a) compare alternative and compelling views and interpretations and assess their significance, (b) become familiar with key debates of the period, (c) assess primary sources in the light of historical research and (d) present arguments clearly and concisely both orally and on paper.					
[Course Schedule and Contents]					
Week 1: Introduction to the course and Overview Week 2/3: The Mughals; Emerging European presence in India Week 4/5: Establishment of Company Rule Week 6/7: The Colonizer and the Indigenous People Week 8/9: Rebellion and Revolt: The Mutiny of 1857-58 Week 10/11: Social Reform Movements Week 12/13: Nationalism and Communism Week 14: Independence and Partition Week 15: Final examination Week 16: Feedback & Summary					
*Note: The schedule may change slightly depending on class requirements.					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
A system of continuous evaluation will be adopted. Although this will be a lecture styled course, students will be required to engage in discussions and/or presentations and submit written work as per instructions.					
Final grade will be based on the following: 30% Regular participation and activity in class. 70% Exam/Final Paper at the end of the course.					
----- Continue to Western History I-E2(2) ↓ ↓ ↓					

Western History I-E2(2)
[Textbook]
Not used Reference materials and notes will be distributed in class as per requirements. Students will be expected to go through the handouts and bring them to class as per instruction.
[Regarding studies out of class (preparation and review)]
No prior knowledge of history is required. Students should be able to participate in discussions with their classmates in English.
[Others (office hour, etc.)]
No office hours specified. Meetings are to be arranged by appointment. Classroom Management: Be respectful to everyone and everything in class.

Lecture code: H274001

Course numbering		U-LAS01 10010 LE38			
Course title <English>	Western History II-E2 Western History II-E2		Affiliated department, Job title,Name	Graduate School of Human and Environmental Studies Program-Specific Senior Lecturer,BHATTE, Pallavi Kamalakar	
Group	Humanities and Social Sciences	Field(Classification)	History and Civilization(Foundations)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • Second semester
Day/period	Tue.2	Target year	All students	Eligible students	For all majors
[Outline and Purpose of the Course]					
This is an introductory undergraduate course, providing students a basic narrative of major turning points that shaped modern Europe from the late 18th-century through the present, including the cause and the course of the two world wars. This is a contents based course taught in English. The purpose of this course is to develop (a) an understanding of some of the principle themes in modern Western History, and (b) an ability to analyze historical evidence and historical interpretation, and (c) an ability to express historical understanding verbally.					
[Course Goals]					
One of the goals of this course is to help students to consider multiple accounts of historical events in order to understand international relations from a variety of perspectives. Besides nurturing their English reading, writing and communication skills, the ultimate goal of this course is to provide a platform for students to discuss history in English.					
[Course Schedule and Contents]					
Week 1: Introduction to the course and Overview Week 2/3: The French Revolution and Napoleon Week 4/5: The Industrial Revolution and Pax Britannica Week 6/7: World War I Week 8/9: Interwar period and the rise of Fascist Italy, Germany and Japan Week 10/11: World War II Week 12/13: The Cold War Week 14: Post Cold War and the Contemporary Era Week 15: Final examination Week 16: Feedback & Summary of the Course					
*Note: The schedule may change slightly depending on class requirements.					
[Class requirement]					
There are no prerequisites. This course is open to all students regardless of major. Enthusiasm and willingness to participate and share ideas in class is necessary.					
[Method, Point of view, and Attainment levels of Evaluation]					
A system of continuous evaluation will be adopted. Although this will be a lecture styled course, students will be required to engage in discussions and/or presentations and submit written work as per instructions.					
----- Continue to Western History II-E2(2) ↓ ↓ ↓					

Western History II-E2(2)
Final grade will be based on the following: 30% Regular participation and activity in class. 70% Exam/Final Paper at the end of the course.
[Textbook]
Not used Reference materials and notes will be distributed in class as per requirements. Students will be expected to go through the handouts and bring them to class as per instruction.
[Reference book, etc.]
(Reference book) Introduced during class To be announced in class.
[Regarding studies out of class (preparation and review)]
No prior knowledge of history is required. Students should be able to participate in discussions with their classmates in English.
[Others (office hour, etc.)]
No office hours specified. Meetings are to be arranged by appointment. Classroom Management: Be respectful to everyone and everything in class.

Lecture code: H274002

Course numbering		U-LAS01 10010 LE38			
Course title <English>	Western History II-E2 Western History II-E2		Affiliated department, Job title,Name	Graduate School of Human and Environmental Studies Program-Specific Senior Lecturer,BHATTE, Pallavi Kamalakar	
Group	Humanities and Social Sciences	Field(Classification)	History and Civilization(Foundations)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • Second semester
Day/period	Fri.2	Target year	All students	Eligible students	For all majors
[Outline and Purpose of the Course]					
This is an introductory undergraduate course, providing students a basic narrative of major turning points that shaped modern Europe from the late 18th-century through the present, including the cause and the course of the two world wars. This is a contents based course taught in English. The purpose of this course is to develop (a) an understanding of some of the principle themes in modern Western History, and (b) an ability to analyze historical evidence and historical interpretation, and (c) an ability to express historical understanding verbally.					
[Course Goals]					
One of the goals of this course is to help students to consider multiple accounts of historical events in order to understand international relations from a variety of perspectives. Besides nurturing their English reading, writing and communication skills, the ultimate goal of this course is to provide a platform for students to discuss history in English.					
[Course Schedule and Contents]					
Week 1: Introduction to the course and Overview Week 2/3: The French Revolution and Napoleon Week 4/5: The Industrial Revolution and Pax Britannica Week 6/7: World War I Week 8/9: Interwar period and the rise of Fascist Italy, Germany and Japan Week 10/11: World War II Week 12/13: The Cold War Week 14: Post Cold War and the Contemporary Era Week 15: Final examination Week 16: Feedback & Summary of the Course					
*Note: The schedule may change slightly depending on class requirements.					
[Class requirement]					
There are no prerequisites. This course is open to all students regardless of major. Enthusiasm and willingness to participate and share ideas in class is necessary.					
[Method, Point of view, and Attainment levels of Evaluation]					
A system of continuous evaluation will be adopted. Although this will be a lecture styled course, students will be required to engage in discussions and/or presentations and submit written work as per instructions.					
----- Continue to Western History II-E2(2) ↓ ↓ ↓					

Western History II-E2(2)
Final grade will be based on the following: 30% Regular participation and activity in class. 70% Exam/Final Paper at the end of the course.
[Textbook]
Not used Reference materials and notes will be distributed in class as per requirements. Students will be expected to go through the handouts and bring them to class as per instruction.
[Reference book, etc.]
(Reference book) Introduced during class To be announced in class.
[Regarding studies out of class (preparation and review)]
No prior knowledge of history is required. Students should be able to participate in discussions with their classmates in English.
[Others (office hour, etc.)]
No office hours specified. Meetings are to be arranged by appointment. Classroom Management: Be respectful to everyone and everything in class.

Lecture code: H277001

Course numbering		U-LAS01 10013 LE38			
Course title <English>	Introduction to World Religions-E2 Introduction to World Religions-E2		Affiliated department, Job title,Name	Center for Southeast Asian Studies Associate Professor,Julius Bautista	
Group	Humanities and Social Sciences	Field(Classification)	History and Civilization(Foundations)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • First semester
Day/period	Tue.2	Target year	Mainly 1st & 2nd year students	Eligible students	For liberal arts students
[Outline and Purpose of the Course]					
This course offers an introduction to major religions of the world, including Hinduism, Buddhism, Eastern Religions, Judaism, Christianity, and Islam. What is interesting about the origin and historical development of each religious tradition? What are their sacred texts, philosophical ideas and common values? What kinds of rituals are performed by the members of each faith? The purpose of this course is to answer these questions in a way that compares various World Religions, especially in light of the global forces that have shaped them.					
[Course Goals]					
This course has two main learning outcomes: The first (1) is the ability to offer a comparative analysis of the origin and historical development of each of the world's major religions, drawing from basic understanding sacred texts, philosophical ideas and patterns of ritual worship. Secondly, (2) students will have the ability to comment on how religion impacts upon a wide range of social, political and cultural issues that affects modern society around the globe.					
[Course Schedule and Contents]					
Week 1 Introduction and Course Queries					
Week 2 Monotheism: The Founding Narratives					
Week 3 The Judeo-Christian Tradition					
Week 4 Jesus Christ and Christianity					
Week 5 The Prophet of Islam					
Week 6 Islam and the Submission to God					
Week 7 The Vedic Tradition: The Foundational Narratives					
Week 8 Hinduism in Traditional and Contemporary Society					
Week 9 Buddhism: The Path Towards Enlightenment					
Week 10 The Buddha and His Dharma					
Week 11 East Asian Religious Traditions 1					
Week 12 East Asian Religious Traditions 2					
Week 13 Conclusion and Recap					
Week 14 Reading Week					
Week 15 Examination					
Week 16 Feedback Week					
Continue to Introduction to World Religions-E2(2) ↓ ↓ ↓					

Introduction to World Religions-E2(2)	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Students will be evaluated according to three main criteria. (1) their ability to participate class discussion (20% of the overall grade), (2) a written essay (40%), and (3) group project/presentation (40%). ***The group project/presentation may be replaced by a written exam, depending on class numbers. This will be announced when the final number of enrollment is confirmed.**	
[Textbook]	
Warren Matthews 『World Religions (7th Edition)』 ISBN:1111834725	
[Reference book, etc.]	
(Reference book)	
Introduced during class	
[Regarding studies out of class (preparation and review)]	
No prior knowledge of religion is required. Students should be able to participate in discussions with their classmates in English. This may be face-to-face small group discussion or online. Students may also be asked to make short presentations in English based on the class topics.	
[Others (office hour, etc.)]	
Consultation is by appointment via email to bautista@cseas.kyoto-u.ac.jp	
  	

Lecture code: H280001

Course numbering		U-LAS01 10014 LE38			
Course title <English>	Introduction to Asian Societies-E2 Introduction to Asian Societies-E2		Affiliated department, Job title,Name	Center for Southeast Asian Studies Associate Professor,Julius Bautista	
Group	Humanities and Social Sciences	Field(Classification)	History and Civilization(Foundations)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • Second semester
Day/period	Tue.2	Target year	Mainly 1st & 2nd year students	Eligible students	For liberal arts students
[Outline and Purpose of the Course]					
This course will introduce students to Asian history and civilization. While each of these regions has its own distinctive identities, we shall consider how overlapping historical, political and cultural experiences have engendered a shared sense of heritage and common destiny. We shall examine the struggles of Asians to protect or regain their sovereignty, and establish their identities in a rapidly arising and often volatile world order. We will look at how individuals in Asia respond to significant issues and challenges in four distinct historical themes: “Pre-modern ideologies in Asia”, “Euro-American Imperialism”, “War and Conflict in Asia” and the “Era of the modern state and regionalism.”					
[Course Goals]					
At the end of this course, students will be able to achieve the following learning outcomes: (1) The ability to provide an historical portrait of the interrelationships between Asian societies and the wider global forces that have shaped the region. (2) The ability to engage in critical discussion and debate on some of the most pressing regional issues, including those in the areas of politics, the environment, history, culture and security.					
[Course Schedule and Contents]					
Lecture 1 will be an introduction to the course and its assessment tasks. Lectures 2, 3 and 4 will be devoted to a discussion of pre-modern forms of Asian civilizational ideologies and how they remain relevant in contemporary society. Lectures 5, 6 and 7 will discuss the impact of Euro-American incursion in the region from the sixteenth century, particularly in the pursuit of natural resources and trading routes. We shall discuss Asian responses to changing power relations, as well as how resistance to foreign incursion cultivated ethnic and religious identity in this period. Lectures 8, 9 and 10 will examine the major modern conflicts in the region, particularly the two world wars, and how this impacted upon the pursuit of sovereignty and self determination among Asians. Lectures 11, 12 and 13 will examine the era of the nation state, including the formation of cultural nationalism in the region in the post-war period. We shall examine the formation of various forms of governance and how this relates to national identity. We shall then discuss the moves towards regional integration among Asian nations, and how Asians are looking to the future in light of globalization. Lecture 14 will be a conclusion and summary of the major themes of the course. Lectures 15 and 16 will be devoted to examinations, and feedback for the course					
----- Continue to Introduction to Asian Societies-E2(2) ↓ ↓ ↓					

Introduction to Asian Societies-E2(2)	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Students will be evaluated according to three main criteria. (1) their ability to participate class discussion (20% of the overall grade), (2) a written essay (40%), and (3) group project/presentation (40%). ***The group project/presentation may be replaced by a written exam, depending on class numbers. This will be announced when the final number of enrollment is confirmed.**	
[Textbook]	
Not used	
[Reference book, etc.]	
(Reference book) Introduced during class	
[Regarding studies out of class (preparation and review)]	
No prior knowledge of Asian studies is required. Students should be able to participate in discussions with their classmates in English. This may be face-to-face small group discussion or online. Students may also be asked to make short presentations in English based on the class topics.	
[Others (office hour, etc.)]	
Consultation is by appointment via email to bautista@cseas.kyoto-u.ac.jp	

Lecture code: H279001

Course numbering		U-LAS01 10015 LE38			
Course title <English>	Religion in Contemporary Society-E2 Religion in Contemporary Society-E2		Affiliated department, Job title,Name	Center for Southeast Asian Studies Associate Professor,Julius Bautista	
Group	Humanities and Social Sciences	Field(Classification)	History and Civilization(Foundations)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • Second semester
Day/period	Tue.4	Target year	Mainly 1st & 2nd year students	Eligible students	For liberal arts students
[Outline and Purpose of the Course]					
This course is an exploration into how religion impacts upon some of the major social, cultural, political and economic issues of today's world. We shall be focusing on specific case studies relating to religious fundamentalism, religious pluralism, new religious movements and spirituality from around the world. Specific attention will also be paid to considering how the rise of information technology and social media impact religious belief and practice. We consider case studies in inquiring into how religion influences the pursuit of knowledge and scientific inquiry, including questions of ethics and morality in a rapidly globalizing world.					
[Course Goals]					
This course has two main learning outcomes for students: (1) the ability to assess how religion has figured as a critical factor in some of the major political and social issues facing the world today and (2) the ability to express an informed opinion on the themes of science and modernity, religious violence, extremism, radicalization and revivalism among others.					
[Course Schedule and Contents]					
Week 1 Introduction and Course Queries Week 2 Religion and the Contemporary Demographic Order 1 Week 3 Religion and the Contemporary Demographic Order 2 Week 4 Discussion Session (Lectures 2-3) Week 5 Globalization and Religious Belief 1 Week 6 Globalization and Religious Belief 2 Week 7 Discussion Session (Lectures 5-6) Week 8 Religion and Technology 1 Week 9 Religion and Technology 2 Week 10 Discussion Session (Lectures 8-9) Week 11 Religion and Politics 1 Week 12 Religion and Politics 2 Week 13 Discussion Session (Lectures 11-12) Week 14 Conclusion and Recap Week 15 Examination Week 16 Feedback Week					
----- Continue to Religion in Contemporary Society-E2(2) ↓ ↓ ↓					

Religion in Contemporary Society-E2(2)	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Students will be evaluated according to three main criteria. (1) their ability to participate class discussion (20% of the overall grade), (2) a written essay (40%), and (3) group project/presentation (40%). ***The group project/presentation may be replaced by a written exam, depending on class numbers. This will be announced when the final number of enrollment is confirmed.**	
[Textbook]	
Instructed during class	
[Reference book, etc.]	
(Reference book) Introduced during class	
[Regarding studies out of class (preparation and review)]	
No prior knowledge of religion is required. Students should be able to participate in discussions with their classmates in English. This may be face-to-face small group discussion or online. Students may also be asked to make short presentations in English based on the class topics.	
[Others (office hour, etc.)]	
Consultation is by appointment via email to bautista@cseas.kyoto-u.ac.jp	

Lecture code: H283001

Course numbering		U-LAS01 20013 LE38			
Course title <English>	Japanese Intellectual History I-E2 Japanese Intellectual History I-E2		Affiliated department, Job title,Name	Graduate School of Education Associate Professor,Niels van Steenpaal	
Group	Humanities and Social Sciences	Field(Classification)	History and Civilization(Issues)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • First semester
Day/period	Wed.2	Target year	All students	Eligible students	For all majors
[Outline and Purpose of the Course]					
This course will introduce the student to the “intellectual history” of the Tokugawa and Meiji periods (1600-1911), both as a body of knowledge, and as a particular historical method. That is, besides deepening our understanding of the philosophies, ideologies, and mentalities that helped shape this period, we will also develop the skills necessary to meaningfully examine these ideas as academic problems. Through class discussion based on research literature and in-class presentations, we will reconstruct the way in which Tokugawa and Meiji contemporaries thought (or did not think) about a wide range of issues such as prostitution, discrimination, gender, education and the nation.					
[Course Goals]					
Upon the successful completion of this course, students will: (1) be familiar with the presuppositions and narratives of historical trends such as Marxism and modernization theory. (2) have a general understanding of early modern Japanese history as well as some of the ideas and ideologies that defined this particular period. (3) be able to efficiently and effectively distil the essence of academic writing, and structure and present one's own ideas in a lucid manner. (4) be able to pose meaningful historical questions, and conduct independent research according to the methodological requirements of intellectual history.					
[Course Schedule and Contents]					
Course activities per week: 1. Introduction 2. Reading Assignments 3. Reading 1 (Orientalism) 4. Reading 2 (Nation-State) 5. Topic Discussion 6. Reading 3 (Kabuki) 7. Reading 4 (Publishing) 8. Proposal Discussion 9. Proposal Discussion 10. Reading 5 (Prostitution) 11. Reading 6 (Race) 12. Presentations 13. Presentations 14. Presentations					
Continue to Japanese Intellectual History I-E2(2) ↓ ↓ ↓					

Japanese Intellectual History I-E2(2)
[Class requirement]
Competence in reading academic literature and in discussing its content in English is a prerequisite for this course. Furthermore, although not a strict requirement, it is recommended that the student will either precede or follow up this course with Japanese Intellectual History II - E2.
[Method, Point of view, and Attainment levels of Evaluation]
Grading will be based on attendance, participation, class reports, and a term research paper as follows: 30% Attendance and Participation 30% Class Reports 40% Research Paper (Students who are absent more than 4 times will automatically fail this course)
[Textbook]
Not used
[Regarding studies out of class (preparation and review)]
(1) read the assigned readings (20-30 pages) (2) prepare a "reading sheet" for each reading (3) prepare a "report sheet" one or two times during the semester (4) write a term research paper
[Others (office hour, etc.)]
Students should be aware of the fact that student interest in this course sometimes exceeds its capacity in which case enrollment permission will be decided based on a random lottery. Students who have inquiries of any kind are welcome to contact me by email. In doing so, however, please heed the following: 1. write in either Japanese or English, whichever language you are most proficient in. 2. write in a formal format appropriate to the university setting. Emails that do not conform to both items will be sent back without a response.

Lecture code: H284001

Course numbering		U-LAS01 20014 LE38			
Course title <English>	Japanese Intellectual History II-E2 Japanese Intellectual History II-E2		Affiliated department, Job title,Name	Graduate School of Education Associate Professor,Niels van Steenpaal	
Group	Humanities and Social Sciences	Field(Classification)	History and Civilization(Issues)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • Second semester
Day/period	Wed.2	Target year	All students	Eligible students	For all majors
[Outline and Purpose of the Course]					
This course will introduce the student to the “intellectual history” of Japan up to the early modern period (~1600), both as a body of knowledge, and as a particular historical method. That is, besides deepening our understanding of the philosophies, ideologies, and mentalities that helped shape this period, we will also develop the skills necessary to meaningfully examine these ideas as academic problems. Through class discussion based on research literature and in-class presentations, we will reconstruct the way in which premodern Japanese thought (or did not think) about a wide range of issues such as morality, death, gender, and the state.					
[Course Goals]					
Upon the successful completion of this course, students will: (1) be familiar with the presuppositions and narratives of historical trends such as Marxism and modernization theory. (2) have a general understanding of premodern Japanese history as well as some of the ideas and ideologies that defined this particular period. (3) be able to efficiently and effectively distil the essence of academic writing, and structure and present one's own ideas in a lucid manner. (4) be able to pose meaningful historical questions, and conduct independent research according to the methodological requirements of intellectual history.					
[Course Schedule and Contents]					
Course activities per week: 1. Introduction 2. Reading Assignments 3. Reading 1 (Ritsuryo Confucianism) 4. Reading 2 (Confucianism as a Religion) 5. Topic Discussion 6. Reading 3 (Honji Suijaku) 7. Reading 4 (Yoshida Shinto) 8. Proposal Discussion 9. Proposal Discussion 10. Reading 5 (Hungry Ghosts) 11. Reading 6 (Coping with Death) 12. Presentations 13. Presentations 14. Presentations					
----- Continue to Japanese Intellectual History II-E2(2) ↓ ↓ ↓					

Japanese Intellectual History II-E2(2)	
[Class requirement]	
Competence in reading academic literature and in discussing its content in English is a prerequisite for this course. Furthermore, although not a strict requirement, it is recommended that the student will either precede or follow up this course with Japanese Intellectual History I - E2.	
[Method, Point of view, and Attainment levels of Evaluation]	
Grading will be based on attendance, participation, class reports, and the term paper as follows: 30% Attendance and Participation 30% Class Reports 40% Research Paper (Students who are absent more than 4 times will automatically fail this course)	
[Textbook]	
Not used	
[Regarding studies out of class (preparation and review)]	
(1) read the assigned readings (20-30 pages) (2) prepare a "reading sheet" for each reading (3) prepare a "report sheet" one or two times during the semester (4) write a term research paper	
[Others (office hour, etc.)]	
Students should be aware of the fact that student interest in this course sometimes exceeds its capacity in which case enrollment permission will be decided based on a random lottery. Students who have inquiries of any kind are welcome to contact me by email. In doing so, however, please heed the following: 1. write in either Japanese or English, whichever language you are most proficient in. 2. write in a formal format appropriate to the university setting. Emails that do not conform to both items will be sent back without a response.	

Lecture code: H287001

Course numbering					
Course title <English> Japanese Popular Culture-E2 Japanese Popular Culture-E2		Affiliated department, Job title,Name	Graduate School of Law Associate Professor,MURPHY, Mahon		
Group		Field(Classification)	Humanities and Social Sciences History and Civilization(Issues)		
Language		Old group	English	Group A	Number of credits 2
Number of weekly time blocks	1	Class style		Lecture	Course offered year/period 2019・First semester
Day/period		Target year	Tue.2	Mainly 1st & 2nd year students	Eligible students For all majors
[Outline and Purpose of the Course]					
The phenomenon of 'Cool Japan' is one of the distinctive features of modern global pop culture. This lecture series will discuss the development of this phenomenon from its 19th century roots to the present day. The Meiji Period which ushered the 'opening' of Japan attracted a new global audience to Japanese culture. Japanese culture itself was of course affected by these new interactions. Shifting away from high politics to focus on music, sport, film, magazines and comics this lecture series will discuss Japanese popular culture as shaped by domestic and international counter-culture trends. This course will be suitable for both students who have a deep understanding of Japanese culture and those who are new comers.					
[Course Goals]					
Students will gain a knowledge of Japanese popular culture and will be able to demonstrate this through essays.					
[Course Schedule and Contents]					
1. Introduction Lecture 2. Protest movements in Japan from Eejynaika to the Student Demonstrations of the 1970s 3. Europe and America's fascination with Japanese art 4. You gotta have wa! Sport and Japan 5. In the Beginning Woman was the Sun: Consumerism and the Modern Girl 6. The Propaganda War: Creating an Empire 7. Professional Wrestling and post war Japan 8. From Kurosawa to Star Wars, the influence of Japanese film 9. The American Invasion: Rock n' Roll hits Japan 10. Battle of the Planets: Animation and Manga Culture 11. Nintendo takes over America: Video Games and the 1980s 12. They've never had it so good: Bubble-Culture 13. Dreaming of Sushi: Japan and the mania for food 14. Review					
[Class requirement]					
None					
Continue to Japanese Popular Culture-E2(2) ↓ ↓ ↓					

Japanese Popular Culture-E2(2)

[Method, Point of view, and Attainment levels of Evaluation]

Written Examination during the Official Examination Term
Evaluation on Class performance through attendance and participation

[Textbook]

E. Taylor Atkins 『A History of Popular Culture in Japan』 (Bloomsbury)

[Regarding studies out of class (preparation and review)]

Students will be given a short article or primary source document to read before class.

[Others (office hour, etc.)]



Lecture code: H287002

Course numbering					
Course title <English>	Japanese Popular Culture-E2 Japanese Popular Culture-E2		Affiliated department, Job title, Name	Graduate School of Law Associate Professor, MURPHY, Mahon	
Group	Humanities and Social Sciences	Field(Classification)	History and Civilization(Issues)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • Second semester
Day/period	Wed.4	Target year	Mainly 1st & 2nd year students	Eligible students	For all majors
[Outline and Purpose of the Course]					
The phenomenon of 'Cool Japan' is one of the distinctive features of modern global pop culture. This lecture series will discuss the development of this phenomenon from its 19th century roots to the present day. The Meiji Period which ushered the 'opening' of Japan attracted a new global audience to Japanese culture. Japanese culture itself was of course affected by these new interactions. Shifting away from high politics to focus on music, sport, film, magazines and comics this lecture series will discuss Japanese popular culture as shaped by domestic and international counter-culture trends. This course will be suitable for both students who have a deep understanding of Japanese culture and those who are new comers.					
[Course Goals]					
Students will gain a knowledge of modern Japanese culture and display this through written work.					
[Course Schedule and Contents]					
1. Introduction Lecture 2. Protest movements in Japan from Eejynaika to the Student Demonstrations of the 1970s 3. Europe and America's fascination with Japanese art 4. You gotta have wa! Sport and Japan 5. In the Beginning Woman was the Sun: Consumerism and the Modern Girl 6. The Propaganda War: Creating an Empire 7. Professional Wrestling and post war Japan 8. From Kurosawa to Star Wars, the influence of Japanese film 9. The American Invasion: Rock'n' Roll hits Japan 10. Battle of the Planets: Animation and Manga Culture 11. Nintendo takes over America: Video Games and the 1980s 12. They've never had it so good: Bubble-Culture 13. Dreaming of Sushi: Japan and the mania for food 14. Review					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
Written Examination during the Official Examination Term Evaluation on Class performance through attendance and participation					
----- Continue to Japanese Popular Culture-E2(2) ↓ ↓ ↓					

Japanese Popular Culture-E2(2)

[Textbook]

E. Taylor Atkins 『A History of Popular Culture in Japan』 (Bloomsbury)

[Regarding studies out of class (preparation and review)]

Students will be given a short article or primary source to prepare for each lesson.

[Others (office hour, etc.)]



Lecture code: H381001

Course numbering		U-LAS02 10018 LE37			
Course title <English>	Introduction to Linguistic Science-E2 Introduction to Linguistic Science-E2		Affiliated department, Job title,Name	Graduate School of Letters Associate Professor,CATT, Adam Alvah	
Group	Humanities and Social Sciences	Field(Classification)	Arts, Literature and Linguistics(Foundations)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • First semester
Day/period	Wed.1	Target year	All students	Eligible students	For liberal arts students
[Outline and Purpose of the Course]					
This course provides a general introduction to the principles of linguistic science. It will introduce each of the core areas of study in the field of linguistics: phonetics, phonology, morphology, syntax, and language change.					
[Course Goals]					
After taking this course, students will have a basic understanding of how to critically consider and analyze actual linguistic data from a variety of languages.					
[Course Schedule and Contents]					
The course is divided into the following five sections, each with a different theme. Exercises and readings will be regularly assigned to help you explore various descriptive and theoretical issues.					
1. Introduction, Phonetics (about 3 weeks) What is linguistics?; the International Phonetic Alphabet; the vowels and consonants of English and Japanese					
2. Phonology (about 3 weeks) The phoneme; allophones; formulating rules; minimal pairs; free variation					
3. Morphology (about 3 weeks) The morpheme; allomorphs; word formation; derivation and inflection; compounding					
4. Syntax (about 3 weeks) Grammaticality; constituency; phrase structure; X-bar theory; movement					
5. Language Change: Historical Linguistics (about 2 weeks) Genetically related languages; proto-languages; sound change; the comparative method; cognates; borrowing					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
Grades are based on attendance (10%), class participation (20%), and assignments/exams (70%). Important: If you miss four or more classes, you will not be given credit for the course.					
----- Continue to Introduction to Linguistic Science-E2(2) ↓ ↓ ↓					

Introduction to Linguistic Science-E2(2)	
[Textbook]	
Relevant materials will be provided in class.	
[Reference book, etc.]	
(Reference book)	
Fromkin, Victoria (editor) 『Linguistics: An Introduction to Linguistic Theory』 (Blackwell, 2000) ISBN: 978-0-631-19711-9	
Mihalicek, Vedrana and Wilson, Christin (editors) 『Language Files: Materials for an Introduction to Language and Linguistics, eleventh edition』 (Ohio State University Press, 2011) ISBN:978-0814251799	
[Regarding studies out of class (preparation and review)]	
In general, exercises and readings will be assigned on a weekly basis, and you will be expected to prepare sufficiently before each class.	
[Others (office hour, etc.)]	
Office hours to be specified (check KULASIS). For questions about the course or to set up a meeting, email me at catt.adam.7c@kyoto-u.ac.jp. Please include “Linguistic Science” in the mail header and your full name and student number in the email. Important: Make sure that you search for answers to questions yourself before contacting me by email.	
	

Lecture code: H382001

Course numbering		U-LAS02 10019 LE37					
Course title <English>	Introduction to Japanese Linguistics I-E2		Affiliated department, Job title, Name	Graduate School of Letters Associate Professor, CATT, Adam Alvah			
	Introduction to Japanese Linguistics I-E2						
Group	Humanities and Social Sciences		Field(Classification)	Arts, Literature and Linguistics(Foundations)			
Language	English		Old group	Group A	Number of credits	2	
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period	2019 • Second semester	
Day/period	Wed.1		Target year	All students		Eligible students	For liberal arts students
[Outline and Purpose of the Course]							
This course is an introduction to scientific methods of understanding and analyzing the Japanese language using the tools of linguistics. We will focus on the areas of phonetics, phonology, morphology, syntax, semantics, and language variation.							
[Course Goals]							
After taking this course, students will have a basic understanding of how to critically consider and analyze actual linguistic data from Japanese.							
[Course Schedule and Contents]							
The course schedule is divided into the following seven sections, each with a different theme. Exercises and readings will be regularly assigned to help you explore various descriptive and theoretical issues.							
1. Introduction, Phonetics (about 2 weeks) The phonetic inventory of Japanese; accent							
2. Phonology (about 3 weeks) Phonological rules; sequential voicing (rendaku); mora vs. syllable; accentuation							
3. Morphology (about 2 weeks) Parts of speech categories; morpheme types; word formation; transitive and intransitive verb pairs; nominalization; compounding							
4. Syntax (about 3 weeks) Syntactic structures; word order and scrambling; reflexives; passives; causatives							
5. Semantics (about 1 weeks) Word meaning and sentence meaning; tense and aspect; verb semantics							
6. Language Variation (about 1 week) Dialectal variation							
7. Language Change (about 2 weeks) The diachronic perspective; preserving endangered languages							
Continue to Introduction to Japanese Linguistics I-E2(2) ↓ ↓ ↓							

Introduction to Japanese Linguistics I-E2(2)	
[Class requirement]	
This course does not require any prerequisite knowledge, although a basic familiarity with Japanese is preferable.	
[Method, Point of view, and Attainment levels of Evaluation]	
Grades are based on attendance (10%), class participation (20%), and assignments/exams (70%). Important: If you miss four or more classes, you will not be given credit for the course.	
[Textbook]	
Relevant materials will be provided in class.	
[Reference book, etc.]	
(Reference book)	
Tsujimura, Natsuko 『An Introduction to Japanese Linguistics, third edition』 (Wiley Blackwell, 2014) ISBN:978-1-4443-3773-0	
Miyagawa, Shigeru and Saito, Mamoru (editors) 『The Oxford Handbook of Japanese Linguistics』 (Oxford University Press, 2008) ISBN:978-0-19-983007-7	
Shibatani, Masayoshi 『The Languages of Japan』 (Cambridge University Press, 1990) ISBN:978-0-521-36918-3	
[Regarding studies out of class (preparation and review)]	
Exercises will be assigned on a weekly basis, and you will be expected to prepare sufficiently before each class.	
[Others (office hour, etc.)]	
Office hours to be specified (check KULASIS). For questions about the course or to set up a meeting, email me at catt.adam.7c@kyoto-u.ac.jp. Please include “Japanese Linguistics” in the mail header and your full name and student number in the email. Important: Make sure that you search for answers to questions yourself before contacting me by email.	
	

Lecture code: H383001

Course numbering		U-LAS02 10020 LE37			
Course title <English>		Intercultural Communication I-E2 Intercultural Communication I-E2		Affiliated department, Job title,Name Center for Southeast Asian Studies Associate Professor,TANGSEEFA, Decha	
Group		Humanities and Social Sciences	Field(Classification)	Arts, Literature and Linguistics(Foundations)	
Language		English	Old group	Group A	Number of credits
					2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period
					2019 • First semester
Day/period	Wed.4	Target year	Mainly 1st & 2nd year students		Eligible students
					For all majors
[Outline and Purpose of the Course]					
<p>In today's global community, how should a person conceptually prepare herself to be an effective intercultural communicator? Inconceivable even a decade ago, this era has witnessed tremendous transnational cultural flows - of people, practices and products - as well as local cultural complexities. Each not only encounters her own cultural intricacy, but also needs to effectively operate in culturally-complex contexts - no matter in the cyber or physical spaces. These contexts range from the home and neighborhood; to places of work, worship and recreation; and to regions and the world.</p> <p>This introductory course's foci are: first, foundations of intercultural communication; second, intercultural communication processes; and, third, intercultural communication applications. The course explores both theories and events as well as employs sounds (melodic or not) and images (moving or otherwise) - as pedagogical tools - to deepen students' understanding on effective intercultural communication.</p>					
[Course Goals]					
This course aims to equip students with a set of abilities to: (1) conceptually think through foundations and processes of intercultural communication; (2) apply that conceptualization to inter-culturally communicate in their everyday lives.					
[Course Schedule and Contents]					
<p>Week 1 Introduction and Course Queries Week 2 Why Study Intercultural Communication? Week 3 The History of the Study of Intercultural Communication Week 4 Culture, Communication, Context, and Power Week 5 History and Intercultural Communication Week 6 Identity and Intercultural Communication Week 7 Language and Intercultural Communication Week 8 Nonverbal Codes and Cultural Space Week 9 Understanding Intercultural Transitions Week 10 Popular Culture and Intercultural Communication Week 11 Culture, Communication, and Intercultural Relationships Week 12 Culture, Communication, and Conflict Week 13 Striving for Engaged and Effective Intercultural Week 14 Course Summary Week 15 Examination Week 16 Feedback Session</p>					
----- Continue to Intercultural Communication I-E2(2) ↓ ↓ ↓					

Intercultural Communication I-E2(2)	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Attendance and class participation (30%), team research paper (40%), final exam (30%).	
[Textbook]	
Judith N. Martin & Thomas K. Nakayama 『Intercultural Communication in Contexts Seventh edition』 (McGraw-Hill Education) ISBN:978-1260152654 (2017)	
[Reference book, etc.]	
(Reference book)	
Kathryn Sorrells & Sachi Sekimoto (Eds.) 『Globalizing Intercultural Communication: A Reader』 (Sage Publications, Inc) ISBN:978-1452299334 (2016)	
[Regarding studies out of class (preparation and review)]	
On the first day of class, each weekly required reading(s) will be assigned. Throughout the semester, students will come to class having read the reading(s) and ready to engage with their peers.	
[Others (office hour, etc.)]	
Consultations can be arranged as needed.	

Lecture code: H384001

Course numbering		U-LAS02 10021 LE37					
Course title <English>		Intercultural Communication II-E2 Intercultural Communication II-E2		Affiliated department, Job title,Name	Center for Southeast Asian Studies Associate Professor,TANGSEefa, Decha		
Group		Humanities and Social Sciences		Field(Classification)	Arts, Literature and Linguistics(Foundations)		
Language	English		Old group	Group A	Number of credits	2	
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period	2019 • Second semester	
Day/period	Wed.4		Target year	All students		Eligible students	For all majors
[Outline and Purpose of the Course]							
<p>In today's global community, how should a person prepares herself to be an ethical intercultural communicator? With time and space become even more compressed, the present global era has increasingly become more fragile; and people have increasingly become less tolerant toward those who are different from them. This course studies intercultural communication by prioritizing one human activity - listening - over others.</p> <p>The course aims to orientate students to not only understand the significance of listening, but also to practice listening to varieties of cultures through multitude of sounds in everyday public spaces. They are the spaces where people of different cultures roam. We are different either because of our gender, class, age, (dis)ability, ethnicity, religion, and/or nation. These sounds signal a way that people of different cultures interculturally communicate among one another, consciously or not. Academics working on sound culture calls this phenomenon sonorities of everyday life. Such quotidian acoustic life offers alternative interdisciplinary modes of thinking to contemporary questions of global inhabitation, relation and disruption.</p>							
[Course Goals]							
This course aims to equip students with a set of abilities to: (1) conceptually think through the importance of listening as a way of heightening an ethical intercultural communication; (2) apply that conceptualization to inter-culturally communicate in their everyday lives.							
[Course Schedule and Contents]							
Week 1: Introduction and Course Queries							
Acoustic Territories: Sound Culture and Everyday Life (AT)							
Week 2:							
- "Your Sound Is My Sound Is Your Sound." AT: xii-xxvi.							
- "Underground: Busking, Acousmatics, and the Echo." AT: 1-41.							
Week 3:							
- "Home: Ethical Volumes of Silence and Noise." AT: 43-84.							
Week 4:							
- "Sidewalk: Steps, Gait, and Rhythmic Journey-Forms." AT: 85-125.							
Week 5:							
- "Street: Auditory Latching, Cars, and the Dynamics of Vibration." AT: 127-161.							
Week 6:							
- "Shopping Mall: Muzak, Mishearing, and the Productive Volatility of Feedback" AT: 163-200.							
Week 7:							
- "Sky: Radio, Spatial Urbanism, and Cultures of Transmission." AT: 201-242.							
Continue to Intercultural Communication II-E2(2) ↓ ↓ ↓							

Intercultural Communication II-E2(2)

The Auditory Culture Reader (ACR)
Week 8:
- Michael Bull and Res Back. "Introduction: Into Sound...Once More with Feeling." ACR: 1-20.
Week 9:
- Leigh Eric Schmidt. "Hearing Loss." ACR: 23-36.
Week 10:
- Veit Erlmann. "Descartes's Resonant Subject." ACR: 37-52.
Week 11:
- Hillel Schwartz. "Cross Polytopes and Octaphons More Agreeable: Toward A Taxonomy of Sounds All Around But Not Quite There." ACR: 53-62.
- Michael Bull. "Sounding out the City: An Auditory Epistemology of Urban Experience." ACR: 73-86.
Week 12:
- Paul Moore. "Sectarian Sound and Cultural Identity in Northern Ireland." ACR: 251-260.
- Julia T.S. Binter. "Unruly Voices in the Museum: Multisensory Engagement with Disquieting Histories." ACR: 277-291
Sound, Forced Migration, Borderland
Week 13:
- Decha Tangseefa. 2016. "' I Want To Stay Forever In You.' " In Myanmar' s Mountain and Maritime Borderscapes: Local Practices, Boundary-making and Figured Worlds. Su-Ann Oh (Ed.). Singapore: ISEAS. Pp. 261-282.
Week 14:
- Course Summary
Week 15: Examination
Week 16: Feedback Session
[Class requirement]
Students must pass Intercultural Communication I before they can enroll in Intercultural Communication II.
[Method, Point of view, and Attainment levels of Evaluation]
Attendance and class participation (30%), team research paper (40%), final exam (30%).
[Textbook]
Brandon Labelle 『Acoustic Territories: Sound Culture and Everyday Life』 (New York: Continuum) ISBN:978-1441161369 (2010)
Michael Bull et al. (Eds.) 『The Auditory Culture Reader Second edition』 (London: Bloomsbury Academic) ISBN:978-1472569028 (2016)
[Reference book, etc.]
(Reference book)
Paul Carter 『Meeting Place: The Human Encounter and the Challenge of Coexistence』 (Minneapolis: University of Minnesota Press) ISBN:978-0816685394 (2013)

Continue to Intercultural Communication II-E2(3) ↓ ↓ ↓

Intercultural Communication II-E2(3)

[Regarding studies out of class (preparation and review)]

On the first day of class, each weekly required reading(s) will be assigned. Throughout the semester, students will come to class having read the reading(s) and ready to engage with their peers.

[Others (office hour, etc.)]

Consultations can be arranged as needed.

Lecture code: H727001

Course numbering		U-LAS04 10002 LE47			
Course title <English>	Pedagogy I-E2 Pedagogy I-E2		Affiliated department, Job title,Name	Graduate School of Education Associate Professor,Jeremy Rappleye	
Group	Humanities and Social Sciences	Field(Classification)	Pedagogy, Psychology and Sociology(Foundations)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • First semester
Day/period	Wed.1	Target year	Mainly 1st & 2nd year students	Eligible students	For all majors
[Outline and Purpose of the Course]					
This course introduces students to deeper thinking about education, teaching, and learning. It challenges students to contemplate seemingly easy questions: What makes a good school? What is the purpose of education? What is the role of a teacher? Who are the students? What is the future of education? Even though we have all attended school for most of our lives, rarely have we stopped to think seriously about how and what we are taught. This class gives students this chance. As such, it is suitable for all students, regardless of major, year, or future career path.					
[Course Goals]					
The goals of this course are three. First, students will acquire a systematic introduction to the major issues in education: organization of schools, goals, teaching, learning, curriculum, etc. Second, will improve their analytical abilities through a range of critical examinations of course materials (videos, academic articles, media sources, etc.). Third, students will begin to develop advanced skills in discussion and debate: each of the five unit of the course will require active, focused discussion.					
[Course Schedule and Contents]					
Introduction (1 class)					
Part I: What do good schools look like? (4-5 classes) - This section will examine various examples of innovative schools drawn from different cultural contexts, including Summerhill, monasteries, and preschools in Japan and America.					
Part II: What is the role of the goal of education? (3-4 classes)- This section will introduce students to 3 broad aims for schooling found throughout the world: economic growth, social equality, and individual development.					
Part III: What makes a good teacher? (3-4 classes) - We next turn to look at the different styles of teacher that match the different goals of education discussed in Part II.					
Part IV: What should be taught? (2-3 classes) - This section focuses on what is taught, both the explicit and hidden curriculum of schools.					
Part V: What will schools look like in the future? (2-3 classes)- Drawing together all the previous sections of the course, we contemplate the future of education, in particular technology and globalization. (15 classes total, 1 Final Exam, 1 Feedback Section)					
----- Continue to Pedagogy I-E2(2) ↓ ↓ ↓					

Pedagogy I-E2(2)
[Class requirement]
There are no requirements for taking this course. However, students are strongly encouraged to also enrol in Advanced Lecture for Pedagogy I at the same time as this course (held directly after this class). These two courses will follow a similar schedule and content, but Pedagogy I focuses more on lecture and discussion, whereas Advanced Lecture for Pedagogy I focuses more on reading and reflection. All lectures will be in English, but the instructor can read and understand Japanese, so questions or comments may occasionally be made in Japanese.
[Method, Point of view, and Attainment levels of Evaluation]
Classes will take the form of interactive lecture. Students will be asked to actively give their opinions, reflect on their own experiences as a student, and ask good questions. There will be a lot of time devoted to class discussions. Thus, grading will be heavily weighted towards attendance and participation (30 points for attendance; 20 points for participation in debates at the end of each Part of the course (5 x 4 times). Additional requirements include a 1-2 page reflection paper (10 points) and final evaluation - either final test or paper (40 points). Students absent more than four times will not pass this course.
[Textbook]
Not used There is no textbook for this course. All readings will be distributed by the instructor.
[Reference book, etc.]
(Reference book) All reading and reference material will be distributed in class.
[Regarding studies out of class (preparation and review)]
Students will be expected to study 2-3 hours outside of class each week for this course.
[Others (office hour, etc.)]
Office Hours will be held 1 hour each week (time and place to be announced)

Lecture code: H728001

Course numbering		U-LAS04 10004 LE47			
Course title <English>	Pedagogy II-E2 Pedagogy II-E2		Affiliated department, Job title,Name	Graduate School of Education Associate Professor,Jeremy Rappleye	
Group	Humanities and Social Sciences	Field(Classification)	Pedagogy, Psychology and Sociology(Foundations)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • Second semester
Day/period	Wed.1	Target year	Mainly 1st & 2nd year students	Eligible students	For all majors
[Outline and Purpose of the Course]					
This course challenges students to think deeply about education, specifically teaching and learning. To do so, it introduces the major approaches to pedagogy, discussing the historical origins, philosophical assumptions, concrete practices, and persistent problems found in each. Throughout this course, students will be challenged to think deeper about competing goals in education. They will also be asked to engage with difficult problems surrounding cross-cultural teaching and learning. Students are encouraged to also enroll in the Advanced Lecture for Pedagogy II at the same time.					
[Course Goals]					
This lecture has two major goals. First, students will learn about how to think critically about different types of pedagogy. Second, students will gain the skills and confidence necessary for discussion on educational issues in diverse academic and intercultural contexts. The importance of avoiding one-way conceptions of cross-cultural education or comparative educational research will be emphasized, while possibilities of realizing a more intercultural practice are demonstrated.					
[Course Schedule and Contents]					
1. Class Introduction, Overview and Student Questionnaire (1 class) 2. Classical Pedagogy: Plato's Cave and Socrates Soul (2-3 classes) 3. Traditional Pedagogy (Christian, Oakeshott) (2-3 classes) 4. Progressive Pedagogy (Rousseau, Kilpatrick) (2-3 classes) 5. Dewey's Pedagogy: Experience and Democracy (2-3 classes) 6. Non-Western Pedagogy? (2-3 classes)					
(15 lectures total, including 1 Review Class, Final Examination (or Final Paper), Feedback session)					
(Note: Depending on students' background, and levels of English, the plan for this course may change. However, the course will generally progress according to the major topics outlined below. The instructor will be open to extending or reducing lectures, depending on what students are most interested in as the course develops. A more detailed syllabus will be distributed in second or third week of the course)					
----- Continue to Pedagogy II-E2(2) ↓ ↓ ↓ ↓					

Pedagogy II-E2(2)
[Class requirement]
There are no requirements for taking this course. However, students are strongly encouraged to also enrol in Advanced Lecture for Pedagogy II at the same time as this course. These two courses will follow a similar schedule and content, but Pedagogy II will focus more on providing historical background and overviews of individual thinkers and pedagogical approaches. All lectures will be in English, but the instructor can read and understand Japanese, so questions or comments may occasionally be made in Japanese.
[Method, Point of view, and Attainment levels of Evaluation]
Classes will take the form of interactive lecture. Students will be asked to actively give their opinions, reflect on their own experiences as a student, and ask good questions. Grading will be heavily weighted towards attendance and participation (30 points), writing 4 1-2 page reflection papers (20 points), short final examination (25 points) and 4-5 page final paper (25 points). Students absent more than four times will not pass the course.
[Textbook]
Not used There is no textbook for this course. All readings will be distributed by the instructor in PDF format
[Reference book, etc.]
(Reference book) J. Palmer (Ed.) 『Fifty Major Thinkers on Education: From Confucius to Dewey』 (Routledge) (* Available online)
[Regarding studies out of class (preparation and review)]
Students will be expected to study 2-3 hours outside of class each week for this course. Four times during the semester, students will need to submit a Reflection Paper (1-2 pages).
[Others (office hour, etc.)]
Office Hours will be held 1 hour each week (time and place to be announced)

Lecture code: H739001

Course numbering					
Course title <English> Psychoanalysis-E2		Affiliated department, Job title,Name		Graduate School of Human and Environmental Studies Associate Professor,TAJAN, Nicolas Pierre	
Group		Field(Classification)		Humanities and Social Sciences Pedagogy, Psychology and Sociology(Foundations)	
Language		Old group		Number of credits	
English		Group A		2	
Number of weekly time blocks	1	Class style		Course offered year/period	2019 • First semester
Lecture					
Day/period		Target year		Eligible students	
Thu.5		All students		For all majors	
[Outline and Purpose of the Course]					
This course introduces psychoanalysis through some of Sigmund Freud's most famous works (see references below) and case studies (Dora; Little Hans; Rat man). We will read, explain, criticize, and comment Sigmund Freud in order to better understand psychoanalytical key concepts such as unconscious, transference, sexuality, etc.					
[Course Goals]					
To provide you with a general introduction to and understanding of psychoanalytical theory and practice. To increase your psychoanalytical knowledge through one of the most debated case studies in the history of mental medicine. To help you develop your analytical and critical thinking regarding the founding principles, key concepts, and applications of psychoanalysis.					
[Course Schedule and Contents]					
1) Introduction 2) Unconscious 3) Transference 4) Sexuality 5) Loss 6) Dora I 7) Dora II 8) Little Hans I 9) Little Hans II 10) Rat Man I 11) Rat Man II 12) Totem and Taboo 13) Civilization and its discontents 14) Conclusion 15) Final test 16) feedback					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
Students are expected to actively participate to discussion and read Freud's five case studies. Evaluation is based on the following: Attendance and participation (30%), 2 written responses at beginning of class 5 and 9					
----- Continue to Psychoanalysis-E2(2) ↓ ↓ ↓					

Psychoanalysis-E2(2)	
(30%), final test (40%).	
[Textbook]	
Relevant material is distributed in class.	
[Reference book, etc.]	
(Reference book)	
Sigmund Freud 『Fragments of an Analysis of a Case of Hysteria (1905)』 (The Complete Psychological Works of Sigmund Freud) Sigmund Freud 『Analysis of a Phobia in a Five-year-old Boy (1909)』 (The Complete Psychological Works of Sigmund Freud) Sigmund Freud 『Notes Upon A Case of Obsessional Neurosis (1909)』 (The Complete Psychological Works of Sigmund Freud)	
[Regarding studies out of class (preparation and review)]	
Students do not have homework assignments. However, they are advised to take notes during class and to review the course material before written responses and final test.	
[Others (office hour, etc.)]	

Lecture code: H721001

Course numbering		U-LAS04 10012 LE45			
Course title <English>	Sociology I-E2 Sociology I-E2		Affiliated department, Job title,Name	Graduate School of Letters Associate Professor,Stephane Heim	
Group	Humanities and Social Sciences	Field(Classification)	Pedagogy, Psychology and Sociology(Foundations)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • First semester
Day/period	Tue.3	Target year	Mainly 1st year students	Eligible students	For all majors
[Outline and Purpose of the Course]					
Sociology can be briefly defined as the science of social interactions, social behaviors, and society. These concepts cover various subthemes such as institutions, power, organizations, stratification, etc, which make sociology a very challenging social science. This lecture presents and discusses the main topics, theories, concepts, and authors in the field of sociology, and provides students with the knowledge and tools to understand the evolution of our contemporary societies and of our everyday behaviors.					
[Course Goals]					
The objective is to familiarize students with the main concepts in sociology, in order to be able to understand and analyze the evolutions of contemporary societies. The students will examine various dimensions of societies through the confrontation with real-life sociological problems and the discussion of many case studies, having then a broad introduction to the study of social behaviors. Students will acquire a knowledge and ability to enrich their understanding of social phenomena that both shape and are outgrowths of our behaviors, and for some of them the basis to pursue the learning of social sciences at university.					
[Course Schedule and Contents]					
Week 1. Course Introduction: the Sociological Imagination Week 2. Social Research Week 3. Socialization and Social Interaction Week 4. Social Structure and Family Week 5. Culture and Media Week 6. Capitalism, Economy, and Work Week 7. Organizations and Institutions Week 8. Social Stratifications, Class, Inequalities Week 9. Deviance and Control Week 10. Race and Ethnicity Week 11. Power Week 12. Gender and Sexuality Week 13. Education and Science Week 14. Course Conclusions Week 15. Feedback					
----- Continue to Sociology I-E2(2) ↓ ↓ ↓					

Sociology I-E2(2)	
[Class requirement]	
The lectures will be delivered in English. It is not required to have already studied Sociology, but students should have an interest in the phenomena that shape and modify our contemporary societies.	
[Method, Point of view, and Attainment levels of Evaluation]	
Final exam	
[Textbook]	
Instructed during class	
[Reference book, etc.]	
(Reference book)	
Introduced during class	
[Regarding studies out of class (preparation and review)]	
During each class, the first ten-fifteen minutes are dedicated to the review of the previous class. Students are asked to prepare each lesson on a weekly basis.	
[Others (office hour, etc.)]	
Students should email the teacher to make an appointment.	

Lecture code: H715001

Course numbering		U-LAS04 20002 LE47			
Course title <English>	Advanced Lecture for Pedagogy I-E2 Advanced Lecture for Pedagogy I-E2		Affiliated department, Job title,Name	Graduate School of Education Associate Professor,Jeremy Rappleye	
Group	Humanities and Social Sciences	Field(Classification)	Pedagogy, Psychology and Sociology(Issues)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • First semester
Day/period	Wed.2	Target year	Mainly 1st & 2nd year students	Eligible students	For all majors
[Outline and Purpose of the Course]					
This course complements Pedagogy I. It provides students an opportunity to deeper their understanding of ideas discussed in by reading academic articles and other related materials on these subjects. Through these readings, the major concepts and ideas in Pedagogy I can be grasped more easily and students will have more time to debate and develop their ideas.					
[Course Goals]					
One primary goal of this Advanced Lecture is to give students confidence to read academic materials in English. Another goal is to develop more rigorous analytical skills, including the ability to compare, contrast, critique, and construct perspectives related to education. A third goal is to gain a deeper knowledge of the various components of education: schools, goals, teachers, curriculum, etc. In contrast to Pedagogy I, the core of this class will focus on critical reading and analysis of original texts.					
[Course Schedule and Contents]					
Introduction (1 class)					
Part I: What do good schools look like? (4-5 classes) - This section will examine various examples of innovative schools drawn from different cultural contexts, including Summerhill, monasteries, and preschools in Japan and America.					
Part II: What is the goal of education? (3-4 classes)- This section will introduce students to 3 broad aims for schooling found throughout the world: economic growth, social equality, and individual development.					
Part III: What makes a good teacher? (3-4 classes)- We next turn to look at the different styles of teacher that match the different goals of education discussed in Part II.					
Part IV: What should be taught? (2-3 classes) - This section focuses on what is taught, both the explicit and hidden curriculum of schools.					
Part V: What will schools look like in the future? (2-3 classes)- Drawing together all the previous sections of the course, we contemplate the future of education, in particular technology and globalization. (15 classes total, 1 Final Exam, 1 Feedback Section)					
[Class requirement]					
There are no special requirements for taking this course. However, students are strongly encouraged to also enrol in Pedagogy I at the same time as this course (Pedagogy I will be held just before this class). These two courses will be roughly the same content, but Advanced Lecture for Pedagogy I will focus more on reading					
Continue to Advanced Lecture for Pedagogy I-E2(2) ↓ ↓ ↓					

Advanced Lecture for Pedagogy I-E2(2)	
skills, deepening analysis, and contemplation. All lectures will be in English, but the instructor can read and understand Japanese, so questions or comments may occasionally be made in Japanese.	
[Method, Point of view, and Attainment levels of Evaluation]	
Classes will take the form of group analysis of key texts. Students will be expected to deliver a 10-15 minute presentation at least once during the course. Grading will based on attendance and active participation (20 points), evidence of advanced preparation (10 points), presentation and reflection paper (20 points), and a final evaluation, test or paper to be decided later (50 points). Students who are absent more than four times will not be given credit.	
[Textbook]	
Not used All readings will be distributed in class by the instructor (PDF and hardcopy formats)	
[Reference book, etc.]	
(Reference book) Introduced during class	
[Regarding studies out of class (preparation and review)]	
Students will be expected to read about 1-2 articles/chapters outside of class each week. This will be roughly 15-20 pages of academic English language text. Some readings will be quite challenging, others will not. This will require studying approximately 2-3 hours outside of class each week for this course.	
[Others (office hour, etc.)]	
Office Hours will be held 1 hour each week (time and place to be announced)	

Lecture code: H716001

Course numbering		U-LAS04 20003 LE47			
Course title <English>	Advanced Lecture for Pedagogy II-E2 Advanced Lecture for Pedagogy II-E2		Affiliated department, Job title,Name	Graduate School of Education Associate Professor,Jeremy Rappleye	
Group	Humanities and Social Sciences	Field(Classification)	Pedagogy, Psychology and Sociology(Issues)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • Second semester
Day/period	Wed.2	Target year	Mainly 1st & 2nd year students	Eligible students	For all majors
[Outline and Purpose of the Course]					
This course complements and extends Pedagogy II. It focuses on deepening students understanding of major pedagogical approaches by critically engaging with original, high-level texts by leading philosophical and educational thinkers. Students are encouraged to read advanced level texts so that they can acquire both a higher command of academic English and a deeper understanding of diverse pedagogical approaches.					
[Course Goals]					
One primary goal of this course are to help students gain the skills and confidence to read challenging academic materials in English. Another goal is to develop high-level analytical skills in the field of pedagogy. A third is to gain a deeper knowledge of leading thinkers. In contrast to Pedagogy II, the core of this class will be critical reading and analysis of original texts. The modes of critical engagement acquired will be useful across all subjects in the social sciences and humanities.					
[Course Schedule and Contents]					
This class will complement and thus closely follow Pedagogy II. Ideally, all students will enrol in both courses, first receiving lectures in Pedagogy II, then reading original texts to deepen their knowledge further in the Advanced Lecture for Pedagogy II.					
As such, the class is organized in the same manner as Pedagogy II:					
<ol style="list-style-type: none"> 1. Class Overview and Student Questionarie (1 class) 2. Classic Conceptions: Plato's Cave, Socrates Soul (2-3 classes) 3. Traditional Pedagogy (Christianity, Oakeshott) (2-3 classes) 4. Progressive Pedagogy (Rousseau, Kilpatrick) (2-3 classes) 5. Dewey's Pedagogy: Experience and Democracy (2-3 classes) 6. Non-Western Pedagogy? Self, Tradition, Other (Japanese thinkers and others) (2-3 classes) 					
(15 lectures total, including Final Examination (or Final Paper), plus 1 Feedback Class					
----- Continue to Advanced Lecture for Pedagogy II-E2(2) ↓ ↓ ↓					

Advanced Lecture for Pedagogy II-E2(2)	
[Class requirement]	
There are no special requirements for taking this course. However, students are strongly encouraged to also enroll in Pedagogy II at the same time as this course. These two courses will be roughly the same content, but Advanced Lecture for Pedagogy II will focus more on reading skills and deepening knowledge. All lectures will be in English, but the instructor can read and understand Japanese, so questions or comments may occasionally be made in Japanese.	
[Method, Point of view, and Attainment levels of Evaluation]	
Classes will take the form of group analysis of key texts. Students will be expected to deliver a 10-15 minute presentation at least once during the course. Grading will based on attendance and active participation (30 points), evidence of advanced preparation (15 points), presentation and reflection paper (15 points), and a final evaluation, test or paper to be decided later (40 points). Students who are absent more than four times will not be given credit.	
[Textbook]	
Not used There is no textbook for this course. All readings will be distributed by the instructor in PDF format and hard copy (if students wish to have hard copy). We will discuss in the first class.	
[Reference book, etc.]	
(Reference book) J. Palmer (Ed.) 『Fifty Major Thinkers on Education: From Confucius to Dewey』 (* Available online)	
[Regarding studies out of class (preparation and review)]	
Students will be expected to read 1-2 major articles outside of class each week. This will be roughly 15-30 pages of challenging, academic English language text. This will require studying 2-3 hours outside of class each week for this course.	
[Others (office hour, etc.)]	
Office Hours will be held 1 hour each week (time and place to be announced)	

Lecture code: H709001

Course numbering		U-LAS04 20004 LE46			
Course title <English>	Introduction to Educational Psychology I -E2		Affiliated department, Job title,Name	Graduate School of Education Professor,Emmanuel MANALO	
	Introduction to Educational Psychology I-E2				
Group	Humanities and Social Sciences		Field(Classification)	Pedagogy, Psychology and Sociology(Issues)	
Language	English		Old group	Group A	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Mon.3		Target year	Mainly 1st & 2nd year students	Eligible students For all majors
[Outline and Purpose of the Course]					
The main purpose of this course is to introduce students to the basic concepts, issues, and perspectives in educational psychology and provide them with the foundational knowledge necessary for future study in this subject area. The focus of the course is on introducing essential theories and research, and considering the real and possible applications of those to educational practices.					
[Course Goals]					
The goals of this course are: - To facilitate students' acquisition of knowledge about basic concepts, issues, and perspectives in educational psychology - To encourage students to think about the relevance and applications of that knowledge - especially with regard to themselves and their immediate environment - To facilitate the development of students' thinking and communication skills in English					
[Course Schedule and Contents]					
Course Schedule The following is a guide to what will be covered during the 16 weeks of the semester. As required, some minor adjustments may be made to this schedule. Week 1: Introduction to the course and to the foundations of learning Week 2: The brain and learning: lecture and discussion Week 3: The physiology of learning: reflections about opportunities, limitations, and challenges Week 4: The nature of development: lecture and discussion Week 5: The nature of development: reflections on the contributions of maturation and experience Week 6: The nature of development: reflections on the importance of catering to individual differences in school education Week 7: What "learning" is from the behavioural perspective: lecture and discussion Week 8: What "learning" is from the gestalt and cognitive perspectives: lecture and discussion Week 9: What "learning" is: reflections about the usefulness of knowing these perspectives for teachers and students Week 10: The mechanisms of learning part 1: lecture and discussion Week 11: The mechanisms of learning part 2: lecture and discussion Week 12: The mechanisms of learning: reflections about applications of principles to classroom teaching and learning Week 13: Language and learning: lecture and discussion Week 14: Language and learning: reflections about the relationship between language and thought					
Continue to Introduction to Educational Psychology I-E2(2) ↓ ↓					

Introduction to Educational Psychology I-E2(2)
Week 15: Final examination Week 16: Feedback week
Course Conduct Students taking this course will be expected to prepare for each class by reading the appropriate textbook pages and any other materials that the instructor assigns. Class sessions will comprise of lectures provided by the instructor to summarize key points, highlight important issues, and introduce students to other pertinent information that bear on the topic being covered: these will all be provided on the assumption that students have undertaken the preparatory readings. The class sessions will also involve pair, small group, and/or plenary discussions, and exercises for students to complete individually or in cooperation with other students. Active participation in these discussions and exercises is necessary to meet coursework/grading requirements (see below). 40% of the course grade is based on a portfolio of work that students complete relating to the topics dealt with in the course (i.e., exercises completed in class, notes on key points raised in discussions with other students, notes taken from and reflections on assigned and other readings undertaken, etc.).
[Class requirement]
None
[Method, Point of view, and Attainment levels of Evaluation]
Portfolio of work = 40%, Short essay (750 words) = 20%, Class discussion participation and contribution = 20%, Final examination = 20%
[Textbook]
Stones, E. 『An introduction to educational psychology.』 (London: Routledge) ISBN:415750555
[Regarding studies out of class (preparation and review)]
Students will be expected to spend about 90 minutes each week on out-of-class preparation, readings, and assignments.
[Others (office hour, etc.)]
Students will be expected to obtain their own copy of the textbook, and to read assigned chapters and other readings in preparation for each class. During the semester, students can email the instructor to make an appointment or to ask any questions about the course.


Lecture code: H710001

Course numbering		U-LAS04 20005 LE46			
Course title <English>	Introduction to Educational Psychology II-E2		Affiliated department, Job title,Name	Graduate School of Education Professor,Emmanuel MANALO	
	Introduction to Educational Psychology II-E2				
Group	Humanities and Social Sciences		Field(Classification)	Pedagogy, Psychology and Sociology(Issues)	
Language	English		Old group	Group A	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Mon.3		Target year	Mainly 1st & 2nd year students	Eligible students For all majors
[Outline and Purpose of the Course]					
The main purpose of this course is to introduce some key concepts, issues, and perspectives in educational psychology and provide students with the foundational knowledge necessary for future study in this subject area. The focus of the course is on introducing essential theories and research, and considering the real and possible applications of those to educational practices.					
[Course Goals]					
Following on from Introduction to Educational Psychology I, the goals of this course are: - To facilitate students' acquisition of more knowledge about basic concepts, issues, and perspectives in educational psychology - To encourage students to think about the relevance and applications of that knowledge - with regard to themselves, their immediate environment, and beyond - To facilitate the development of students' thinking and communication skills in English					
[Course Schedule and Contents]					
Course Schedule The following is a guide to what will be covered during the 16 weeks of the semester. As required, some minor adjustments may be made to this schedule. Week 1: Introduction to the course and to concept formation in children Week 2: Schema in learning: lecture and discussion Week 3: Concepts and schemas: reflections about what we know, how we know, what we think others may know ... Week 4: Memory: an introduction to and discussion of basic concepts Week 5: Remembering and forgetting: reflections about what we retain and what we lose in memory Week 6: Mnemonic techniques: reflections about uses in educational settings Week 7: Learning in school: lecture and discussion Week 8: Learning in school: reflections about what is taught - and how Week 9: Examinations and tests: lecture and discussion Week 10: Formative and summative evaluation: reflections about effects on learning Week 11: Test and question types: reflections about uses and usefulness Week 12: Intelligence and intelligence testing: lecture and discussion Week 13: Ability grouping: reflections about advantages and disadvantages for students and teachers Week 14: Diversity in education: reflections about benefits and challenges Week 15: Final examination Week 16: Feedback week					
Continue to Introduction to Educational Psychology II-E2(2) ↓ ↓					

Introduction to Educational Psychology II-E2(2)	

Course Conduct Students taking this course will be expected to prepare for each class by reading the appropriate textbook pages and any other materials that the instructor assigns. Class sessions will comprise of lectures provided by the instructor to summarize key points, highlight important issues, and introduce students to other pertinent information that bear on the topic being covered: these will all be provided on the assumption that students have undertaken the preparatory readings. The class sessions will also involve pair, small group, and/or plenary discussions, and exercises for students to complete individually or in cooperation with other students. Active participation in these discussions and exercises is necessary to meet coursework/grading requirements (see below). 40% of the course grade is based on a portfolio of work that students complete relating to the topics dealt with in the course (i.e., exercises completed in class, notes on key points raised in discussions with other students, notes taken from and reflections on assigned and other readings undertaken, etc.).	
[Class requirement]	
There are no prerequisites, but it is preferable if students have taken Introduction to Educational Psychology I before taking this course.	
[Method, Point of view, and Attainment levels of Evaluation]	
Portfolio of work = 40%, Short essay (750 words) = 20%, Class discussion participation and contribution = 20%, Final examination = 20%	
[Textbook]	
Stones, E. 『An introduction to educational psychology.』 (London: Routledge) ISBN:415750555	
[Regarding studies out of class (preparation and review)]	
Students will be expected to spend about 90 minutes each week on out-of-class preparation, readings, and assignments.	
[Others (office hour, etc.)]	
Students will be expected to obtain their own copy of the textbook, and to read assigned chapters and other readings in preparation for each class. During the semester, students can email the instructor to make an appointment or to ask any questions about the course.	
	

Lecture code: H708001

Course numbering		U-LAS04 20006 LE47			
Course title <English>	Introduction to Educational Studies I-E2 Introduction to Educational Studies I-E2		Affiliated department, Job title,Name	Graduate School of Education Professor,Emmanuel MANALO	
Group	Humanities and Social Sciences	Field(Classification)	Pedagogy, Psychology and Sociology(Issues)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • First semester
Day/period	Mon.1	Target year	Mainly 1st & 2nd year students	Eligible students	For all majors
[Outline and Purpose of the Course]					
The main purpose of this course is to provide students with an introduction to some of the key concepts, issues, and perspectives in the study of education. Through a series of lectures, exercises, and discussions in class, students will be encouraged to consider the meaning and functions of education; different theories of teaching and learning; differences in educational systems; strategies in catering for special educational needs and promoting inclusion; and some of the controversies and debates surrounding the issue of gender in education.					
[Course Goals]					
The goals of this course are: - To facilitate students' acquisition of knowledge about some of the important concepts, issues, and ideas in educational studies - To foster in students an understanding and appreciation of the multiple perspectives that exist in the study and practice of education - To encourage students to think about the relevance and applications of the knowledge they are acquiring - To facilitate the development of students' thinking and communication skills in English					
[Course Schedule and Contents]					
Course Schedule The following is a guide to what will be covered during the 16 weeks of the semester. As required, some minor adjustments may be made to this schedule. Week 1: Introduction to the course and to the question of what education might mean Week 2: What education means: lecture and discussion Week 3: What education means: reflections about own and others' perspectives on the meaning of education Week 4: Theories of teaching and learning: lecture and discussion Week 5: Theories of teaching and learning: reflections about the usefulness of these theories to the learner Week 6: Theories of teaching and learning: reflections about the usefulness of these theories to the teacher Week 7: Differences in educational systems part 1: lecture and discussion Week 8: Differences in educational systems part 2: lecture and discussion Week 9: Differences in educational systems: reflections about culture and the realities of school settings Week 10: Special educational needs and inclusion: lecture and discussion Week 11: Educating students with learning disabilities: reflections on issues, controversies, and strategies Week 12: Educating students who are gifted and talented: reflections on issues, controversies, and strategies Week 13: Gender in education: lecture and discussion Week 14: Gender in education: reflections about fairness and ways to promote equal opportunities Week 15: Final examination Week 16: Feedback week					
Continue to Introduction to Educational Studies I-E2(2) ↓ ↓					

Introduction to Educational Studies I-E2(2)
Course Conduct Students taking this course will be expected to prepare for each class by reading the appropriate textbook pages and any other materials that the instructor assigns. Class sessions will comprise of lectures provided by the instructor to summarize key points, highlight important issues, and introduce students to other pertinent information that bear on the topic being covered: these will all be provided on the assumption that students have undertaken the preparatory readings. The class sessions will also involve pair, small group, and/or plenary discussions, and exercises for students to complete individually or in cooperation with other students. Active participation in these discussions and exercises is necessary to meet coursework/grading requirements. 40% of the course grade is based on a portfolio of work that students complete relating to the topics dealt with in the course (i.e., exercises completed in class, notes on key points raised in discussions with other students, notes taken from and reflections on assigned and other readings undertaken, etc.).
[Class requirement]
None
[Method, Point of view, and Attainment levels of Evaluation]
Portfolio of work = 40%, Short essay (750 words) = 20%, Class discussion participation and contribution = 20%, Final examination = 20%
[Textbook]
Matheson, D. 『An introduction to the study of education (4rd ed.)』 (London: Routledge) ISBN: 415623103
[Regarding studies out of class (preparation and review)]
Students will be expected to spend about 90 minutes each week on out-of-class preparation, readings, and assignments.
[Others (office hour, etc.)]
Students will be expected to obtain their own copy of the textbook, and to read assigned chapters and other readings in preparation for each class. During the semester, students can email the instructor to make an appointment or to ask any questions about the course.


Lecture code: H711001

Course numbering		U-LAS04 20007 LE47			
Course title <English>	Introduction to Educational Studies II-E2		Affiliated department, Job title,Name	Graduate School of Education Professor,Emmanuel MANALO	
	Introduction to Educational Studies II-E2				
Group	Humanities and Social Sciences		Field(Classification)	Pedagogy, Psychology and Sociology(Issues)	
Language	English		Old group	Group A	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Mon.1		Target year	Mainly 1st & 2nd year students	Eligible students For all majors
[Outline and Purpose of the Course]					
The main purpose of this course is to introduce some key concepts, issues, and perspectives in the study of education. Through a series of lectures, exercises, and discussions in class, students will be encouraged to consider various important issues about student and teacher roles, and what happens in the classroom and beyond. Through a project, students will investigate and reflect on educational provisions in Japan in comparison to the United Kingdom (covered in the textbook) and other countries.					
[Course Goals]					
Following on from Introduction to Educational Studies I, the goals of this course are: - To further facilitate students' acquisition of knowledge about some of the important concepts, issues, and ideas in educational studies - To continue to foster in students an understanding and appreciation of the multiple perspectives that exist in the study and practice of education - To encourage students to think about the relevance and applications of the knowledge they are acquiring - To facilitate the development of students' thinking and communication skills in English					
[Course Schedule and Contents]					
Course Schedule The following is a guide to what will be covered during the 16 weeks of the semester. As required, some minor adjustments may be made to this schedule. Week 1: Introduction to the course and to the role of technology in education Week 2: The "flipped" classroom: reconsidering teacher and student roles Week 3: Early childhood education: lecture and discussion Week 4: Compulsory school education: lecture and discussion Week 5: Further and higher education: lecture and discussion Week 6: Discussion of student project on investigating and comparing educational provisions in Japan, part 1 Week 7: Discussion of student project on investigating and comparing educational provisions in Japan, part 2 Week 8: Motivation and school achievement: lecture and discussion Week 9: Lifelong learning: lecture and discussion Week 10: Lifelong learning: reflections on its value Week 11: Race and social class inequalities in education: lecture and discussion Week 12: Inequalities in education: reflections about the effectiveness of strategies for addressing inequalities Week 13: Educational research: lecture and discussion Week 14: Educational research: some considerations about what, why, and how Week 15: Final examination					
Continue to Introduction to Educational Studies II-E2(2) ↓ ↓					

Introduction to Educational Studies II-E2(2)
----- Week 16: Feedback week
Course Conduct Students taking this course will be expected to prepare for each class by reading the appropriate textbook pages and any other materials that the instructor assigns. Class sessions will comprise of lectures provided by the instructor to summarize key points, highlight important issues, and introduce students to other pertinent information that bear on the topic being covered: these will all be provided on the assumption that students have undertaken the preparatory readings. The class sessions will also involve pair, small group, and/or plenary discussions, and exercises for students to complete individually or in cooperation with other students. Active participation in these discussions and exercises is necessary to meet coursework/grading requirements. 40% of the course grade is based on a portfolio of work that students complete relating to the topics dealt with in the course (i.e., exercises completed in class, notes on key points raised in discussions with other students, notes taken from and reflections on assigned and other readings undertaken, etc.).
[Class requirement] There are no prerequisites, but it is preferable if students have taken Introduction to Educational Studies I before taking this course.
[Method, Point of view, and Attainment levels of Evaluation] Portfolio of work = 40%, Report (750 words) = 20%, Class discussion participation and contribution = 20%, Final examination = 20%
[Textbook] Matheson, D. 『An introduction to the study of education (4th ed.)』 (London: Routledge) ISBN: 415623103
[Regarding studies out of class (preparation and review)] Students will be expected to spend about 90 minutes each week on out-of-class preparation, readings, and assignments.
[Others (office hour, etc.)] Students will be expected to obtain their own copy of the textbook, and to read assigned chapters and other readings in preparation for each class. During the semester, students can email the instructor to make an appointment or to ask any questions about the course.


Lecture code: H740001

Course numbering					
Course title <English> Psychoanalysis II-E2		Affiliated department, Job title,Name		Graduate School of Human and Environmental Studies Associate Professor,TAJAN, Nicolas Pierre	
Group		Field(Classification)		Humanities and Social Sciences Pedagogy, Psychology and Sociology(Issues)	
Language		Old group		Number of credits	
English		Group A		2	
Number of weekly time blocks	1	Class style		Course offered year/period	2019・Second semester
Lecture					
Day/period		Target year		Eligible students	
Tue.4		All students		For all majors	
(Students of Faculty of Integrated Human Studies cannot take this course as liberal arts and general education course. Please register the course with your department.)					
[Outline and Purpose of the Course]					
This course introduces psychoanalysis through one of Jacques Lacan's most famous works. We will read, explain, and comment Jacques Lacan's return to Freud by focusing on a case study of paranoia: Schreber. Some crucial aspects of Lacanian doctrine will be explained, including his approach to linguistics and subjectivity; the three orders; and the four discourses.					
[Course Goals]					
To provide you with a general introduction to and understanding of Lacanian psychoanalytical theory and practice. To increase your psychoanalytical knowledge through one of the most debated case studies in the history of mental medicine. To help you develop your analytical and critical thinking regarding the founding principles, major notions, and applications of psychoanalysis.					
[Course Schedule and Contents]					
1) Introduction 2) Metaphor, Metonymy and Primacy of the Signifier I 3) Metaphor, Metonymy and Primacy of the Signifier II 4) The Paternal Metaphor and Subjectivity I 5) The Paternal Metaphor and Subjectivity II 6) The Seminar of Jacques Lacan : The Psychoses I 7) The Seminar of Jacques Lacan : The Psychoses II 8) The Seminar of Jacques Lacan : The Psychoses III 9) The Seminar of Jacques Lacan : The Psychoses IV 10) The Three orders: Imaginary, Symbolic, Real I 11) The Three orders: Imaginary, Symbolic, Real II 12) The four discourses I 13) The four discourses II 14) Conclusion 15) Final test 16) feedback					
Continue to Psychoanalysis II-E2(2) ↓ ↓ ↓					

Psychoanalysis II-E2(2)	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Students are expected to actively participate to discussion and read Freud's five case studies. Evaluation is based on the following: Attendance and participation (30%), 2 written responses at beginning of class 6 and 10 (30%), final test (40%).	
[Textbook]	
Relevant material is distributed in class.	
[Reference book, etc.]	
(Reference book)	
Dor, Joel 『Introduction to the Reading of Lacan: The Unconscious Structured Like a Language』 (New York, Other Press, 2001) Sigmund Freud 『Psycho-Analytic Notes on an Autobiographical Account of a Case of Paranoia (Dementia Paranoides) (1911)』 (The Complete Psychological Works of Sigmund Freud) Jacques Lacan 『The Psychoses 1955-1956 (SEMINAR OF JACQUES LACAN)』 (W. W. Norton & Company, 1997)	
[Regarding studies out of class (preparation and review)]	
Students do not have homework assignments. However, they are advised to take notes during class and to review the course material before written responses and final test.	
[Others (office hour, etc.)]	

Lecture code: H723001

Course numbering		U-LAS04 20021 LE46			
Course title <English>	Introduction to Primate Behavior and Cognition-E2		Affiliated department, Job title,Name	Graduate School of Letters Professor,Anderson, James Russell	
	Introduction to Primate Behavior and Cognition-E2				
Group	Humanities and Social Sciences		Field(Classification)	Pedagogy, Psychology and Sociology(Issues)	
Language	English		Old group	Group A	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Tue.4		Target year	All students	Eligible students For all majors
[Outline and Purpose of the Course]					
This class will focus on nonhuman primates (prosimians, monkeys, apes) and why they are of particular interest to many biologists, anthropologists, and psychologists. Students will learn about taxonomic relationships and distribution of primates, their socio-ecological strategies, social systems, and cognitive abilities. Observational and experimental investigations of these and related phenomena will be reviewed and analyzed. The aim is to investigate the ecological and psychological status of primates in today's world. The course also aims to provide students with the opportunity to communicate about primates in English.					
[Course Goals]					
The class aims to help students acquire knowledge about the evolution of primates - their structure, their social and nonsocial behavior, and how they adapt to changing environmental circumstances, and to use written and spoken English to express their knowledge.					
[Course Schedule and Contents]					
<ol style="list-style-type: none"> 1. Why study primate behavior? Brief introduction to Primates, and methods of study 2. Primate taxonomy 3. Early influential studies of primate behavior 4. Primate socio-ecology: social organizations and environment 5. Primate socio-ecology: specific adaptations and strategies; responses to habitat change 6. Living together: sympatry, intra- and inter-group competition and cooperation in the wild 7. Living together: experimental approaches to studying competition and cooperation 8. Behavioral adaptations: how genes and experience interact 9. Mechanisms and parameters of social learning 10. Tool use as a foraging adaptation 11. Primate intelligence: evolutionary factors 12. Primates in captivity: the good and the bad 13. Ethical aspects of research on nonhuman primates 14. Recent highlights in the study of primate behavior 					
Please note that the order and content of specific classes may change.					
Continue to Introduction to Primate Behavior and Cognition-E2(2) ↓ ↓ ↓					

Introduction to Primate Behavior and Cognition-E2(2)	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Assessment will be based on two components as follows:	
1) A mid-term test consisting of 25 multiple-choice questions (each worth 1%) and five short-answer questions written in the students' own words (each worth 5%) (Total: 50%)	
2) A final exam consisting of 25 multiple-choice questions (each worth 1%) and five short-answer questions written in the students' own words (each worth 5%) (Total: 50%)	
[Textbook]	
Lecture notes/slides will be distributed.	
[Reference book, etc.]	
(Reference book)	
Introduced during class	
[Regarding studies out of class (preparation and review)]	
Students are expected to review the lecture handouts after each class, and to consult other sources(books, journals, appropriate websites).	
[Others (office hour, etc.)]	
There are no specific office hours. My e-mail address is:	
j.r.anderson@psy.bun.kyoto-u.ac.jp	
	

Lecture code: H722001

Course numbering		U-LAS04 20022 LE46			
Course title <English>	Introduction to Comparative Psychology-E2		Affiliated department, Job title, Name	Graduate School of Letters Professor, Anderson, James Russell	
	Introduction to Comparative Psychology-E2				
Group	Humanities and Social Sciences		Field(Classification)	Pedagogy, Psychology and Sociology(Issues)	
Language	English		Old group	Group A	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Tue.4		Target year	All students	Eligible students For all majors
[Outline and Purpose of the Course]					
Students will become acquainted with the principle reasons for psychologists' interest in the behavior of other species as well as humans, and they will gain knowledge about the major approaches used (observational studies, fieldwork, experimental manipulations) in this field. They will become familiar with the most important researchers in this branch of psychology, the historical contexts of their work, and how their studies have influenced contemporary research. There will be opportunities to ask questions in each class, and to compose short-answer questions.					
[Course Goals]					
Students will learn about major psychological approaches to understanding learning and behavior of humans and other species. Topics will include classical and operant conditioning, advanced cognition, and social and mating systems.					
[Course Schedule and Contents]					
<ol style="list-style-type: none"> 1. Background to classical and operant conditioning 2. Learning: sensitive periods, preparedness, and applications 3. The ethological approach to animal behavior. Tinbergen's 4 questions 4. Early development: nature and nurture 5. Early development: the formation and disruption of social attachments 6. The impact of early experience on behavioral adjustment 7. Living in groups: costs and benefits 1 8. Living in groups: costs and benefits 2 9. Mating systems: humans and other species 10. Social relationships: mechanisms and correlates of dominance 11. Social relationships: friendships, alliances, and kin. Aggression and reconciliation 12. Social cognition: from recognition to theory of mind 13. Physical cognition: dealing with objects and events 14. Recent highlights in comparative psychology 					
Note: The contents of specific classes may change.					
----- Continue to Introduction to Comparative Psychology-E2(2) ↓ ↓ ↓					

Introduction to Comparative Psychology-E2(2)	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Assessment will be by means of two components as follows:	
1) There will be a mid-term test consisting of five short-answer questions (each worth 5%) and 25 multiple-choice questions (each worth 1%)(Total: 50%).	
2) There will be an end-of-course exam consisting of five short-answer questions (each worth 5%) and 25 multiple-choice questions (each worth 1%)(Total: 50%).	
[Textbook]	
Lecture notes/slides will be distributed and posted on KULASIS.	
[Reference book, etc.]	
(Reference book)	
Introduced during class	
[Regarding studies out of class (preparation and review)]	
No special preparations are required before or after classes, other than revising the material covered.	
[Others (office hour, etc.)]	
There are no specific office hours. My e-mail address is:	
j.r.anderson@psy.bun.kyoto-u.ac.jp	
	

Lecture code: H724001

Course numbering		U-LAS04 20030 LE45			
Course title <English>	Introduction to Globalization Studies-E2 Introduction to Globalization Studies-E2		Affiliated department, Job title,Name	Graduate School of Letters Associate Professor,Stephane Heim	
Group	Humanities and Social Sciences	Field(Classification)	Pedagogy, Psychology and Sociology(Issues)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • First semester
Day/period	Tue.4	Target year	Mainly 1st year students	Eligible students	For all majors
[Outline and Purpose of the Course]					
Globalization is presented as the main factor of evolution affecting the contemporary world, both in its political, economic, social, and cultural dimensions. Globalization has then to be examined as a process that entails several changes due to migration, political regional integration, unequal economic development, cultural convergence for example. This course focuses on these overall tendencies, and their various effects on developing and developed countries.					
[Course Goals]					
The first target of this course is to provide students with sound knowledge about the several ways globalization impact our societies. In that respect, students will study both the economic, political, social, and cultural dimensions of globalization. At the end of the course, they will have an interdisciplinary and problem-oriented approach of issues entailed by globalization.					
[Course Schedule and Contents]					
Week 1. Course Introduction Week 2. Theories of the Global System, Discourses on Globalization Week 3. Sociology of Globalization Week 4. Globalization in a Historical Perspective Week 5. Economic Globalization: Global Capitalism Week 6. Economic Globalization: Neoliberalism Week 7. Political Globalization: Transnational State and Institutions Week 8. Political Globalization: Global Democratization Week 9. Cultural Globalization: Local/Global Week 10. Globalization, Ethnicity, and Gender Week 11. Globalization, Identity, Culture, and Communication Week 12. Globalization, and Transnational Migrations Week 13. Globalization and Environment Week 14. Course Conclusions Week 15. Feedback					
[Class requirement]					
The lectures will be delivered in English. There are no prerequisite to take this course.					
----- Continue to Introduction to Globalization Studies-E2(2) ↓ ↓ ↓					

Introduction to Globalization Studies-E2(2)	
[Method, Point of view, and Attainment levels of Evaluation]	
Final exam.	
[Textbook]	
Instructed during class	
[Reference book, etc.]	
(Reference book)	
Introduced during class	
[Regarding studies out of class (preparation and review)]	
During each class, the first ten-fifteen minutes are dedicated to the review of the previous class. Students are asked to prepare each lesson on a weekly basis.	
[Others (office hour, etc.)]	
Students should email the teacher to make an appointment.	

Lecture code: H725001

Course numbering		U-LAS04 20031 LE45			
Course title <English>	Introduction to Social Research-E2 Introduction to Social Research-E2		Affiliated department, Job title,Name	Graduate School of Letters Associate Professor,Stephane Heim	
Group	Humanities and Social Sciences	Field(Classification)	Pedagogy, Psychology and Sociology(Issues)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • Second semester
Day/period	Tue.3	Target year	Mainly 1st & 2nd year students	Eligible students	For all majors
[Outline and Purpose of the Course]					
Social sciences, whose aim is an in-depth understanding of human behaviors, share with natural and engineering sciences a common "scientific frame", while having also specific and diverse research methodologies. Those methodologies are usually divided into quantitative and qualitative approaches. The qualitative approaches are presented in this lecture. We will see both how a research can be conducted from the building of a sound problematic to the final report writing, and how several well-known surveys produced knowledge about human behaviors.					
[Course Goals]					
This course aims to familiarize students with different qualitative research methods so as to develop their critical sense and ability in analyzing social, economic, and political issues presented and debated in the media, and in leading qualitative researches on their own. A great variety of researches will be exposed and discussed, as well as the construction of, and issues linked with each step of a qualitative research.					
[Course Schedule and Contents]					
Week 1. Introduction to Field Research Week 2. Literature Reviews Week 3. Research Design: Hypothesis and Research Question Week 4. Field Research and Questionnaire Week 5. Interviews, Observation, and Participation Week 6. Documents and Archives Week 7. Interpretation, Qualitative Data Analysis, and Content Analysis Week 8. Conceptualization, Operationalization Week 9. Writing Research Reports Week 10. Historical/Comparative Research Week 11. Field Research and Social Surveys Week 12. Social Research in Critical Perspective Week 13. Research Ethics Week 14. Course Conclusions Week 15. Feedback					
[Class requirement]					
The lectures will be delivered in English. There are no prerequisite to take this course.					
----- Continue to Introduction to Social Research-E2(2) ↓ ↓ ↓					

Introduction to Social Research-E2(2)	

[Method, Point of view, and Attainment levels of Evaluation]	
Final exam.	
[Textbook]	
Instructed during class	
[Reference book, etc.]	
(Reference book)	
Introduced during class	
[Regarding studies out of class (preparation and review)]	
During each class, the first ten-fifteen minutes are dedicated to the review of the previous class. Students are asked to prepare each lesson on a weekly basis.	
[Others (office hour, etc.)]	
Students should email the teacher to make an appointment.	

Lecture code: H726001

Course numbering		U-LAS04 20032 LE45			
Course title <English>	Sociology of Work and Organizations-E2 Sociology of Work and Organizations-E2		Affiliated department, Job title,Name	Graduate School of Letters Associate Professor,Stephane Heim	
Group	Humanities and Social Sciences	Field(Classification)	Pedagogy, Psychology and Sociology(Issues)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • Second semester
Day/period	Tue.4	Target year	Mainly 1st & 2nd year students	Eligible students	For all majors
[Outline and Purpose of the Course]					
Work and organizations are two central institutions in contemporary societies, greatly participating in their shaping through social stratification and social integration. They create differentiation among individuals in terms of occupations, but they also give birth to interdependency and modes of cooperation through which individuals interact with each other. Based on these two processes (social differentiation and integration), the course will put the emphasis on different aspects of work and organizations while presenting the main theories in this field of research.					
[Course Goals]					
The course aims at understanding the basics of sociology of work and organizations, so that students develop a critical sense about the functioning of these two institutions, and are prepared to solve problems they might encounter in their future carriers. Students will therefore acquire knowledge of several approaches and theories on the function of work and organizations in the society. Several case studies will also be introduced to illustrate these approaches.					
[Course Schedule and Contents]					
Week 1. Course Introduction: What is Sociology of Work and Organizations? Week 2. Theories of Work: Division of Labor Week 3. Theories of Organization: Bureaucracy and Control Week 4. Taylorism, Rationality, and the Labor Society Week 5. Fordism, Post-Fordism, and Neoliberalism Week 6. The Social Construction of Markets Week 7. Firms: Outsourcing, Control, and Trust Week 8. The Emergence of the Service Industry Week 9. From Qualification to Competencies: Wages and Industrial Relations Week 10. Professions and Occupational Groups Week 11. Employment and Unemployment Week 12. Work, Age, Gender, and Family Week 13. Work, Organizations, and Institutions Week 14. Course Conclusions Week 15 Feedback					
----- Continue to Sociology of Work and Organizations-E2(2) ↓ ↓ ↓					

Sociology of Work and Organizations-E2(2)	
[Class requirement]	
The lectures will be delivered in English. There are no prerequisite to take this course, though it would be better to have some basic sociological knowledge.	
[Method, Point of view, and Attainment levels of Evaluation]	
Final exam.	
[Textbook]	
Instructed during class	
[Reference book, etc.]	
(Reference book)	
Introduced during class	
[Regarding studies out of class (preparation and review)]	
During each class, the first ten-fifteen minutes are dedicated to the review of the previous class. Students are asked to prepare each lesson on a weekly basis.	
[Others (office hour, etc.)]	
Students should email the teacher to make an appointment.	

Lecture code: H712001

Course numbering		U-LAS04 20033 LE45			
Course title <English>	Introduction to Sociological Observation -E2		Affiliated department, Job title,Name	Graduate School of Global Environmental Studies Associate Professor,SINGER JANE	
	Introduction to Sociological Observation-E2				
Group	Humanities and Social Sciences	Field(Classification)		Pedagogy, Psychology and Sociology(Issues)	
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • First semester
Day/period	Fri.4	Target year	Mainly 1st & 2nd year students	Eligible students	For all majors
[Outline and Purpose of the Course]					
Why do you wish to buy brand-name goods? Why do you select a particular friend or spouse? Sociology is the study of human social life, groups, and societies. Study in this field helps us understand why we act the way we do, how historical and social factors affect us and how we can address social and societal problems. In this course students will apply sociological approaches to examine aspects of our own and other societies that interest them. Through videos,lectures,group and pair discussions and extensive class interaction we will explore these topics in a cross-cultural and dynamic classroom setting.					
[Course Goals]					
Students will understand and be able to apply some core sociological theories, including Marxism, social functionalism and symbolic interaction, to question critically the causes, meanings and implications of social trends and phenomena. They will improve presentation skills and learn how to conduct observation-based qualitative research.					
[Course Schedule and Contents]					
Class 1: What is sociology? Introduction to the field					
Class 2: Theories and their application: Sociological observation					
Class 3-4: Marriage and the family (lecture and group activities)					
Class 5-6: Child-rearing and socialization					
Class 7-8: Midterm test. Culture and norms. Start student presentations					
Class 9-10: Gender and roles, student presentations					
Class 11-12: Racism and ethnicity, student presentations					
Class 13-14: Deviance and poverty, student presentations Note: The schedule may change slightly depending on class requirements					
----- Continue to Introduction to Sociological Observation-E2(2) ↓ ↓ ↓					

Introduction to Sociological Observation-E2(2)	

[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Evaluation will be based on class attendance and active participation (30%), short assignments and classroom exercises (30%), an observation report (15%) and final group presentations(25%).	
[Textbook]	
No text; required readings and lecture notes will be distributed in class.	
[Reference book, etc.]	
(Reference book)	
Introduced during class	
[Regarding studies out of class (preparation and review)]	
Students should download the Powerpoint file from the KULASIS class site before each class. They should be prepared for active participation in class.The midterm test will be based on the information presented in the Powerpoint slide lectures.	
[Others (office hour, etc.)]	
Please email the instructor to set up an office appointment. You will be informed of the instructor's email address in class.	
	

Lecture code: H717001

Course numbering		U-LAS04 20034 LE45			
Course title <English>		Introduction to Risk Communication-E2 Introduction to Risk Communication-E2		Affiliated department, Job title,Name Disaster Prevention Research Institute Associate Professor,SAMADDAR, Subhajyoti	
Group		Humanities and Social Sciences		Field(Classification) Pedagogy, Psychology and Sociology(Issues)	
Language		English		Old group Group A Number of credits 2	
Number of weekly time blocks		1		Class style Lecture Course offered year/period 2019 • Second semester	
Day/period		Wed.3		Target year Mainly 1st & 2nd year students Eligible students For all majors	
[Outline and Purpose of the Course]					
Modern society is characterized as risk society, particularly populations and communities vulnerable to natural hazards and environmental risk are increasing day by day. Effective risk communication is critical for increasing risk awareness and encouraging preparedness among the community members. However, the risk managers, city government authorities, environmental risk regulators are often challenged how to better communicate risk to the public. Because risk is socially and culturally constructed . The purpose of this course is to explain how planners and practitioners can design and implement communication plans related to environmental and disaster risks.					
[Course Goals]					
The primary objectives of the course are as follows: 1. To introduce basic knowledge on risk communication for effective disaster and environmental risk management. 2. To introduce the theories and approaches of risk communication . 3.To find out risk communication principles and strategies. 4. To introduce methods, tools and techniques for effective risk governance and public participation. 5. To gain practical knowledge on risk communication strategies from some best practices (Using selected case studies on disaster and environmental risk).					
[Course Schedule and Contents]					
Week 1: Why to Study Risk Communication? Principles of Risk Communication. Week 2: Risk: Hazards , Exposure and Vulnerability. Week 3: Factors Affecting Effective Risk Communication: Organization, Emotional and Social. Week 4 to 6 : Approaches of Risk Communication: Cultural Theory of Risk ; Cognitive and Heuristic Approach ; Mental Model and Social Amplification of Risk. Week 7: Analyze the Audience: Minds, Attitude and Behavior of Risk Preparedness. Week 8: The Process of Developing Effective Risk Communication Message. Week 9: Emergency Early Warning and Evacuation Behavior. Week 10: Risk Communication Channels and Techniques Week 11: Preparing Risk Communication Plan. Week 12: Response to Risk Communication: Household Disaster Preparedness. Week 13: Implementing Risk Communication Plan : Week 14: Successful Risk Communication Strategies and Systems: Learning from Best Practices. Week 15: Final Presentations. Week 16 : Feedbacks and Presentations.					
----- Continue to Introduction to Risk Communication-E2(2) ↓ ↓					

Introduction to Risk Communication-E2(2)	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Assignment 2 (30 X 2 = 60 points) Presentation 1 (40 points)	
[Textbook]	
Handouts will be distributed by the instructor if necessary.	
[Reference book, etc.]	
(Reference book) Risk Communication: A Handbook for Communicating Environmental, Safety, and Health Risks 『Regina E. Lundgren, Andrea H. McMakin』	
[Regarding studies out of class (preparation and review)]	
- prepare and review class contents, reading textbooks. - complete short assignments on a regular basis.	
[Others (office hour, etc.)]	
Students who want to talk to the instructor must make arrangements in advance by email.	

Lecture code: H718001

Course numbering		U-LAS04 20035 LE45			
Course title <English>	Introduction to Society and Community Studies-E2		Affiliated department, Job title,Name	Disaster Prevention Research Institute Associate Professor,SAMADDAR, Subhajyoti	
	Introduction to Society and Community Studies-E2				
Group	Humanities and Social Sciences		Field(Classification)	Pedagogy, Psychology and Sociology(Issues)	
Language	English		Old group	Group A	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Wed.2		Target year	Mainly 1st & 2nd year students	Eligible students For all majors
[Outline and Purpose of the Course]					
This course offers an introduction to the basic nature of society and community and their impact on individual's mind, behavior and thought process. This course focuses on how society and community impact and influence individual motivation, attitude, perception and actions. Further, the focus will be placed on collection action, participatory process, community networks in order to understand how decisions are collectively made in society and what are the factors that influence the decision making process.					
[Course Goals]					
To understand conceptual and theoretical understanding of the society, community and culture and their role shaping individual attitude, perceptions and actions. To understand the nature of social groups, organizations, social intuitions and their importance for individuals and society. To understand how decisions are made in a society, who make and influence the decision making process and how. Further the focus will be placed on how all sections and individuals of a society and community can be involved in the collective decision making process.					
[Course Schedule and Contents]					
Week 1: An introduction to Society and Community Studies. (Week 1) Week 2 to 3 : Basic ideas - Society, Culture, Social Institution, Social Groups, Social Interactions , Socialization - - Theories of Self Development. (Week 2 to 3). Week 3: Community and Sense of Community (Week 4) Week 4: Community of Practice Week 5: Community Participation #8211 Process and Outcomes: Part 1 Week 6: Community Participation #8211 Process and Outcome : Part 2. Week 7: Social Capital and Collective Action. Week 8: Social Networks: Structure and Functions Week 9: Social Trust: Definition, Measurement and Roles Week 10: Mind, Self and Society . Week 11 : Collaborative Knowledge Development : Ideas and Tools. Week 12 : Cultural Impact on Decision Making Process. Week 13 : Collective Action Week 14 : Social Change Week 15 : Final Presentation Week 16 : Feedback					
----- Continue to Introduction to Society and Community Studies-E2(2) ↓ ↓ ↓					

Introduction to Society and Community Studies-E2(2)	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Assignment 2: (25 X 2 = 50 Points). Group Discussion 1 : (20 Points) Presentation 1 : (30 points)	
[Textbook]	
Handouts will be distributed by the instructor if necessary.	
[Regarding studies out of class (preparation and review)]	
- prepare and review class contents, reading textbooks. - complete short assignments .	
[Others (office hour, etc.)]	

Lecture code: H734001

Course numbering		U-LAS04 20039 LE45			
Course title <English>	Introduction to Ritual Studies-E2 Introduction to Ritual Studies-E2		Affiliated department, Job title,Name	Disaster Prevention Research Institute Senior Lecturer,LAHOURNAT, Florence	
Group	Humanities and Social Sciences	Field(Classification)	Pedagogy, Psychology and Sociology(Issues)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • Second semester
Day/period	Tue.4	Target year	Mainly 1st & 2nd year students	Eligible students	For all majors
[Outline and Purpose of the Course]					
<p>This course provides an introduction to the field of ritual studies. Exploring the core questions of the nature and functions of rituals, we will examine different types of rituals that humans create and participate in, as well as their meaning and significance, in both secular and sacred contexts. This course will present a number of ritual genres, as well as the theories and methods used to record and study them.</p>					
[Course Goals]					
<p>There are 3 main objectives for this class. First students will gain an understanding of the notion of rituals, their meanings and social functions, the scope of ritual studies, as well as an awareness of the wide array of rituals that humans participate in. Second, they will acquire a working knowledge of ritual theory and of the main categories of rituals and their structure. Third, the course will help students become more comfortable formulating thoughts and opinions on a specific topic.</p>					
[Course Schedule and Contents]					
<p>This is a lecture-type class with an interactive component. Each session will include a lecture part and followed or interspersed with discussions based on the lecture content and this week's readings.</p> <ol style="list-style-type: none"> 1- Orientation and overview 2- Defining and delimiting the notion of ritual 3- Studying rituals 4- Classifications of rituals 5- Ritual theory: how they work, what they do (P.1) 6- Ritual theory: how they work, what they do (P.2) 7- Group work session 8- Rituals in magic and religion (P.1) 9- Rituals in magic and religion (P.2) 10- Rites of passage 11- Rituals of life and death 12- Other secular rituals 13- Preparation for final presentations 14- Final presentations <p>Note: <u>this schedule may be subject to change. The detailed definitive schedule will be handed out during the</u> Continue to Introduction to Ritual Studies-E2(2) ↓ ↓ ↓</p>					

Introduction to Ritual Studies-E2(2)
first class.
[Class requirement]
There are no specific requirements for taking this seminar. However, students must be willing to prepare each session by completing the weekly readings and assigned tasks, and to participate actively in class.
[Method, Point of view, and Attainment levels of Evaluation]
Evaluation will be based on class attendance and active participation (60%), a group works and presentations (20%) and final project (20%).
Active participation means actively listening and engaging with the class content, participating during discussions and group work, and contributing to the class by sharing opinions, experiences and reflections. Students absent 3 times or more will fail this class.
Tardiness of 15 minutes or more will be treated as absence. Systematic tardiness and leaving the class early will also result in a decrease of the final grade.
[Textbook]
There is no textbook for this seminar. Weekly readings will be available for download. Printing and preparing the material is the responsibility of the student.
[Reference book, etc.]
(Reference book) Introduced during class
[Regarding studies out of class (preparation and review)]
Students are required to prepare for each class by completing the weekly readings and assigned tasks and should expect to spend 2 to 3 hours weekly reviewing and preparing for class.
[Others (office hour, etc.)]
- This is a lecture-type class with an interactive component. It will be conducted in English. All readings will also be in English.
- The capacity of the class will be limited to 25 students to ensure the interactive aspect of it.
- As stated in the evaluation section, students are expected to engage actively during class.
- Office hour is after class or by appointment.

Lecture code: H733001

Course numbering		U-LAS04 20040 LE45			
Course title <English>	Disaster and Culture-E2 Disaster and Culture-E2		Affiliated department, Job title,Name	Disaster Prevention Research Institute Senior Lecturer,LAHOURNAT, Florence	
Group	Humanities and Social Sciences	Field(Classification)	Pedagogy, Psychology and Sociology(Issues)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • Second semester
Day/period	Tue.2	Target year	Mainly 1st & 2nd year students	Eligible students	For all majors
[Outline and Purpose of the Course]					
<p>This course proposes to explore disaster through the filter of culture and how disasters and culture relate from an anthropological perspective. It explores how disasters emerge from the combination of natural and socio-cultural forces and how humans conceive and deal with disasters.</p> <p>Posing disasters as multidimensional socio-cultural processes, we will focus on how humans perceive and conceive, interpret and represent disasters outside the realm of “hard science”, from a socio-cultural angle. We will address issues such as the perception and interpretation of disaster, vulnerability and resilience, cultural competence in disaster context, as well as the cultural expressions of disaster phenomena, how culture shapes our perceptions, interpretations, and on the reverse, how disaster can also shape culture.</p>					
[Course Goals]					
<p>There are 3 main objectives for this class.</p> <p>First, students will gain an understanding of the notion of culture and how it plays out in disaster contexts, and opportunities to reflect on various cultural expressions and interpretations of disasters. Second, they will acquire a working command of concepts such as culture, risk, vulnerability, resilience, and social capital and a sense of what a socio-cultural anthropological approach is. Third, it will encourage students to think from a variety of perspectives and become more comfortable formulating thoughts and opinions on a specific topic.</p>					
[Course Schedule and Contents]					
<p>This is a lecture-type class with an interactive component.</p> <p>Each session will include a lecture part and followed or interspersed by discussion based on the lecture content and this week's readings.</p> <ol style="list-style-type: none"> 1- Orientation and overview 2- Culture and disaster (P. 1) 3- Culture and disaster (P. 2) 4- The perception of risk 5- Group discussion 6- Vulnerabilities and resilience 7- Cultural interpretations - the folklore of disaster 8- Cultural representations of disaster 9- Religion and disaster 10- Group discussion 11- Social networks in disaster contexts 12- Cultural competence in disaster 13- Cultural heritage and disaster 14- Final presentation or group work 					
Continue to Disaster and Culture-E2(2) ↓ ↓ ↓					

Disaster and Culture-E2(2)
<p>Note: this schedule may be subject to change. The detailed definitive schedule will be handed out during the first class.</p>
[Class requirement]
<p>There are no specific requirements for taking this seminar. However, students must be willing to prepare each session by completing the weekly readings and assigned tasks, and to participate actively in class.</p>
[Method, Point of view, and Attainment levels of Evaluation]
<p>Evaluation will be based on class attendance and active participation (60%), a mid-term group work or presentation (20%) and final group or individual presentations (20%).</p> <p>Active participation means actively listening and engaging with the class content, participating during discussions and group work, and contributing to the class by sharing opinions, experiences and reflections. It also means taking notes and reviewing them each week, since each class will start with a quick recap of the previous week done by a student.</p> <p>Students absent 3 times or more will fail this class. Tardiness (by 15 minutes or more) will be treated as absence. Systematic tardiness and/or unexplained early departures will greatly reduce your attendance and participation grade.</p>
[Textbook]
<p>There is no textbook for this class. Weekly readings and documents will be available for download. Printing and preparing the material is the responsibility of the student.</p>
[Reference book, etc.]
<p>(Reference book) Introduced during class</p>
[Regarding studies out of class (preparation and review)]
<p>Students are required to prepare for each class by completing the weekly readings and assigned tasks. They should expect 2 to 3 hours/week of work outside the classroom for review and preparation.</p>
[Others (office hour, etc.)]
<p>- This is a lecture-type class with an interactive component. It will be conducted in English. All readings will also be in English.</p> <p>- The capacity of the class will be limited to 25 students to ensure the interactive aspect of it.</p> <p>- As stated in the evaluation section, students are expected to engage actively during class.</p> <p>- Office hour is after class or by appointment.</p>

Lecture code: H598001

Course numbering		U-LAS05 10002 LE40			
Course title <English>	Cultural Anthropology I-E2 Cultural Anthropology I-E2		Affiliated department, Job title,Name	Center for Southeast Asian Studies Associate Professor,LOPEZ, Mario Ivan	
Group	Humanities and Social Sciences	Field(Classification)	Regions and Cultures(Foundations)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • First semester
Day/period	Mon.3	Target year	Mainly 1st & 2nd year students	Eligible students	For all majors
[Outline and Purpose of the Course]					
Anthropology is the comparative study of culture and human societies and examines the general principles of social and cultural life. This course offers an introduction to the discipline of anthropology and its practical relevance to understanding societies. It introduces the different ways we can examine human societies and understand exchange processes, kinship and family, marriage, culture, nature, gender, nation building, and religion and ritual. Each week will consist of a brief lecture of 30~40 minutes based on class notes and readings followed by a class discussion and group exercises.					
[Course Goals]					
The main purpose of the course is to give students a critical introduction and understanding to cultural diversity and processes of change within and between societies. The course provides students with some basic tools that can help students to recognize the preconceptions and assumptions of their own social and cultural environments. This course is open to anyone who is interested in societies and cultures, and willing to proactively participate in discussions over the duration of the course.					
[Course Schedule and Contents]					
Week 1. Overview Week 2. Social Theory, Culture and Cultural Relativity Week 3. Kinship and Family Week 4. Marriage Week 5. The Sharing Economy Week 6. Human Societies and Nature (1) Week 7. Human Societies and Nature (2) Week 8. Gender (1) Week 9. Gender (2) Week 10 Identifying “Others” Week 11. Community Building Week 12. Nation Building and Nationalism Week 13. Religion and Ritual Week 14. The Secular and Anthropology Week 15. Recap					
----- Continue to Cultural Anthropology I-E2(2) ↓ ↓ ↓					

Cultural Anthropology I-E2(2)	
[Class requirement]	
Students should be able to participate in discussions, do readings, and submit short homework pieces each week.	
[Method, Point of view, and Attainment levels of Evaluation]	
The final semester grade will be decided upon by participation in class lectures and attendance (65%) and a written essay (35%) to be submitted at the end of the course.	
[Textbook]	
Not used Materials will be prepared for use in the class. Most weeks have pre-prepared class notes and a main text to read.	
[Reference book, etc.]	
(Reference book) Introduced during class	
[Regarding studies out of class (preparation and review)]	
Students will have readings prepared for each week along with class notes.	
[Others (office hour, etc.)]	
Office hours are Mondays 4th period. This course restricts student enrollment by 25.	

Lecture code: H598002

Course numbering		U-LAS05 10002 LE40			
Course title <English>	Cultural Anthropology I-E2 Cultural Anthropology I-E2		Affiliated department, Job title,Name	Center for Southeast Asian Studies Associate Professor,LOPEZ, Mario Ivan	
Group	Humanities and Social Sciences	Field(Classification)	Regions and Cultures(Foundations)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • Second semester
Day/period	Mon.3	Target year	Mainly 1st & 2nd year students	Eligible students	For all majors
[Outline and Purpose of the Course]					
This course provides a critical introduction to what it means to be a person as experienced through their gender. This course will explore the various social and cultural contexts of gender through examples from the 20th/21st century Asia-Pacific region. We will draw on comparative material from other places around the globe as well.					
[Course Goals]					
The broad goal of this course is to introduce to students to the broad diversity of gender experiences available in today's highly globalized societies. In particular, the course will give students an analytical framework to contextualize this gender diversity and its continual transformation over the past couple of centuries to situate their own experiences. At the end of the course, students will have increased ability to give balanced consideration to the expression of individual gendered points of view and sexual orientation in different cultural contexts.					
[Course Schedule and Contents]					
Week 1. Introduction and Overview of the Course Week 2. Mapping Gender Week 3. Fluid Gender and Sexualities Week 4. Plural Co-existence in Southeast Asia (1) Week 5. Plural Co-existence in Southeast Asia (2) Week 6. Production and Reproduction within the Household: Japan Week 7. The Role of National Discourses in the Construction of Gender: Japan Week 8. The emotional commons: Labor migration and the globalization of care work (1) Week 9. The emotional commons: Labor migration and the globalization of care work (1) Week 10. The Gender See-saw: Inequality/Equality (1) Week 11 The Gender See-saw Inequality/Equality (2) Week 12. "Naturalizing" Bodies Week 13. Body Imaging (1): The Construction of Masculinity Week 14. Final Group Discussions Week 15. Re-cap					
----- Continue to Cultural Anthropology I-E2(2) ↓ ↓ ↓					

Cultural Anthropology I-E2(2)	
[Class requirement]	
Students should be able to participate in discussions, do readings (required for participation), and submit short homework pieces each week.	
[Method, Point of view, and Attainment levels of Evaluation]	
The final semester grade will be decided upon by participation in class lectures and attendance (65%) and a written essay (35%) to be submitted at the end of the course.	
[Textbook]	
Not used Articles and Audiovisual materials will be provided for this course and available to access from the first week.	
[Reference book, etc.]	
(Reference book) Introduced during class	
[Regarding studies out of class (preparation and review)]	
Each week will consist of materials to be prepared in advance for class discussion. Students are responsible for printing materials.	
[Others (office hour, etc.)]	
Office hours are on Mondays and Tuesday, 4th period. This course restricts student enrollment by 25.	

Lecture code: H598003

Course numbering		U-LAS05 10002 LE40			
Course title <English>	Cultural Anthropology I-E2 Cultural Anthropology I-E2		Affiliated department, Job title,Name	Graduate School of Human and Environmental Studies Senior Lecturer, COKER, CAITLIN CHRISTINE	
Group	Humanities and Social Sciences	Field(Classification)	Regions and Cultures(Foundations)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • First semester
Day/period	Thu.2	Target year	All students	Eligible students	For all majors
[Outline and Purpose of the Course]					
This course will introduce students to the central topics, concepts and methods of cultural anthropology, which can be broadly defined as the study of human cultures and societies. It will survey the key topics in contemporary cultural anthropology and offer insights into how the seemingly “common-sense” aspects of people’s lives, as well as their norms and rules, can be informed by the social contexts and practices of which they consider themselves a part. It draws on ethnographic examples and case studies from various societies, including the lecturer's country-of-origin the USA, but contemporary Japan will be central in order to provide students with an understanding of where they are living.					
[Course Goals]					
Anthropology involves a way of seeing, a frame of reference for interpreting people's behavior in all societies. The first goal of this class is for the student to be able to consider topics from this anthropological perspective. This also means that the student will develop an acceptance and appreciation of people informed by different cultures and maintain a non-judgemental attitude. Additionally, the student will also be expected to understand social relationships in their own experiences in the cultural context in which they are living in the present, namely contemporary Japan.					
[Course Schedule and Contents]					
Week 1: Introduction to Anthropology Week 2: What is Culture? Week 3: Ethnographic Research Week 4: Language Week 5: Race and Racism Week 6: Ethnicity and Nationalism Week 7: Gender Week 8: Sexuality; Submission of Report Proposal Week 9: Marriage and Family Week 10: Class and Inequality Week 11: Religion and Cosmology Week 12: Ritual and Trance Week 13: Art Week 14: Peer Review of Reports Week 15: Discussion and Submission of Final Report Week 16: Feedback					
----- Continue to Cultural Anthropology I-E2(2) ↓ ↓ ↓					

Cultural Anthropology I-E2(2)	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Students grades' will be made up of the following assessment: Discussion Contributions (20%), Weekly Comment Papers (30%), Final Report (50%)	
[Textbook]	
Not used. Lecture notes and readings for homework will be distributed in class and on the internet.	
[Reference book, etc.]	
(Reference book) Introduced during class.	
[Regarding studies out of class (preparation and review)]	
Preparation varies by class, but students are expected to read the assigned readings before class and complete assignments on time.	
[Others (office hour, etc.)]	
Meetings in my office are available through appointment: please email me at caitlincc@gmail.com.	

Lecture code: H598004

Course numbering		U-LAS05 10002 LE40			
Course title <English>	Cultural Anthropology I-E2 Cultural Anthropology I-E2		Affiliated department, Job title,Name	Graduate School of Human and Environmental Studies Senior Lecturer,COKER, CAITLIN CHRISTINE	
Group	Humanities and Social Sciences	Field(Classification)	Regions and Cultures(Foundations)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • First semester
Day/period	Thu.4	Target year	All students	Eligible students	For all majors
[Outline and Purpose of the Course]					
This course will introduce students to the central topics, concepts and methods of cultural anthropology, which can be broadly defined as the study of human cultures and societies. It will survey the key topics in contemporary cultural anthropology and offer insights into how the seemingly “common-sense” aspects of people’s lives, as well as their norms and rules, can be informed by the social contexts and practices of which they consider themselves a part. It draws on ethnographic examples and case studies from various societies, including the lecturer's country-of-origin the USA, but contemporary Japan will be central in order to provide students with an understanding of where they are living.					
[Course Goals]					
Anthropology involves a way of seeing, a frame of reference for interpreting people's behavior in all societies. The first goal of this class is for the student to be able to consider topics from this anthropological perspective. This also means that the student will develop an acceptance and appreciation of people informed by different cultures and maintain a non-judgemental attitude. Additionally, the student will also be expected to understand social relationships in their own experiences in the cultural context in which they are living in the present, namely contemporary Japan.					
[Course Schedule and Contents]					
Week 1: Introduction to Anthropology Week 2: What is Culture? Week 3: Ethnographic Research Week 4: Language Week 5: Race and Racism Week 6: Ethnicity and Nationalism Week 7: Gender Week 8: Sexuality; Submission of Report Proposal Week 9: Marriage and Family Week 10: Class and Inequality Week 11: Religion and Cosmology Week 12: Ritual and Trance Week 13: Art Week 14: Peer Review of Reports Week 15: Discussion and Submission of Final Report Week 16: Feedback					
----- Continue to Cultural Anthropology I-E2(2) ↓ ↓ ↓					

Cultural Anthropology I-E2(2)	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Students grades' will be made up of the following assessment: Discussion Contributions (20%), Weekly Comment Papers (30%), Final Report (50%)	
[Textbook]	
Not used. Lecutre notes and readings for homework will be distributed in class and on the internet.	
[Reference book, etc.]	
(Reference book) Introduced during class.	
[Regarding studies out of class (preparation and review)]	
Preparation varies by class, but students are expected to read the assigned readings before class and complete assignments on time.	
[Others (office hour, etc.)]	
Meetings in my office are available through appointment: please email me at caitlincc@gmail.com.	

Lecture code: H802002

Course numbering		U-LAS05 10008 LE39			
Course title <English>	Human Geography-E2 Human Geography-E2		Affiliated department, Job title,Name	Graduate School of Global Environmental Studies Senior Lecturer,BAARS, ROGER CLOUD	
Group	Humanities and Social Sciences	Field(Classification)	Regions and Cultures(Foundations)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • First semester
Day/period	Thu.2	Target year	Mainly 1st & 2nd year students	Eligible students	For all majors
[Outline and Purpose of the Course]					
The course investigates the spatial organisation of human action and the relationships between society and environment and offers a critical exploration of the interactions between people, place and space through the core themes of globalisation, development, urbanisation, diversity and inequality. The course explores the ways in which both local and global forces continuously shape socio-cultural and economic landscapes.					
[Course Goals]					
The course equips students with basic concepts in human geography required to understand, interpret and synthesise information on the world around us. Students develop the ability to use geography and spatial perspectives to think creatively and critically about human interactions with the environment.					
[Course Schedule and Contents]					
Week 1: What is Human Geography? A Brief Overview Week 2: Foundations I - Basic Concepts Week 3: Foundations II - Advanced Concepts Week 4: Biogeography Week 5: Cultural Geography Week 6: Development Geography Week 7: Economic Geography Week 8: Environmental Geography Week 9: Historical Geography Week 10: Political Geography Week 11: Population Geography Week 12: Urban/Rural Geography Week 13: Final Presentations I Week 14: Final Presentations II					
Course Schedule might change					
[Class requirement]					
You are curious to explore the value of human geography in understanding the world around you.					
Continue to Human Geography-E2(2) ↓ ↓ ↓					

Human Geography-E2(2)
[Method, Point of view, and Attainment levels of Evaluation]
20% Attendance and in-class discussion and participation, 40% Photo Essay (1500 words), 40% Group Presentation (10-15 min)
[Textbook]
Required readings and materials will be distributed in class.
[Reference book, etc.]
(Reference book) Introduced during class
[Regarding studies out of class (preparation and review)]
Students are expected to prepare for each class and be ready to discuss the weeks topics in small groups. Preparatory materials include academic readings, news pieces and online media materials.
[Others (office hour, etc.)]
Please email the instructor: baars.rogercloud.6a@kyoto-u.ac.jp

Lecture code: H802003

Course numbering		U-LAS05 10008 LE39			
Course title <English>	Human Geography-E2 Human Geography-E2		Affiliated department, Job title,Name	Graduate School of Global Environmental Studies Senior Lecturer,BAARS, ROGER CLOUD	
Group	Humanities and Social Sciences	Field(Classification)	Regions and Cultures(Foundations)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • Second semester
Day/period	Thu.2	Target year	Mainly 1st & 2nd year students	Eligible students	For all majors
[Outline and Purpose of the Course]					
The course investigates the spatial organisation of human action and the relationships between society and environment and offers a critical exploration of the interactions between people, place and space through the core themes of globalisation, development, urbanisation, diversity and inequality. The course explores the ways in which both local and global forces continuously shape socio-cultural and economic landscapes.					
[Course Goals]					
The course equips students with basic concepts in human geography required to understand, interpret and synthesise information on the world around us. Students develop the ability to use geography and spatial perspectives to think creatively and critically about human interactions with the environment.					
[Course Schedule and Contents]					
Week 1: What is Human Geography? A Brief Overview Week 2: Foundations I - Basic Concepts Week 3: Foundations II - Advanced Concepts Week 4: Biogeography Week 5: Cultural Geography Week 6: Development Geography Week 7: Economic Geography Week 8: Environmental Geography Week 9: Historical Geography Week 10: Political Geography Week 11: Population Geography Week 12: Urban/Rural Geography Week 13: Final Presentations I Week 14: Final Presentations II					
Course Schedule might change					
[Class requirement]					
You are curious to explore the value of human geography in understanding the world around you.					
----- Continue to Human Geography-E2(2) ↓ ↓ ↓					

Human Geography-E2(2)
[Method, Point of view, and Attainment levels of Evaluation]
20% Attendance and in-class discussion and participation, 40% Photo Essay (1500 words), 40% Group Presentation (10-15 min)
[Textbook]
Required readings and materials will be distributed in class.
[Reference book, etc.]
(Reference book) Introduced during class
[Regarding studies out of class (preparation and review)]
Students are expected to prepare for each class and be ready to discuss the weeks topics in small groups. Preparatory materials include academic readings, news pieces and online media materials.
[Others (office hour, etc.)]
Please email the instructor: baars.rogercloud.6a@kyoto-u.ac.jp

Lecture code: H815001

Course numbering					
Course title <English>		Topics in Cultural Anthropology I-E2 Topics in Cultural Anthropology I-E2		Affiliated department, Job title,Name	Graduate School of Human and Environmental Studies Senior Lecturer,COKER, CAITLIN CHRISTINE
Group		Humanities and Social Sciences	Field(Classification)	Regions and Cultures(Issues)	
Language		English	Old group	Group A	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Thu.3	Target year	All students	Eligible students	For all majors
[Outline and Purpose of the Course]					
This course will focus on the topic of human bodies in cultural anthropology. It will introduce how physical experience has been theorized and researched ethnographically. While the body is the foundation of human experience and thus the starting point for the formation of society and culture, this fact has been a difficult concept for the social sciences to grasp empirically. In the first 7 weeks, this course will introduce the multitude of anthropological approaches and consider the relationships between these approaches and evaluate them critically. In the last 7 weeks of lectures, it will present representative anthropological studies of the body through a variety of body-related phenomena as they occur in different cultural contexts.					
[Course Goals]					
The main goal of this class is for students to deepen their understanding of how physical experience shapes people's perspectives and experience and thus their society and ontology. Through this understanding, they will be expected to consider the complicated nature of bodily experience and the different social pressures and cultural contexts on which it is based. For this purpose, the student will be asked to imagine and "try-on" different bodily perspectives from different societies by also re-evaluating physical experience in their everyday life.					
[Course Schedule and Contents]					
The Body in Cultural Anthropology					
Week 1: General Introduction: What is a body? What is the Anthropology of the Body? <<Section 1: Theoretical Approaches >>					
Week 2: Body in Practice and Habitus					
Week 3: Body as Symbol under Social Control					
Week 4: The Defiant and Creative Body					
Week 5: Embodiment					
Week 6: Affect					
Week 7: Short discussion and Mid-term Test <<Section 2: Hot Topics in Anthropology>>					
Week 8: Body in the Mundane and Daily Affects					
Week 9: Bodily Ornamentation and Modifications					
Week 10: Body in Ritual and Liminality					
Week 11: Body in Performance and Dance					
Week 12: Body in Possession and Trance					
Week 13: Body in Illness and Medical Care					
Week 14: Body in Recreation and Sex					
Continue to Topics in Cultural Anthropology I-E2(2) ↓ ↓					

Topics in Cultural Anthropology I-E2(2)
Week 15: Final Examination
[Class requirement]
None
[Method, Point of view, and Attainment levels of Evaluation]
Students grades' will be made up of the following assessment: Discussion Contributions and Weekly Comment Papers (20%), Mid-term Test (30%), Final Examination (50%)
[Textbook]
Not used. Lecutre notes and readings for homework will be distributed in class and on the internet.
[Reference book, etc.]
(Reference book) Introduced during class.
[Regarding studies out of class (preparation and review)]
Preparation varies by class, but students are expected to read the assigned readings before class.
[Others (office hour, etc.)]
Meetings in my office are available through appointment: please email me at caitlincc@gmail.com.

Lecture code: H815002

Course numbering					
Course title <English>	Topics in Cultural Anthropology I-E2 Topics in Cultural Anthropology I-E2		Affiliated department, Job title,Name	Graduate School of Human and Environmental Studies Senior Lecturer,COKER, CAITLIN CHRISTINE	
Group	Humanities and Social Sciences	Field(Classification)	Regions and Cultures(Issues)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • Second semester
Day/period	Thu.4	Target year	All students	Eligible students	For all majors
[Outline and Purpose of the Course]					
This course will focus on the topic of human bodies in cultural anthropology. It will introduce how physical experience has been theorized and researched ethnographically. While the body is the foundation of human experience and thus the starting point for the formation of society and culture, this fact has been a difficult concept for the social sciences to grasp empirically. In the first 7 weeks, this course will introduce the multitude of anthropological approaches and consider the relationships between these approaches and evaluate them critically. In the last 7 weeks of lectures, it will present representative anthropological studies of the body through a variety of body-related phenomena as they occur in different cultural contexts.					
[Course Goals]					
The main goal of this class is for students to deepen their understanding of how physical experience shapes people's perspectives and experience and thus their society and ontology. Through this understanding, they will be expected to consider the complicated nature of bodily experience and the different social pressures and cultural contexts on which it is based. For this purpose, the student will be asked to imagine and "try-on" different bodily perspectives from different societies by also re-evaluating physical experience in their everyday life.					
[Course Schedule and Contents]					
The Body in Cultural Anthropology					
Week 1: General Introduction: What is a body? What is the Anthropology of the Body? <<Section 1: Theoretical Approaches >>					
Week 2: Body in Practice and Habitus					
Week 3: Body as Symbol under Social Control					
Week 4: The Defiant and Creative Body					
Week 5: Embodiment					
Week 6: Affect					
Week 7: Short discussion and Mid-term Test <<Section 2: Hot Topics in Anthropology>>					
Week 8: Body in the Mundane and Daily Affects					
Week 9: Bodily Ornamentation and Modifications					
Week 10: Body in Ritual and Liminality					
Week 11: Body in Performance and Dance					
Week 12: Body in Possession and Trance					
Week 13: Body in Illness and Medical Care					
Week 14: Body in Recreation and Sex					
Continue to Topics in Cultural Anthropology I-E2(2) ↓ ↓ ↓					

Topics in Cultural Anthropology I-E2(2)
Week 15: Final Examination
[Class requirement]
None
[Method, Point of view, and Attainment levels of Evaluation]
Students grades' will be made up of the following assessment: Discussion Contributions and Weekly Comment Papers (20%), Mid-term Test (30%), Final Examination (50%)
[Textbook]
Not used. Lecutre notes and readings for homework will be distributed in class and on the internet.
[Reference book, etc.]
(Reference book) Introduced during class.
[Regarding studies out of class (preparation and review)]
Preparation varies by class, but students are expected to read the assigned readings before class.
[Others (office hour, etc.)]
Meetings in my office are available through appointment: please email me at caitlincc@gmail.com.

Lecture code: H589001

Course numbering		U-LAS05 20006 LE40			
Course title <English>	Environmental Anthropology-E2 Environmental Anthropology-E2		Affiliated department, Job title,Name	Graduate School of Asian and African Area Studies Associate Professor,D'SOUZA, Rohan Ignatious	
Group	Humanities and Social Sciences	Field(Classification)	Regions and Cultures(Issues)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • First semester
Day/period	Fri.3	Target year	All students	Eligible students	For all majors
[Outline and Purpose of the Course]					
This course will introduce students to four defining anthropologically inspired frameworks that have been critical in exploring the many fraught relationships between Nature and Culture. These frameworks or ideological perspectives have in actual fact driven the field of ecological and environmental anthropology by sparking innumerable debates, discussions and sharp disagreements. The true weight of this scholarship, however, as this course will empathize and outline, lies not only in the empirically informed insights that have been generated over the years but the riveting theories that have helped us reflect on the Nature-Culture divide and overlap.					
[Course Goals]					
The Nature-Culture divide has been foundational in defining a range of philosophical and political attitudes. This course is intended to help navigate the complex theory laden understanding of how humans have interacted with and shaped their environments.					
[Course Schedule and Contents]					
Each class will comprise a 90 minute session; involving a lecture of 60 minutes and followed by a 30 minute interactive discussion in which student participation will be elicited through either group or individual presentations.					
Four themes will be covered:					
a) Cultural Ecology b) Socio-Biology c) Conservation Ecology d) Political Ecology					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
There will be a regular cycle of written submissions and feedback through class discussions and teacher evaluations. The idea is to develop a credible capacity for reading and writing amongst those who take up the course. Evaluations will be based on class presentations, writing assignments and tutorials.					
Continue to Environmental Anthropology-E2(2) ↓ ↓ ↓					

Environmental Anthropology-E2(2)
[Textbook]
Darrell P. Arnold (ed.) 『Traditions of Systems Theory: Major Figures and Contemporary Developments.』 (Routledge , 2013) ISBN:978-0415843898
[Reference book, etc.]
(Reference book)
R.Edward Grumbine 『Environmental Policy and Biodiversity 』 (Island Press, 1994) ISBN:978-1559632836
Tim Forsyth 『Critical Political Ecology』 (Routledge, 2003) ISBN:978-0415185639 ()
Libby Robin, Sverker Sorlin, Paul Warde (ed.) 『The Future of Nature 』 (Yale University Press, 2013) ISBN:978-0300184617
Noel Castree and Bruce Braun (ed), 『Social Nature: Theory, Practice and Politics.』 (Blackwell Publishing 2001) ISBN:978-0631215684
Relevant sections and chapters from the above books will be assigned as readings for the course. Other reading materials such as articles or short-write-ups may be included based on class discussions and interest.
[Regarding studies out of class (preparation and review)]
Students will be expected to have read at least five pages of pre-assigned reading, at the very minimum, before attending each class.
[Others (office hour, etc.)]
Students can contact me during office hours with prior appointment.


Lecture code: H599001

Course numbering		U-LAS05 20016 LE39			
Course title <English>	Topics in Human Geography VII-E2 (Population and Mobility)		Affiliated department, Job title, Name	Graduate School of Global Environmental Studies Associate Professor, SINGER JANE	
	Topics in Human Geography VII-E2 (Population and Mobility)				
Group	Humanities and Social Sciences		Field(Classification)	Regions and Cultures(Issues)	
Language	English		Old group	Group A	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Thu.3		Target year	Mainly 2nd year students	Eligible students For all majors
[Outline and Purpose of the Course]					
This course looks at global trends in population change and mobility, including population growth; declining and aging populations; displacement due to development, conflict or climate change; urban migration and international migration. By carrying out a simulated stakeholder negotiation exercise, students will understand the complex issues involved.					
[Course Goals]					
Students will be able to understand many of the complex causes and impacts of population trends and mobility. They will consider many of the ethical questions involved, such as government obligations for accepting refugees or those displaced by climate change, the roles of various stakeholders in assisting the displaced, and unequal impacts of development and globalization.					
[Course Schedule and Contents]					
Class 1: Introduction and overview. Demographic trends and population issues Class 2: Population booms vs. population declines and aging Class 3: Japan's rural crisis: Can we revitalize rural areas? Class 4-7: Displacement due to conflict, development and environmental change Class 8: Mid-term test; Migration: pull and push factors Class 9: Urban migration trends and issues Class 10-11: Globalization and transborder movement Class 12-14: Stakeholder analysis and stakeholder negotiation: preparation, implementation and feedback Note: The schedule may change slightly depending on class requirements					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
Evaluation will be based on class attendance and active participation (30%), short assignments and classroom exercises (30%), a mid-term test (25%) and participation in the final simulation exercise (15%).					
[Textbook]					
No text; required readings and lecture notes will be distributed in class.					
----- Continue to Topics in Human Geography VII-E2 (Population and Mobility)(2) ↓ ↓ ↓					

Topics in Human Geography VII-E2 (Population and Mobility)(2)

[Reference book, etc.]
(Reference book)
 Introduced during class

[Regarding studies out of class (preparation and review)]
 Students should download the Powerpoint file for the class lecture from the KULASIS class site before class. The midterm test will be based on the Powerpoint slide lectures. If students miss a class they should ask the instructor about class assignments.

[Others (office hour, etc.)]
 Please email the instructor to set up office appointment. You will be informed of the instructor's email address in class.



Lecture code: H813001

Course numbering					
Course title <English>	Contemporary Japanese Architecture-E2 Contemporary Japanese Architecture-E2		Affiliated department, Job title,Name	Graduate School of Engineering Professor,DANIELL, Thomas Charles	
Group	Humanities and Social Sciences	Field(Classification)	Regions and Cultures(Issues)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • First semester
Day/period	Tue.3	Target year	Mainly 1st year students	Eligible students	For all majors
[Outline and Purpose of the Course]					
This course comprises a broad survey of contemporary Japanese architecture from the 1960s until the early twenty-first century. The content will be organized around detailed examinations of the work of specific architects. There will be explanations of the principal characteristics of the various styles, key figures, and major buildings. We will also examine the social, cultural, environmental, artistic, technological, and political forces that have influenced the architecture.					
[Course Goals]					
By the end of this course, students will: Recognize the various styles, specific architects, dates, and locations of important buildings; Understand the climatic, technological, socioeconomic, and cultural factors that have shaped the architecture; Learn to employ basic methods of data collection in research; Assemble this research into a cogent structure.					
[Course Schedule and Contents]					
The course comprises an approximately chronological sequence of lectures. The topics and sequence may be altered during the semester.					
WK. 01 Metabolism / Arata Isozaki WK. 02 Kazuo Shinohara / Small Houses WK. 03 Hiroshi Hara / Architecture as Event WK. 04 Toyo Ito / The Bubble WK. 05 Itsuko Hasegawa / Women Architects WK. 06 Hiromi Fujii / Takefumi Aida WK. 07 Terunobu Fujimori / Street Observation WK. 08 Osamu Ishiyama / Basara WK. 09 Shin Takamatsu / Tadao Ando WK. 10 Kiyoshi Sey Takeyama / Criticism WK. 11 Kengo Kuma / Materials WK. 12 Kazuyo Sejima / Social Engagement WK. 13 The New Generation / After the Tsunami WK. 14 Review					
----- Continue to Contemporary Japanese Architecture-E2(2) ↓ ↓ ↓					

Contemporary Japanese Architecture-E2(2)	
[Class requirement]	
No prior knowledge is required. Students should be able to participate in discussions with their classmates in English.	
[Method, Point of view, and Attainment levels of Evaluation]	
Students must write three 1000-word essays, on the content of any three of the lectures. The essays should include at least two quotations from the main architects discussed, illustrated with images of the key projects discussed. Refer to information given in class, material contained in the readings, and other relevant sources. All images must have captions indicating the name of the building and architect, the location, and the year. All quotations and bibliographies must have footnotes in APA style. Students must visit one of the buildings from the list provided, and write a 1000-word illustrated essay about it. The essay must contain: Basic facts (name, architect, function, location, date); Explanation of the architectural ideas; Description of a walkthrough of the building, illustrated with the student's own photos. Grades are based on attendance (20 points), essays (60 points), and report (20 points). Students who are absent more than four times will not be credited. Students who submit work that is plagiarized or lacks proper attribution may fail.	
[Textbook]	
Thomas Daniell 『An Anatomy of Influence』 (AA Publications) ISBN:978-1907896965	
[Reference book, etc.]	
(Reference book)	
Thomas Daniell 『After the Crash: Architecture in Post-bubble Japan』 (Princeton Architectural Press) ISBN:978-1568987767	
[Regarding studies out of class (preparation and review)]	
Students are expected to have read the relevant chapter(s) in the main textbook before each class.	
[Others (office hour, etc.)]	
By appointment.	
	

Lecture code: H812001

Course numbering					
Course title <English>	Theory of Landscape Design-E2 :House and Gardens of Kyoto		Affiliated department, Job title,Name	Graduate School of Engineering Professor,DANIELL, Thomas Charles	
	Theory of Landscape Design-E2 :House and Gardens of Kyoto				
Group	Humanities and Social Sciences		Field(Classification)	Regions and Cultures(Issues)	
Language	English		Old group	Group A	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Tue.3		Target year	Mainly 1st year students	Eligible students For all majors
[Outline and Purpose of the Course]					
This course introduces a broad array of Kyoto's traditional houses and gardens from every period of the city's history. These range from summer villas to townhouses, from monumental Buddhist temples to insubstantial garden pavilions, from personal homes to traditional inns. All have their associated outdoor spaces, whether condensed courtyard gardens, picturesque stroll gardens, “dry landscape” stone gardens, or the “borrowed scenery” of distant landscapes.					
[Course Goals]					
By the end of this course, students will: Know the various styles, dates, and locations of important buildings and gardens; Understand the climatic and cultural factors that have shaped the buildings and gardens; Learn to employ basic methods of data collection in research; Assemble this research into a cogent structure.					
[Course Schedule and Contents]					
Lectures will alternate with site visits (held during regular class hours). Students are required to pay their own transport and entry costs for the site visits. The topics and sequence may be altered during the semester.					
WK. 01 Overview of historical styles: shinden, shoin, sukiya					
WK. 02 - 3 Aristocratic villas: Katsura, Shugakuin, Kinkaku-ji, Ginkaku-ji, Byodo-in, Jakko-in, etc.					
WK. 04 - 5 Private retreats: Kawai Kanjiro Memorial House, Shigemori Mirei Garden Museum, Shunki-an, Suisen-an, etc					
WK. 06 - 7 Temple residences: Nanzen-ji, Tofuku-ji, Ryogen-in, Kanchi-in, Shoren-in, Ninna-ji, Takaosan Jingo-ji, etc					
WK. 08 - 9 Traditional townhouses: Kinpyo, Kinmata, Inakatei, Iori Sujiya-cho, Iori Zaimoku-cho, Iori Minoya-cho, etc					
WK. 10 - 11 Traditional inns: Hiiragiya, Yoshida Sanso, Gion Hatanaka, Rangetsu, Jijuden Guesthouse Kyoto, Momijiya, Miyamaso, etc					
WK. 12 - 13 Tea houses: Urasenke, Kodai-ji, Toji-in, Koto-in, Murin-an, Juko-in, Shokado Garden Art Museum, etc					
WK. 14 Review					
Continue to Theory of Landscape Design-E2 :House and Gardens of Kyoto(2) ↓ ↓ ↓					

Theory of Landscape Design-E2 :House and Gardens of Kyoto(2)	
[Class requirement]	
No prior knowledge is required. Students should be able to participate in discussions with their classmates in English.	
[Method, Point of view, and Attainment levels of Evaluation]	
Students must write four 1000-word essays about any four of the site visits, illustrated with the student's own photos. All images must have captions explaining what is being shown. Discuss the history, style, and use of the building and any related garden spaces. Refer to information given in class, material contained in the readings, and other relevant sources. Give footnotes in the APA style, and a complete bibliography of cited works. Grades are based on attendance (20 points) and submitted assignments (80 points). Students who are absent for more than four lectures will not be credited. Students who miss more than two site visits will not be credited. Students who submit work that is plagiarized or lacks proper attribution may fail.	
[Textbook]	
Thomas Daniell 『Houses and Gardens of Kyoto』 (Tuttle) ISBN:978-4805314715	
[Reference book, etc.]	
(Reference book)	
Kazuo Nishi 『What is Japanese Architecture?』 (Kodansha) ISBN:978-1568364124	
[Regarding studies out of class (preparation and review)]	
Students are expected to have read the relevant chapter(s) in the main textbook before each class.	
[Others (office hour, etc.)]	
By appointment.	
	

Lecture code: H591001

Course numbering		U-LAS05 20038 LE31			
Course title <English>	Introduction to Globalization I-E2 Introduction to Globalization I-E2		Affiliated department, Job title,Name	Center for Southeast Asian Studies Associate Professor,LOPEZ, Mario Ivan	
Group	Humanities and Social Sciences	Field(Classification)	Regions and Cultures(Issues)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • First semester
Day/period	Tue.3	Target year	Mainly 1st & 2nd year students	Eligible students	For all majors
[Outline and Purpose of the Course]					
This course introduces students to some core processes that underlie present day globalization. This is a seminar based course and will act as a stepping stone for students to learn and explore it what ways different aspects on globalization play out in Asia-pacific, Southeast Asia and other regions in the world.					
[Course Goals]					
Each week will consist of a brief lecture based on readings (and some class notes) followed by a class discussion and group exercises. The main goal of the course is to give students a critical introduction to the way global processes play out in the domains of the economy, ecology, politics, and society. Students will receive a grounding on the various ways in which global issues affect everyday life in the present and future and ask them to think about the different ways we measure them.					
[Course Schedule and Contents]					
Week 1. Overview Week 2. The Politics of Enough Week 3. The Limits of Growth Week 4. The De-growth argument Week 5. Viewing Growth through GDP Week 6. The Rise of Neoliberal Economies Week 7. Financial Crises Week 8. Prosperity as an Obtainable Goal? Week 9. Sustainable Humanosphere: Assessing the Potentiality of Global Regions Week 10. Measuring Global Conditions: Global Indicators Week 11. Measuring Potentiality for the 21st Century Week 12. Producing Indexes to Monitor Global Change (1) Week 13. Producing Indexes to Monitor Global Change (2) Week 14: Group Presentations Week 15. Recap					
[Class requirement]					
Students should be able to participate in discussions, do readings, and submit short homework pieces					
----- Continue to Introduction to Globalization I-E2(2) ↓ ↓ ↓					

Introduction to Globalization I-E2(2)
[Method, Point of view, and Attainment levels of Evaluation]
The final semester grade will be decided upon by participation in class lectures participation (35%) and a written essay (30%) and group work (35%) through the course
[Textbook]
Not used
[Reference book, etc.]
(Reference book) Introduced during class
[Regarding studies out of class (preparation and review)]
Readings are prepared for each week along with class notes for some lectures.
[Others (office hour, etc.)]
This course restricts student enrollment by 25.

Lecture code: H592001

Course numbering		U-LAS05 20039 LE31			
Course title <English>	Introduction to Globalization II-E2 Introduction to Globalization II-E2		Affiliated department, Job title,Name	Center for Southeast Asian Studies Associate Professor,LOPEZ, Mario Ivan	
Group	Humanities and Social Sciences	Field(Classification)	Regions and Cultures(Issues)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • Second semester
Day/period	Tue.3	Target year	Mainly 1st & 2nd year students	Eligible students	For all majors
[Outline and Purpose of the Course]					
Human Societies are often characterized by their dynamic populations. These often include people who are born in one country but live and reside in another. This course introduces students to present day global movement and the different conditions of people who move and settle in other countries. This is a seminar based course and aims to help students learn and explore the ways human movement plays out Asia-pacific, Southeast Asia, and other regions in the world.					
[Course Goals]					
Each week will consist of a brief lecture based on readings (and some class notes) followed by a class discussion and group exercises. The main purpose is to give students a critical introduction to the way present day globalization processes affect the lives of migrants, immigrants and refugees and stimulate discussion on the human dimensions of movement.					
[Course Schedule and Contents]					
Week 1. Overview Week 2. Who is a Migrant? Week 3. Global Migration in the 21st Century Week 4. Statelessness: Causes and Consequences (1) Week 5. Statelessness: Causes and Consequences (2) Week 6. The International Refugee Regime Week 7. Media images of refugees and migrants (documentary screening) Week 8. Demonizing Discourses and Toxic Metaphors Week 9. Managing Migration (1): Singaporean Case Study Week 10. Managing Migration (1): Japanese Case Study Week 11. Caring for the Future: Highly Skilled Migrants Week 12. Integrating Global Care: Germany, Japan, Philippines, and Vietnam Week 13. Migrants: Winners or Losers from Migration? Week 14. Does Migration Adversely affect Host Societies? Week 15. Re-cap					
[Class requirement]					
Students should be able to participate in discussions, do readings and submit short homework pieces each week.					
----- Continue to Introduction to Globalization II-E2(2) ↓ ↓ ↓					

Introduction to Globalization II-E2(2)
[Method, Point of view, and Attainment levels of Evaluation]
The final semester grade will be decided upon by participation in class lectures and an online forum (35%), participation (including a group test) (35%) and a written essay (30%) to be submitted at the end of the course.
[Textbook]
Not used
[Reference book, etc.]
(Reference book) Introduced during class
[Regarding studies out of class (preparation and review)]
Each week will consist of materials to be prepared in advance for class discussion.
[Others (office hour, etc.)]
This course restricts student enrollment by 25.

Lecture code: H801001

Course numbering		U-LAS05 20040 LE31			
Course title <English>	Environmental Histories of South Asia-E2 Environmental Histories of South Asia-E2		Affiliated department, Job title, Name	Graduate School of Asian and African Area Studies Associate Professor, D'SOUZA, Rohan Ignatious	
Group	Humanities and Social Sciences	Field(Classification)	Regions and Cultures(Issues)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • Second semester
Day/period	Fri.3	Target year	All students	Eligible students	For all majors
[Outline and Purpose of the Course]					
This is designed as an introductory course that will familiarise students with several of the critical debates that have shaped environmental history writings on South Asia. The emphasis will be on rehearsing not only the distinct conceptual and theoretical claims but, significantly as well, survey the rich and complex socio-ecological worlds that have been revealed such writing on South Asia.					
[Course Goals]					
Given that the environmental question has become central to discussions about sustainability and climate change, this course will help students understand the unique histories of ecological change in South Asia. It will not only enable students to grasp the ruptural and often times dramatic environmental transformations that continue to shape contemporary South Asia but brings into relief the complicated pathways of modernity.					
[Course Schedule and Contents]					
Each class will comprise a 90 minute session; involving a lecture of 60 minutes and followed by a 30 minute interactive discussion in which student participation will also be elicited through either group or individual presentations. Four themes will be covered: a) The Colonial Watershed Thesis b) Continuity and Change c) Forest Protection, Hunting and Colonial Hydrology d) Conservation, environmental change and the Colonial State					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
There will be a regular cycle of written submissions and feedback through class discussions and teacher evaluations. The idea is to develop a credible capacity for reading and writing amongst those who take up the course. Evaluations will be based on class presentations, writing assignments and a tutorial.					
[Textbook]					
Not used					
[Reference book, etc.]					
(Reference book) Ramachandra Guha 『The Unquiet Woods: ecological change and peasant resistance in the Himalaya』 (Permanent Black: Ranikhet 2010 [1989]) ISBN:978-0520222359					
Continue to Environmental Histories of South Asia-E2(2) ↓ ↓ ↓					

Environmental Histories of South Asia-E2(2)

Ramachandra Guha & Madhav Gadgil 『This Fissured Land: an ecological history of India』 (Oxford University Press: New Delhi 1992) ISBN:978-0520082960
 Mahesh Rangarajan 『Fencing the Forest: conservation and ecological change in India's Central provinces 1860-1914』 (Oxford University press: New Delhi 1996) ISBN:978-0195649840
 Richard Grove 『Green Imperialism; colonial expansion, tropical island Edens and the origins of Environmentalism 1600-1860』 (Cambridge University Press: Cambridge, UK 1995) ISBN:978-0521565134
 Vasant Saberwal 『Pastoral Politics: shepherds, bureaucrats, and conservation in the Western Himalaya』 (Oxford University Press: New Delhi 1998) ISBN:978-0195643084
 K. Sivaramakrishnan 『Modern Forests: Statemaking and environmental change in colonial Eastern India』 (Oxford University Press: New Delhi 1999) ISBN:978-0804745567
 S. Ravi Rajan 『Modernizing Nature: Forestry and Imperial Eco-Development 1800-1950』 (Orient Longman: Hyderabad 2006) ISBN:978-0199277964
 Rohan D' Souza 『Drowned and Dammed: colonial capitalism and flood control in Eastern India』 (Oxford University Press: New Delhi 2006) ISBN:978-0195682175
 Julie E. Hughes 『Animal Kingdoms: Hunting, the Environment, and Power in the Indian Princely States』 (Harvard University Press: Cambridge, Mass. 2013) ISBN:978-0674072800

(Related URL)

(Relevant sections and chapters from the above books will be assigned as readings for the course. Other reading materials such as articles or short write-ups may be included based on class discussions and interest.)

[Regarding studies out of class (preparation and review)]

Students will be expected to have read at least five pages of pre-assigned reading, at the very minimum, before attending each class.

[Others (office hour, etc.)]

Students can meet me during office hours with prior appointment



Lecture code: H814001

Course numbering					
Course title <English>		Introduction to Urban Geography-E2 Introduction to Urban Geography-E2		Affiliated department, Job title,Name	Graduate School of Global Environmental Studies Senior Lecturer,BAARS, ROGER CLOUD
Group		Humanities and Social Sciences	Field(Classification)	Regions and Cultures(Issues)	
Language		English	Old group	Group A	Number of credits
	2				
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • First semester
Day/period	Thu.4	Target year	All students	Eligible students	For all majors
[Outline and Purpose of the Course]					
The majority of the world's population live in cities. The course explores the dynamics and transformations of urban places and spaces, which include the origin and evolution of cities, the development of networks of cities bound together by culture, trade, communication and competition, as well as the dynamics of economic restructuring in urban regions.					
[Course Goals]					
The course allows students to develop a critical perspective on dominant neoliberal representations of the city and to explore the great diversity of urban worlds. Students will understand the complexity of human-city relationships and learn how cities are shaped by culture, society, economics, politics, and the environment.					
[Course Schedule and Contents]					
Week 1: Approaches to the City - What is Urban Geography?					
Week 2: Foundations I - Basic Concepts					
Week 3: Foundations II - Advanced Concepts					
Week 4: Forms and Structures					
Week 5: City Economies					
Week 6: Urban Planning					
Week 7: Field Trip - Gion / Kawaramachi					
Week 8: Urban Architecture					
Week 9: Experiencing the City					
Week 10: Housing and Inequality					
Week 11: Urban Transport					
Week 12: Sustainable Cities					
Week 13: Final Presentations I					
Week 14: Final Presentations II					
Course Schedule might change					
[Class requirement]					
You are interested in cities, excited about living in one, and want to learn more about them.					
Field Trip to Gion: Participation is mandatory					

Continue to Introduction to Urban Geography-E2(2) ↓ ↓ ↓					

Introduction to Urban Geography-E2(2)
[Method, Point of view, and Attainment levels of Evaluation]
20% Attendance and in-class discussion and participation, 40% Photo Essay (1500 words), 40% Group Presentation (10-15 min)
[Textbook]
Required readings and materials will be distributed in class.
[Reference book, etc.]
(Reference book)
Introduced during class
[Regarding studies out of class (preparation and review)]
Students are expected to prepare for each class and be ready to discuss the weeks topics in small groups. Preparatory materials include academic readings, news pieces and online media materials.
[Others (office hour, etc.)]
Please email the instructor:
baars.rogercloud.6a@kyoto-u.ac.jp


Lecture code: H814002

Course numbering					
Course title <English>	Introduction to Urban Geography-E2 Introduction to Urban Geography-E2		Affiliated department, Job title,Name	Graduate School of Global Environmental Studies Senior Lecturer,BAARS, ROGER CLOUD	
Group	Humanities and Social Sciences	Field(Classification)	Regions and Cultures(Issues)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • Second semester
Day/period	Thu.4	Target year	All students	Eligible students	For all majors
[Outline and Purpose of the Course]					
The majority of the world's population live in cities. The course explores the dynamics and transformations of urban places and spaces, which include the origin and evolution of cities, the development of networks of cities bound together by culture, trade, communication and competition, as well as the dynamics of economic restructuring in urban regions.					
[Course Goals]					
The course allows students to develop a critical perspective on dominant neoliberal representations of the city and to explore the great diversity of urban worlds. Students will understand the complexity of human-city relationships and learn how cities are shaped by culture, society, economics, politics, and the environment.					
[Course Schedule and Contents]					
Week 1: Approaches to the City - What is Urban Geography? Week 2: Foundations I - Basic Concepts Week 3: Foundations II - Advanced Concepts Week 4: Forms and Structures Week 5: City Economies Week 6: Urban Planning Week 7: Field Trip - Gion / Kawaramachi Week 8: Urban Architecture Week 9: Experiencing the City Week 10: Housing and Inequality Week 11: Urban Transport Week 12: Sustainable Cities Week 13: Final Presentations I Week 14: Final Presentations II					
Course Schedule might change					
[Class requirement]					
You are interested in cities, excited about living in one, and want to learn more about them.					
Field Trip to Gion: Participation is mandatory					
----- Continue to Introduction to Urban Geography-E2(2) ↓ ↓ ↓					

Introduction to Urban Geography-E2(2)	
[Method, Point of view, and Attainment levels of Evaluation]	
20% Attendance and in-class discussion and participation, 40% Photo Essay (1500 words), 40% Group Presentation (10-15 min)	
[Textbook]	
Required readings and materials will be distributed in class.	
[Reference book, etc.]	
(Reference book)	
Introduced during class	
[Regarding studies out of class (preparation and review)]	
Students are expected to prepare for each class and be ready to discuss the weeks topics in small groups. Preparatory materials include academic readings, news pieces and online media materials.	
[Others (office hour, etc.)]	
Please email the instructor.	
baars.rogercloud.6a@kyoto-u.ac.jp	

Lecture code: H806001

Course numbering		U-LAS05 20041 LE74			
Course title <English>		Introduction to Urban Planning-E2 Introduction to Urban Planning-E2		Affiliated department, Job title,Name Disaster Prevention Research Institute Associate Professor,SAMADDAR, Subhajyoti	
Group		Humanities and Social Sciences		Field(Classification) Regions and Cultures(Issues)	
Language		English		Old group Group A	
Number of weekly time blocks		1		Number of credits 2	
Class style		Lecture		Course offered year/period 2019 • First semester	
Day/period		Wed.3		Target year Mainly 1st & 2nd year students	
Eligible students		For all majors			
[Outline and Purpose of the Course]					
This course provides an overview of the conceptual ideas, theories and popular practices in urban and city planning. This course would help you to understand origins and evolution of the urban world. It would cover major movements, ideas and practices that have influenced both cities and urban planning. It will highlight both the theoretical debates and practical challenges that urban planners are likely to encounter; and discuss problem-solving techniques and strategies popular in planning practices.					
[Course Goals]					
To introduce major theories and concepts in urban planning. To understand the socio-economic, political and environmental forces influence the planning processes. To learn various planning tools and techniques. To understand practical challenges in urban planning.					
[Course Schedule and Contents]					
1. What is urban planning? (Week 1 to 2) 2. History of city: Urbanization, sub-urbanization and re-urbanization. (Week 3 and 4). 3. History of urban planning: An overview (Week 5 to 7) 4. Major contemporary urban planning approaches (Week 8 to 9). 5. Popular methods and tools in urban planning. (Week 9 to 12) 6. Urban governance and public participation (Week 13). 7. Current challenges of urban planning (Week 14) 8. Final presentations (Week 15) 9. Feedback class (Week 16)					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
Assignment -2 (25 X 2 = 50 Points) Group Discussion - 1 (25 points) Presentations - (25 points)					
[Textbook]					
Instructed during class The City in History: It's Origins, Its Transformations, and Its Prospects : By Lewis Mumford (1972) Local Planning: Contemporary Principles and Practice - Edited by Gary Hack, et al. (2009). Good City Form - by Kevin Lynch (1995). Cities of Tomorrow: An Intellectual History of Urban Planning and Design in the Twentieth Century - by Continue to Introduction to Urban Planning-E2(2) ↓ ↓ ↓					

Introduction to Urban Planning-E2(2)

Peter Geoffrey Hall (1996).
Kaiser, Edward J., David R. Godschalk, and F. Stuart Chapin. Urban land use planning. Vol. 4. Urbana, IL: University of Illinois Press, 1995.

[Reference book, etc.]
(Reference book)
Introduced during class

[Regarding studies out of class (preparation and review)]

- Prepare and review class contents, reading textbooks.
- Complete assignments.
- Participate in group discussion.
- Give presentations.

[Others (office hour, etc.)]



Lecture code: H808001

Course numbering		U-LAS05 20042 LE31			
Course title <English>		Food and Globalization I-E2 Food and Globalization I-E2		Affiliated department, Job title,Name Graduate School of Agriculture Program-Specific Senior Lecturer,Hart Nadav FEUER	
Group		Humanities and Social Sciences		Field(Classification) Regions and Cultures(Issues)	
Language		English		Old group Group A Number of credits 2	
Number of weekly time blocks		1		Class style Lecture	
Day/period		Wed.2		Course offered year/period 2019 • First semester	
Target year		Mainly 1st & 2nd year students		Eligible students For all majors	
[Outline and Purpose of the Course]					
This course is about the dramatic changes to food systems worldwide under globalization. The story begins with early trade and the movement of different crops from their origins, including potatoes, coffee, wheat, rice and bananas. Through cultural integration, certain foods became staples and others became traded commodities. We will explore the transformation of food from a local phenomenon to a global industry.					
[Course Goals]					
In this course, students will learn about the basic trends that have impacted and shaped food systems around the world. Students will apply the approach of historical food systems using the 'One Food Method'.					
[Course Schedule and Contents]					
Introduction					
1. A true global traveler: the story of the humble potato					
Module 1: The mobility of food					
2. The origins of food and their first travels					
3. Early trade: diversity and survival					
4. Middle trade: luxury and new tastes					
5. Latter trade: efficiency and cultural exchange					
Module 2: The mobility of farming					
6. Farming overseas and comparative advantage					
7. Technology transfer and the Green Revolution					
8. The politics of food prices, subsidies, trade					
Module 3: The transformation of our foods					
9. Corporate consolidation of the global food trade					
10. Local to global and back again: food movements					
11. The single-food approach: The story of Milk					
Module 4: Student Presentations					
12. The story of a staple grain					
13. The story of a livestock product					
14. The story of a fruit					
15. Final exam					
Continue to Food and Globalization I-E2(2) ↓ ↓					

Food and Globalization I-E2(2)	
16. Feedback (details in class)	
[Class requirement]	
English proficiency suitable for understanding lectures, reading basic texts, and participating in class discussion.	
[Method, Point of view, and Attainment levels of Evaluation]	
15% Attendance (* More than 3 absences without official excuse receives a fail)	
25% Mini-quizzes and class activities	
20% Group presentation	
40% Final examination	
[Textbook]	
Not used No textbook, but consultation of in-class materials and eBooks available at Kyoto University Library (see Reference book).	
[Reference book, etc.]	
(Reference book)	
Kiple, Kenneth N. 『A Movable Feast: Ten Millennia of Food Globalization』 (Cambridge University Press) ISBN:9781107-657458	
Flandrin, Jean-Louis 『Food: A Culinary History』 (Columbia University Press) ISBN:9780231544092 (eBook)	
[Regarding studies out of class (preparation and review)]	
Students will be expected to do readings or watch movies in preparation for class and discuss them the following week. Alternatively, students will conduct take home practical exercises which must be submitted the following week.	
[Others (office hour, etc.)]	
Short meetings can be spontaneous or scheduled. Longer meetings scheduled only by email.	
	

Lecture code: H809001

Course numbering		U-LAS05 20043 LE31			
Course title <English>		Food and Globalization II-E2 Food and Globalization II-E2		Affiliated department, Job title,Name Graduate School of Agriculture Program-Specific Senior Lecturer,Hart Nadav FEUER	
Group		Humanities and Social Sciences		Field(Classification) Regions and Cultures(Issues)	
Language		English		Old group Group A	
Number of weekly time blocks		1		Number of credits 2	
Class style		Lecture		Course offered year/period 2019 • Second semester	
Day/period		Wed.2		Target year Mainly 1st & 2nd year students	
Eligible students		For all majors			
[Outline and Purpose of the Course]					
This course surveys modern transformations to food systems worldwide under globalization. The topics cover the debate between global vs. local from both sympathetic and critical perspectives. In more detail, we explore what happened after food became a globalized industry and how new food trends began to change the way farming is done and how people eat worldwide.					
[Course Goals]					
In this course, students will gain a basic understanding about the contemporary trends in food systems around the world, particularly the impact of globalization, dietary transition, and food movements. Students will apply the approach of class to analyze one contemporary trend in agriculture.					
[Course Schedule and Contents]					
Introduction					
1. Food after globalization					
Module 1: Challenges to global food					
2. Overproduction and alternative uses: sweeteners, fodder, energy					
3. Global diet trends from malnutrition to overnutrition					
4. Rising incomes, rising food prices					
5. Environmental consequences of food production					
Module 2: Revival of local food					
6. New farmer-consumer relationships: fairtrade, farmer markets, farm-to-fork					
7. Youth and small farm romanticism					
8. Urban agriculture					
9. Challenges to local food in a global world					
Module 3: Global-Local contradictions					
10. World trade in specialty local products: geographic indications					
11. Unexpected local specialties: Hokkaido dairy					
Module 4: Student Presentations					
11. Mega-agriculture					
12. Small-scale food systems					
13. New diets: innovation or marketing?					
14. <u>Key lessons of global food</u>					
Continue to Food and Globalization II-E2(2) ↓ ↓					

Food and Globalization II-E2(2)	

15. Final exam	
16. Feedback (details in class)	
[Class requirement]	
English proficiency suitable for understanding lectures, reading basic texts, and participating in class discussion. [Not required, but to increase understanding of world food systems, interested students are encouraged to take Food and Globalization I in the Spring Semester.]	
[Method, Point of view, and Attainment levels of Evaluation]	
15% Attendance (* More than 3 absences without official excuse receives a fail)	
25% Mini-quizzes and class activities	
20% Group presentation	
40% Final examination	
[Textbook]	
Not used	
No textbook, but consultation of in-class materials and eBooks available at Kyoto University Library (see Reference book).	
[Reference book, etc.]	
(Reference book)	
Belasco, Warren 『Food: the Key Concepts』 (Bloomsbury) ISBN:9781845206734	
Crowther, Gillian 『Eating Culture: An Anthropological Guide to Food (2nd Edition)』 (Toronto University Press) ISBN:9781487593292 (Provided in pieces)	
[Regarding studies out of class (preparation and review)]	
Students will be expected to do readings or practical exercises, or watch movies in preparation for class and take short quizzes. Students should be ready to discuss the topic of the week in class.	
[Others (office hour, etc.)]	
Short meetings can be spontaneous or scheduled. Longer meetings scheduled only by email.	
 	

Lecture code: H926001

Course numbering		U-LAS06 10003 LE41			
Course title <English>	Jurisprudence-E2 Jurisprudence-E2		Affiliated department, Job title,Name	Graduate School of Law Associate Professor,KARAISKOS, Antonios	
Group	Humanities and Social Sciences	Field(Classification)	Jurisprudence, Politics and Economics(Foundations)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • Second semester
Day/period	Mon.4	Target year	Mainly 1st & 2nd year students	Eligible students	For all majors
[Outline and Purpose of the Course]					
<p>This course will give an introduction to the Japanese law. It will explain the outline of constitutional law, substantive and procedural criminal and civil law, as well as enterprise law in Japan, and give an introduction to their basic structure and elements. Along the way, relevant cases decided by Japanese courts will also be discussed. The goal of this course is for students to acquire a basic knowledge of the structure and content of Japanese law. This will help them to further deepen their knowledge of it. An additional goal is for students to become able to analyze legal issues from various angles. During this course, students will be given the opportunity to actively participate in discussions and exchange of ideas.</p>					
[Course Goals]					
<ul style="list-style-type: none"> - Understanding the outline of the current state and structure of law in modern Japanese society. - Getting able to analyze legal issues from various angles. 					
[Course Schedule and Contents]					
1 Introduction 2 Constitutional Law I: System of government 3 Constitutional Law II: Human rights 4 Criminal Trial 5 Criminal Law I: Crimes and punishments 6 Criminal Law II: Elements of crimes 7 Civil Law I: Juristic acts 8 Civil Law II: Real rights 9 Civil Law III: Contracts 10 Civil Law IV: Torts 11 Civil Law V: Marriage and divorce 12 Civil Law VI: Inheritance 13 Civil Trial 14 Enterprise Law 15 Final exam Feedback (the method will be explained later)					
----- Continue to Jurisprudence-E2(2) ↓ ↓ ↓					

Jurisprudence-E2(2)
[Class requirement]
None
[Method, Point of view, and Attainment levels of Evaluation]
Class attendance and active participation: 20% Final written examination (part of the questions will have to be answered in the form of a short essay): 80%
[Textbook]
Handouts will be distributed and further reading material will be indicated during the course.
[Reference book, etc.]
(Reference book) Introduced during class
[Regarding studies out of class (preparation and review)]
Will be indicated during the course if necessary.
[Others (office hour, etc.)]
Students may contact me by email for appointments or questions regarding the course.

Lecture code: H927001

Course numbering		U-LAS06 10004 LE41			
Course title <English>	Law and Culture in Japan-E2 Law and Culture in Japan-E2		Affiliated department, Job title,Name	Graduate School of Law Associate Professor,KARAIKOS, Antonios	
Group	Humanities and Social Sciences	Field(Classification)	Jurisprudence, Politics and Economics(Foundations)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • First semester
Day/period	Fri.4	Target year	Mainly 1st & 2nd year students	Eligible students	For all majors
[Outline and Purpose of the Course]					
<p>This course will give an outline of some major legal issues in Japan, and explain the cultural and social elements behind them.</p> <p>Further, it will demonstrate the mutual relation between law and culture in Japan, especially focusing on two topics: (1) law in everyday life, and (2) social issues and the law.</p> <p>Along the way, relevant cases decided by Japanese courts will also be discussed.</p> <p>The goal of this course is for students to acquire a basic knowledge of the structure and current state of Japanese law, and get able to comprehend and analyze representative legal issues of everyday life. An additional goal is for students to deepen their understanding of Japanese society and culture.</p> <p>During this course, students will be given the opportunity to actively participate in discussions and exchange of ideas.</p>					
[Course Goals]					
<ul style="list-style-type: none"> - Understanding the basics of law in modern Japanese society. - Getting able to comprehend and analyze representative legal issues of everyday life. - Deepening the understanding of Japanese society and culture. 					
[Course Schedule and Contents]					
1 Introduction 2 Significance and foundations of law 3 Sources and categories of law 4 Trials, structure of courts and legal professions 5 Law in everyday life I: Minors and the law 6 Law in everyday life II: Elderly people and the law 7 Law in everyday life III: Family and the law 8 Law in everyday life IV: Contracts in Japan 9 Law in everyday life V: Consumer protection/education and the law 10 Social issues and the law I: Organized fraud 11 Social issues and the law II: Product safety 12 Social issues and the law III: False accusations in criminal cases 13 Social issues and the law IV: Bioethics 14 Social issues and the law V: Artificial intelligence 15 Final exam Feedback (the method will be explained later)					
----- Continue to Law and Culture in Japan-E2(2) ↓ ↓ ↓					

Law and Culture in Japan-E2(2)
[Class requirement]
None
[Method, Point of view, and Attainment levels of Evaluation]
Class attendance and active participation: 20% Final written examination (part of the questions will have to be answered in the form of a short essay): 80%
[Textbook]
Handouts will be distributed and further reading material will be indicated during the course.
[Reference book, etc.]
(Reference book) Introduced during class
[Regarding studies out of class (preparation and review)]
Will be indicated during the course if necessary.
[Others (office hour, etc.)]
Students may contact me by email for appointments or questions regarding the course.

Lecture code: H938001

Course numbering					
Course title <English>		Political Science I-E2 Political Science I-E2		Affiliated department, Job title,Name	Center for Southeast Asian Studies Associate Professor,TANGSEefa, Decha
Group		Humanities and Social Sciences	Field(Classification)	Jurisprudence, Politics and Economics(Foundations)	
Language	English		Old group	Group A	Number of credits
	2				
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period
					2019 • First semester
Day/period	Wed.3	Target year	All students		Eligible students
					For all majors
[Outline and Purpose of the Course]					
<p>Treating politics as a potentially humanizing enterprise, this course's foci are: a) Rules of the Game; b) Political Philosophy and Ideology; and c) Application to the Japanese Contexts. The first part will take us to an exploration of the following notions: the meaning of and the factors affecting "politics"; the intertwining relations between value, choice and judgment; the basic characteristics of the discipline of political science. Second, we will discuss how the search for and the commitment upon certain notions of "good" political lives lead to different political ideologies. Toward the end, we will apply such explorations, conceptualizations and discussions to the Japanese context, hoping to shed some light on Japan's multiple phenomena related to "the political".</p>					
[Course Goals]					
<p>This course aims to equip students with a set of abilities to: (1) conceptually think through "the political" in different subfields of political science; (2) apply that conceptualization to the Japanese contexts.</p>					
[Course Schedule and Contents]					
<p>Week 1: Introduction and Course Queries Part I: Rules of the Game Week 2: Games Politicians Play Week 3: Politics and Choice Week 4: Political Science: Components, Tasks, and Controversies Week 5: The Physical, Social, and Cultural Environment of Politics Part II: Political Philosophy and Ideology Week 6: The Quest for the Good Political Life Week 7: Liberal Democracy Week 8: Democratic Socialism and Communism: Ideologies of the Left Week 9: Fascism Part III: On "Japanese Politics": Writing a Paper Week 10: On "Japanese Politics" -- 1 Week 11: Proposal Presentation Week 12: Writing Workshop -- 1 Week 13: Writing Workshop -- 2 - Thursday: Final Paper Due Week 14: Course Summary Week 15 Examination Week 16: Feedback Session</p>					
Continue to Political Science I-E2(2) ↓ ↓ ↓					

Political Science I-E2(2)
[Class requirement]
None
[Method, Point of view, and Attainment levels of Evaluation]
Attendance and class participation (30%), team research paper (40%), final exam (30%).
[Textbook]
Neal Riemer, Douglas W. Simon, Joseph Romance 『The Challenge of Politics: An Introduction to Political Science. Fifth edition』 (CQ Press) ISBN:978-1506323473 (2017)
[Reference book, etc.]
(Reference book)
Bertrand Badie, Dirk Berg-Schlosser, Leonardo A. Morlino (General Editors) 『International Encyclopedia of Political Science』 (SAGE Publications, Inc.) ISBN:978-1412959636 (2011) George Thomas Kurian (Editor in Chief) 『The Encyclopedia of Political Science』 (CQ Press) ISBN:978-1933116440 (2011)
(Related URL)
https://edge.sagepub.com/riemer5e
[Regarding studies out of class (preparation and review)]
On the first day of class, each weekly required reading(s) will be assigned. Throughout the semester, students will come to class having read the reading(s) and ready to engage with their peers.
[Others (office hour, etc.)]
Consultations can be arranged as needed.

Lecture code: H939001

Course numbering					
Course title <English>		Political Science II-E2 Political Science II-E2		Affiliated department, Job title,Name Center for Southeast Asian Studies Associate Professor,TANGSEefa, Decha	
Group		Humanities and Social Sciences		Field(Classification) Jurisprudence, Politics and Economics(Foundations)	
Language		English		Old group Group A	
Number of weekly time blocks		1		Number of credits 2	
Class style		Lecture		Course offered year/period 2019 • Second semester	
Day/period		Wed.3		Target year All students	
Eligible students		For all majors			
[Outline and Purpose of the Course]					
This course treats politics as a potentially humanizing enterprise. Its foci are: a) Comparative and World Politics; b) Political Judgment and Public Policy; and c) Application to the Japanese Contexts. We will start with an exploration of various forms of governing in a few countries from different parts of the world, based on their different cultures and values. Second, we will examine how ethical judgments in different contexts unfold, through our discussions of war and peace; human rights; economy; and ecological degradation. In the process, we will also explore ways in which those judgments manifest themselves at the policy formation level. Toward the end, we will apply such explorations, conceptualizations and discussions to the Japanese context, hoping to shed some light on Japan's multiple phenomena related to "the political".					
[Course Goals]					
This course aims to equip students with a set of abilities to: (1) conceptually think through "the political" in different subfields of political science; (2) apply that conceptualization to the Japanese contexts.					
[Course Schedule and Contents]					
Week 1: Introduction and Course Queries					
Part I: Comparative and World Politics					
Week 2: Key Dilemmas: Political Form, Culture and Value					
Week 3: Comparative Politics					
Week 4: International Politics and the Global Community-1					
Week 5: International Politics and the Global Community-2					
Part II: Political Judgment and Public Policy					
Week 6: War and Peace in the Modern Age					
Week 7: The Battle on Behalf of Human Rights					
Week 8: The Struggle for Economic Well-Being					
Week 9: The Imperative of Ecological Health					
Part III: On "Japanese Politics": Writing a Paper					
Week 10: On "Japanese Politics"					
Week 11: Proposal Presentation					
Week 12: Writing Workshop -- 1					
Week 13: Writing Workshop -- 2					
●Thursday: Final Paper Due					
Week 14: Course Summary					
Week 15: Examination					
Continue to Political Science II-E2(2) ↓ ↓ ↓					

Political Science II-E2(2)	
Week 16: Feedback Session	
[Class requirement]	
Students must pass Political Science I.	
[Method, Point of view, and Attainment levels of Evaluation]	
Attendance and class participation (30%), team research paper (40%), final exam (30%).	
[Textbook]	
Neal Riemer, Douglas W. Simon, Joseph Romance 『The Challenge of Politics: An Introduction to Political Science Fifth edition』 (CQ Press) ISBN:978-1506323473 (2017)	
[Reference book, etc.]	
(Reference book)	
Bertrand Badie, Dirk Berg-Schlosser, Leonardo A. Morlino (General Editors) 『International Encyclopedia of Political Science』 (SAGE Publications, Inc) ISBN:978-1412959636 (2011)	
George Thomas Kurian (Editor in Chief) 『The Encyclopedia of Political Science』 (CQ Press) ISBN:978-1933116440 (2011)	
(Related URL)	
https://edge.sagepub.com/riemer5e	
[Regarding studies out of class (preparation and review)]	
On the first day of class, each weekly required reading(s) will be assigned. Throughout the semester, students will come to class having read the reading(s) and ready to engage with their peers.	
[Others (office hour, etc.)]	
Consultations can be arranged as needed.	

Lecture code: H934001

Course numbering					
Course title <English>	Introduction to Economics-E2 Introduction to Economics-E2		Affiliated department, Job title,Name	Institute of Economic Research Associate Professor,NEWTON, Jonathan Charles Scott	
Group	Humanities and Social Sciences	Field(Classification)	Jurisprudence, Politics and Economics(Foundations)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • First semester
Day/period	Wed.1	Target year	Mainly 1st year students	Eligible students	For all majors
[Outline and Purpose of the Course]					
This course is an introduction to economics, covering essential economic concepts (gains from trade, marginal costs, solutions to basic economic models) in both a qualitative and a quantitative manner.					
The purpose of the course is to give students an understanding of economic concepts and methods which they can then take to further, more detailed, study of the subject.					
[Course Goals]					
~ To introduce important economic concepts and illustrate these with examples. ~ To give some ability to consider real world phenomena through economic thinking. ~ To prepare students for further study of economics.					
[Course Schedule and Contents]					
Each week part of the textbook or other relevant readings will be covered in class. The course consists of the following 7 topics, each of which will be (approximately) covered in 2 time blocks (3 hours of class time):					
1. Gains from trade. 2. Demand and supply. 3. Production, equilibrium and welfare. 4. Perfect competition and monopoly. 5. Monopolistic competition and oligopoly. 6. Market failure, taxes and subsidies. 7. Public goods and common resources.					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
Grading (100%) will be based on quizzes and tests administered throughout the semester.					
[Textbook]					
Bonnie Nguyen and Andrew Wait 『Essentials of Microeconomics』 (Routledge) ISBN:978-1138891364					
[Regarding studies out of class (preparation and review)]					
The assigned chapters of the textbook, as well as any other readings assigned in class, should be read each week.					
[Others (office hour, etc.)]					
Office hours to be announced at first lecture.					

Lecture code: H935001

Course numbering					
Course title <English>	Principles of Economics-E2 Principles of Economics-E2		Affiliated department, Job title,Name	Institute of Economic Research Associate Professor,NEWTON, Jonathan Charles Scott	
Group	Humanities and Social Sciences	Field(Classification)	Jurisprudence, Politics and Economics(Foundations)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • First semester
Day/period	Wed.2	Target year	Mainly 1st year students	Eligible students	For all majors
[Outline and Purpose of the Course]					
This course is an exploration of key economic principles, illustrated and discussed via examples, both quantitative and qualitative, as well as by readings from some of the classic texts of economics.					
The purpose of the course is to give students a deep and thoughtful understanding of a few economic concepts, as well as an appreciation of the intellectual history of these concepts.					
[Course Goals]					
~ To further understanding of important economic concepts. ~ To gain an appreciation of the history of thought behind these concepts. ~ To be able to consider and apply these concepts in a modern context.					
[Course Schedule and Contents]					
Each week we will consider an interesting economic concept. The course will cover some or all of the following 7 topics, each of which will be covered in 2 time blocks (an estimated 3 hours of class time):					
1. Self-interest: do free choices make us better off? 2. The Invisible Hand: do free choices make society better off? 3. The marginal theory of value: why are diamonds more expensive than water? 4. Foresight and Ricardian equivalence. 5. Knowledge, uncertainty, prices and information. 6. Adverse selection and moral hazard. 7. Equilibrating systems. The Mundell-Fleming trilemma.					
Readings will be assigned by authors such as Adam Smith, David Ricardo, Thomas Malthus, Alfred Marshall, Carl Menger, Ludwig von Mises, Leon Walras, Vilfredo Pareto, Friedrich Hayek, Ronald Coase.					
[Class requirement]					
Students are required to have sufficient competency in English and logical thinking to read the assigned texts, attend class and complete assigned questions.					
[Method, Point of view, and Attainment levels of Evaluation]					
Grading (100%) will be based on one or more written assignments that will be assessed.					
[Textbook]					
Not used					
[Regarding studies out of class (preparation and review)]					
Readings assigned in class should be read each week.					
[Others (office hour, etc.)]					
Office hours to be announced at first lecture.					

Lecture code: H936001

Course numbering					
Course title <English>		Economy and Society I-E2 Economy and Society I-E2		Affiliated department, Job title, Name Institute of Economic Research Associate Professor, NEWTON, Jonathan Charles Scott	
Group		Humanities and Social Sciences		Field(Classification) Jurisprudence, Politics and Economics(Foundations)	
Language		English		Old group Group A	
Number of weekly time blocks		1		Number of credits 2	
Class style		Seminar		Course offered year/period 2019 • First semester	
Day/period		Thu.3		Target year Mainly 2nd year students	
Eligible students		For liberal arts students			
[Outline and Purpose of the Course]					
This course is a "Great books" seminar that discusses the book "Collective choice and social welfare" by Amartya Sen.					
The book is a classic study that analyzes the theory of collective choice. It addresses topics such as whether the values of individuals can be aggregated in a way that leads to a sensible rule for social decisions to be made. As well as relevance to economics it has important philosophical aspects and is related to ethics and the theory of justice.					
The purpose of the course is to come to a thoughtful, nuanced understanding of this text.					
[Course Goals]					
~ To read, understand and critique "Collective choice and social welfare" by Amartya Sen.					
~ To improve critical reading skills.					
~ To prepare students for further analytical work in game theory, economics, sociology or philosophy.					
[Course Schedule and Contents]					
Each week a chapter or part of a chapter will be discussed in class. The course consists of the following topics, each of which will be covered in 1 to 2 lectures (1.5 to 3 hours of class time):					
1. Introduction and preferences					
2. Unanimity					
3. Collective Rationality					
4. Choice Versus Orderings					
5. Values and Choice					
6. Conflicts and Dilemmas: the liberal paradox					
7. Interpersonal Aggregation and Comparability					
8. Cardinality With or Without Comparability					
9. Equity and Justice					
10. Majority Choice and Related Systems					
11. Theory and Practice					
[Class requirement]					
Students are required to have the English and mathematical skills required to read the assigned texts, attend class and participate in discussion.					
Students MUST have a copy of the book (either a hard copy or an electronic copy) as it will be used from the					
Continue to Economy and Society I-E2(2) ↓ ↓ ↓					

Economy and Society I-E2(2)	
----- very beginning of the course.	
[Method, Point of view, and Attainment levels of Evaluation]	
Grading will predominantly be based on class presentations and discussion of ideas (70 to 100%). Up to 30% may be based on in-class tests that can take place from time to time throughout the semester.	
[Textbook]	
Amartya Sen 『Collective Choice and Social Welfare』 (Harvard University Press) ISBN:9780674919211	
[Regarding studies out of class (preparation and review)]	
The assigned chapters of the book, as well as any other readings assigned in class, should be read each week.	
[Others (office hour, etc.)]	
Office hour by appointment.	

Lecture code: H937001

Course numbering					
Course title <English>		Economy and Society II-E2 Economy and Society II-E2		Affiliated department, Job title, Name	Institute of Economic Research Associate Professor, NEWTON, Jonathan Charles Scott
Group		Humanities and Social Sciences	Field(Classification)	Jurisprudence, Politics and Economics(Foundations)	
Language		English	Old group	Group A	Number of credits
	2				
Number of weekly time blocks	1	Class style	Seminar	Course offered year/period	2019 • First semester
Day/period	Thu.1	Target year	Mainly 2nd year students	Eligible students	For liberal arts students
[Outline and Purpose of the Course]					
This course is a "Great books" seminar that discusses the book "Convention: A Philosophical Study" by David Lewis.					
This book, one of the greatest game theoretic texts of the 20th Century, provides insight into (i) the formation of conventions (e.g. the understandings that cars drive on the left of the road in Japan, but on the right of the road in China); (ii) hierarchies of beliefs (e.g. I know that you know that I know that Alice has red hair); and (iii) signalling and language (conventions that involve information transmission).					
The purpose of the course is to come to a thoughtful, nuanced understanding of this text.					
[Course Goals]					
~ To read, understand and critique "Convention: A Philosophical Study" by David Lewis.					
~ To improve critical reading skills.					
~ To prepare students for further analytical work in game theory, economics, sociology or philosophy.					
[Course Schedule and Contents]					
Each week a chapter or part of a chapter will be discussed in class. The course consists of the following topics, each of which will be covered in approximately 3 hours of class time:					
1. Coordination problems					
2. What is a convention?					
3. Common knowledge.					
4. Knowledge and conventions.					
5. Formation of conventions.					
6. Signaling.					
7. Language and convention.					
----- Continue to Economy and Society II-E2(2) ↓ ↓ ↓					

Economy and Society II-E2(2)
[Class requirement]
Students are required to have the English and logical skills required to read the assigned texts, attend class and participate in discussion.
Students MUST have a copy of the book (either a hard copy or an electronic copy) as it will be used from the very beginning of the course.
[Method, Point of view, and Attainment levels of Evaluation]
Grading will predominantly (70-100%) be based on class presentations and discussion of ideas. Up to 30% may be based on tests taken in class throughout the semester.
[Textbook]
David Lewis 『Convention: a philosophical study』 (Blackwell) ISBN:978-0631237525
[Regarding studies out of class (preparation and review)]
The assigned chapters of the book, as well as any other readings assigned in class, should be read each week.
[Others (office hour, etc.)]
Office hour by appointment.

Lecture code: H930001

Course numbering		U-LAS06 20011 LE41			
Course title <English>	Introduction to European Law-E2 Introduction to European Law-E2		Affiliated department, Job title,Name	Graduate School of Law Associate Professor,KARAISKOS, Antonios	
Group	Humanities and Social Sciences	Field(Classification)	Jurisprudence, Politics and Economics(Issues)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • First semester
Day/period	Fri.3	Target year	2nd year students or above	Eligible students	For all majors
(Students of Faculty of Law cannot take this course as liberal arts and general education course. Please register the course with your department.)					
[Outline and Purpose of the Course]					
<p>European law has many aspects. On the one hand, there are the various European states, each with their own legal system and legal tradition. On the other hand, the European Union has become an important factor in European politics, economy, and also law. Further, there are various projects which aim at harmonizing law in Europe.</p> <p>This course will give an overview of the various aspects of European law. Therefore, the first part of the course will give an introduction to the European Union, its history and legal framework. The second part will give an overview of the various European legal systems, their differences and what we can learn from comparative law studies. The third and final part will look at efforts in the harmonization and unification of law in Europe with a focus on private law.</p> <p>The course will give students ample opportunity to actively participate in discussions and case-solving. This course is thus helpful both for students who want to learn more about the European Union and integration in Europe from a legal perspective, as well as for students who intend to study any of the national laws of European states which today are closely interrelated with European Union law.</p>					
[Course Goals]					
<ul style="list-style-type: none"> - Getting to know the European Union, its history, structure, and legal framework. - Learning about various European legal systems, their differences and what they have in common. - Getting familiar with comparative law and its methods. - Becoming able to discussing the benefits and problems of the harmonization of laws. 					
[Course Schedule and Contents]					
1 Introduction - What is European Law?					
Part I: European Union					
2 Introduction, development					
3 Institutions					
4 Competences, legislative process					
5 Implementation and effect of EU law					
6 Court of Justice of the European Union, European Citizenship					
7 Internal market					
8 Example - EU consumer protection law					
9 Brexit					
Part II: Private law systems in Europe					
10 European legal systems					
Continue to Introduction to European Law-E2(2) ↓ ↓ ↓					

Introduction to European Law-E2(2)
<p>11 Case study: Formation of contract as an example</p> <p>12 Interaction between legal systems - comparative law</p>
<p>Part III: Harmonization of laws within Europe</p> <p>13 Harmonization of laws within Europe</p> <p>14 Outlook - where is European law going?</p>
15 Feedback
Note: the content above might be adjusted depending on the state of progress.
[Class requirement]
As the course requires a certain level of knowledge of academic English, it is addressed to students of second year and above.
[Method, Point of view, and Attainment levels of Evaluation]
Students will be evaluated on the basis of a final written exam. Part of the exam questions will have to be answered in the form of a short essay.
[Textbook]
Lecture materials and indication of further reading will be provided in class.
[Reference book, etc.]
(Reference book)
Introduced during class
[Regarding studies out of class (preparation and review)]
Will be indicated in class if necessary.
[Others (office hour, etc.)]
Students may contact me by email for appointments or questions regarding the course.

Lecture code: H928001

Course numbering		U-LAS06 20022 LE42			
Course title <English>	Japan's Political Economy-E2 Japan's Political Economy-E2		Affiliated department, Job title,Name	Graduate School of Law Associate Professor,HIJINO KEN	
Group	Humanities and Social Sciences	Field(Classification)	Jurisprudence, Politics and Economics(Issues)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • Second semester
Day/period	Tue.2	Target year	Mainly 1st & 2nd year students	Eligible students	For all majors
[Outline and Purpose of the Course]					
This class presents an overview of Japan's post-war modern history and investigates select issues in its political economy. The class is organized into three parts: 1) an overview of Japan's post-war history; 2) an analysis of the politics, economics, society and foreign policy of the country's "lost decades"; and 3) an exploration of Japan's post-war cleavages, ideologies, and place in the world.					
[Course Goals]					
The goal of this course is for students to begin to contemplate the interactions between politics, economics, society, and foreign policy of a nation over time, i.e. historically. Another goal is for students to improve their English reading and writing skills through studying in English a subject that they may be familiar with in the Japanese language.					
[Course Schedule and Contents]					
1. Introduction: What is modern history? What is political economy? Why study Japan?					
Part one: Japan's post-war history 1945 to 1989					
2. Occupation-era Japan: democratization and demilitarization (1945-47)					
3. Occupation-era Japan: the "reverse course" and the Yoshida doctrine (1947-51)					
4. Post-war economic miracle: economic and social transformations (1952-73)					
5. Political struggles and accommodation in the High-growth era (1952-73)					
6. End of the High-growth era: Nixon shocks and Oil shocks (1971-1980)					
7. Japan in the 1980s: conservative heyday and Bubble economy (1980-1990)					
Part two: Japan's lost decades 1990 to 2013					
8. The economics of Japan's lost decades: de-regulation and globalization					
9. The politics of Japan's lost decades: institutional reform and transition					
10. Social transformations during Japan's lost decades: fluidity and insecurity					
11. The foreign policy of Japan's lost decades: towards a more "normal" country					
Part three: Themes in Japan's post-war political economy (1945-2013)					
12. Relations between the centre and periphery in the post-war period					
13. Social classes and inequality in the post-war period					
14. Political ideologies and cleavages in the post-war period					
----- Continue to Japan's Political Economy-E2(2) ↓ ↓ ↓					

Japan's Political Economy-E2(2)	
[Class requirement]	
This course does not require any prior knowledge on Japan's post-war history or political economy. Students will be expected to read about 20-30 pages of rigorous and academic, though not technical, English. Students will also be expected to write their assignments in English (although this may change according to the class level).	
[Method, Point of view, and Attainment levels of Evaluation]	
Students will be evaluated on short quizzes = 30 % and a final exam = 70 % for their grade.	
[Textbook]	
Andrew Gordon 『A Modern History of Japan: from Tokugawa Times to the Present (Third Edition)』 (Oxford University Press) ISBN:978-0199930159 (other readings will be assigned accordingly)	
[Regarding studies out of class (preparation and review)]	
Students will be expected to spend at least 2-3 hours reading and preparing for each class.	
[Others (office hour, etc.)]	
I will not have fixed office hours, but students may contact me by email for appointments or questions about the course.	

Lecture code: H929001

Course numbering		U-LAS06 20023 LE42					
Course title <English>		Japanese Politics-E2 Japanese Politics-E2		Affiliated department, Job title,Name		Graduate School of Law Associate Professor,HIJINO KEN	
Group		Humanities and Social Sciences		Field(Classification)		Jurisprudence, Politics and Economics(Issues)	
Language		English		Old group		Group A	Number of credits
							2
Number of weekly time blocks	1	Class style	Lecture			Course offered year/period	2019・First semester
Day/period	Tue.2		Target year	2nd year students or above		Eligible students	For all majors
(Students of Faculty of Law cannot take this course as liberal arts and general education course. Please register the course with your department.)							
[Outline and Purpose of the Course]							
This is an introductory course on Japanese politics which considers the nature of Japan's political institutions from a comparative perspective. The course will analyze how variation in key political institutions (such as the electoral system) affects political outcomes in Japan and other democracies. The course is organized into three parts: 1) a brief survey of Japanese political history from the Meiji era to the present 2) a description and comparison of Japan's key political institutions 3) investigation into a number of political themes in post-war Japan.							
Along the way, students are introduced to basic social science methodologies of comparison to generate causal inferences as well as some basic analytical models used in comparative politics (such as the principal-agent and veto player model).							
[Course Goals]							
The goal of this course is for students to begin to contemplate how the preferences of voters, politicians, parties and interest groups are constrained and channeled by political institutions. Another goal is for students to improve their English reading and writing skills through studying in English a subject that they may be familiar with in the Japanese language.							
[Course Schedule and Contents]							
1.Introduction: What is politics? What are political institutions? Why compare?							
Part one: An overview of Japan's political history							
2. Pre-war politics: the Meiji constitution and politics of oligarchy (1889-1945)							
3. The Occupation era: the post-war constitution and democratization (1945-51)							
4. Politics of the high-growth era: the 1955-system (1955-1993)							
5. Politics of the lost decades: political reform and transition (1993-2013)							
Part two: Japan's political institutions in comparative perspective							
6. Electoral rules: majoritarian and proportional systems							
7. The party system: party types, numbers, and issue cleavages							
8. Electoral campaigns: watch documentary "Campaign"							
9. Chief executives and leadership: prime ministers and presidents							
10. The bureaucracy: principal-agent model and the autonomy of bureaucracy							
11. The local government system: decentralization and local government autonomy							
12. Institutional veto players: bicameralism, constitutionalism, and judiciary							
----- Continue to Japanese Politics-E2(2) ↓ ↓ ↓							

Japanese Politics-E2(2)	

Part three: Themes in Japanese politics	
13. Majoritarianism vs Consociationalism: the future of Japanese democracy	
14. Demography: aging and youth in politics	
[Class requirement]	
Previous knowledge in Japanese politics, social sciences or political science will not be required for this class. Students will be expected to read about 20-30 pages of rigorous and academic, though not technical, English. Students will also be expected to write their assignments in English (although this may change according to the class level).	
[Method, Point of view, and Attainment levels of Evaluation]	
Students will be evaluated on pop quizzes = 30% and a final examination = 70% for their grade.	
[Textbook]	
Frances McCall Rosenbluth and Michael F. Thies 『Japan Transformed: Political Change and Economic Restructuring』 (Princeton University Press) ISBN:978-0691135922 (建林正彦、曾我謙悟、待鳥聡史 『比較政治制度論』(2008) 有斐閣 アルマ)	
[Reference book, etc.]	
(Reference book)	
Clark, Golder and Golder 『Principles of Comparative Politics, 2nd edition』 (Sage CQ Press) ISBN:978-1608716791	
[Regarding studies out of class (preparation and review)]	
Students will be expected to read and prepare for at least 2-3 hours per class each week.	
[Others (office hour, etc.)]	
I will not have fixed office hours, but students may contact me by email for appointments or questions about the course.	

Lecture code: H931001

Course numbering		U-LAS06 20024 LE42			
Course title <English>	Modern Classics in Political Science-E2 Modern Classics in Political Science-E2		Affiliated department, Job title,Name	Graduate School of Law Associate Professor,HIJINO KEN	
Group	Humanities and Social Sciences	Field(Classification)	Jurisprudence, Politics and Economics(Issues)		
Language	English	Old group	Group A	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • First semester
Day/period	Wed.2	Target year	Mainly 1st & 2nd year students	Eligible students	For all majors
[Outline and Purpose of the Course]					
<p>This is a small-sized seminar-type class for students wishing to learn how to read critically in English by reading texts from leading scholars and commentators on on modern democracy. The class will introduce key issues surrounding democracy, including its history, definition, limits, and current challenges.</p> <p>We will be reading articles in journals and papers such as Foreign Affairs, New York Review of Books, the Economist, and the Guardian on ongoing topics relating to the health of democracy such as populism, inequality, social media, and illiberalism.</p> <p>You do not need to have prior knowledge in political science or social sciences, or be a native English speaker/writer to join this seminar.</p>					
[Course Goals]					
<p>The goal of this seminar is for students to learn how to critically read and evaluate the theoretical arguments and empirical evidence provided in the very best of political science literature. Such an intense reading should train non-native English speakers to improve both their English reading and comprehension, but also their engagement with academic texts in other languages. Students are expected to be active in presenting and formulating their ideas during the course, giving them opportunity to improve their output in English.</p>					
[Course Schedule and Contents]					
<p>Each class will involve a student presentation of the reading assignment (20 pages or so) and an in-class discussion of the text. The texts that will be read will be determined according to student interest and capacity at the beginning of the term.</p>					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
<p>Students will be evaluated on their participation in class discussion, class presentations and weekly reading reports, and a final term paper (2,000 words) = each worth approximately a third of their grade.</p>					
[Textbook]					
Instructed during class					
----- Continue to Modern Classics in Political Science-E2(2) ↓ ↓ ↓					

Modern Classics in Political Science-E2(2)	
[Reference book, etc.]	
(Reference book) Introduced during class	
[Regarding studies out of class (preparation and review)]	
Students will need to spend at least 3 hours a week, reading and preparing for discussion of the text.	
[Others (office hour, etc.)]	

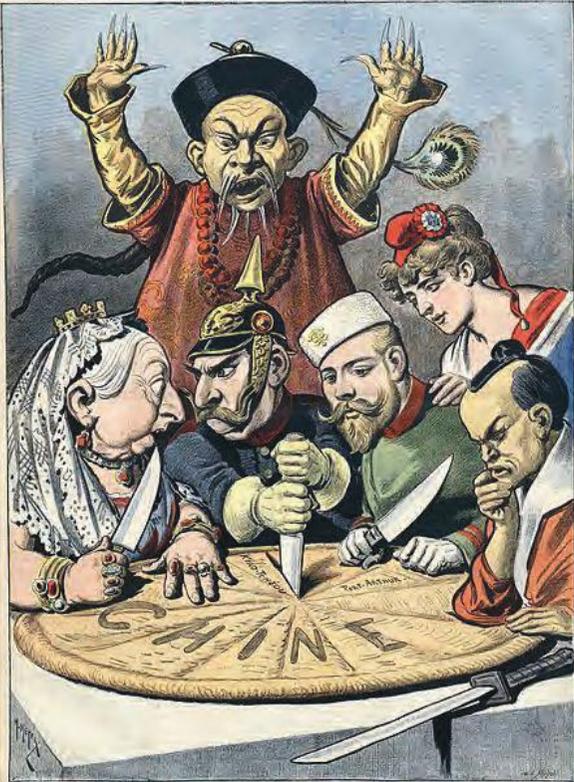
Lecture code: H943001

Course numbering					
Course title <English>	International History 1900 to the Present-E2		Affiliated department, Job title,Name	Graduate School of Law Associate Professor,MURPHY, Mahon	
	International History 1900 to the Present-E2				
Group	Humanities and Social Sciences		Field(Classification)	Jurisprudence, Politics and Economics(Issues)	
Language	English		Old group	Group A	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Wed.4		Target year	2nd year students or above	Eligible students For all majors
(Students of Faculty of Law cannot take this course as liberal arts and general education course. Please register the course with your department.)					
[Outline and Purpose of the Course]					
This course will introduce Students to the international history of the modern world. It will stretch from the origins of the First World War up to the War on terror in the early 21st century. It will give students an overview of the international history of the world outside of East Asia. The lectures will focus on main theme as outlined below with students encouraged to study deeply on a chosen area. The course will focus on the international implications of each topic under discussion with primary sources and other media such as photographs, music and film to give students a true understanding of the broad sweep of the international history of the last 120 years.					
[Course Goals]					
Students will obtain a working knowledge of the history of the modern world and will be able to demonstrate this through essays.					
[Course Schedule and Contents]					
The lectures will develop as follows:					
<ol style="list-style-type: none"> 1. Introduction Lecture 2. Great Power Rivalry and the First World War 1900-1917 3. The Russian Revolution and the Comintern 4. International Cooperation and The Creation of the League of Nations 5. The Rise of Fascism 6. The Origins of the Second World War 7. The Beginning of the Cold War 8. Neutralism and the Rise of the Third World 9. Africa: Decolonisation and Independence 10. The Arab-Israeli Conflict 11. European Integration 12. The End of the Cold War 13. The era of the War on Terror 14. Review lecture 					
----- Continue to International History 1900 to the Present-E2(2) ↓ ↓ ↓					

International History 1900 to the Present-E2(2)
[Class requirement]
None
[Method, Point of view, and Attainment levels of Evaluation]
Written Examination during the Official Examination Term Evaluation on Class performance through attendance and participation
[Textbook]
Antony Best 『An International History of the Twentieth Century and Beyond (3rd Edition)』 (Routledge)
[Regarding studies out of class (preparation and review)]
Students will be assigned recommended reading for each class, usually one short article or primary source document.
[Others (office hour, etc.)]
 <p>EXPOSITION INTERNATIONALE PARIS 1937</p>

Lecture code: H944001

Course numbering					
Course title <English>	An International History of East Asia 1839-1945-E2		Affiliated department, Job title,Name	Graduate School of Law Associate Professor,MURPHY, Mahon	
	An International History of East Asia 1839-1945-E2				
Group	Humanities and Social Sciences		Field(Classification)	Jurisprudence, Politics and Economics(Issues)	
Language	English		Old group	Group A	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Tue.2		Target year	Mainly 1st & 2nd year students	Eligible students For all majors
[Outline and Purpose of the Course]					
<p>This course will introduce students to the International History of East Asia from the First Opium War in 1839 to the end of the Second World War in 1945. Students will understand how global connections affected the development of the history of East Asia from the period beginning with the Opium Wars and ending with Japan's defeat in the Second World War. The lecture series as outlined below will discuss how commodities such as opium played a role in initially 'opening up' East Asia to modern trade and how this helped to create two opposing modernising trends in the Japanese Empire and China. It will discuss the global flow of ideas such as the racist 'Yellow Peril' doctrine, the Pan-Asian movement, feminism, communism and imperialism. The course will throughout focus on international cooperation and the transfer of ideas not just within East Asia but with also with the wider world. Japan's interaction with the League of Nations and the Kuomintang's flirtations with the Comintern dominated the 1920s. It will then analyse the global context in which the Second-Sino Japanese War broke out in which these two opposing modernising forces clashed.</p>					
[Course Goals]					
Students will gain a knowledge of the international relations of East Asia and be able to demonstrate this through a written essay.					
[Course Schedule and Contents]					
<ol style="list-style-type: none"> 1. Introduction Lecture 2. Opium, Tea, Silk and Silver: East Asia in the mid-1800s Seminar Primary Source Discussion, Treaty of Nanjing 1842, 3. Modernisation: The Meiji Restoration in Japan and Self Strengthening in China, a collision course 4. The Boxer Rebellion and the Anglo-Japanese Alliance 5. 'The Yellow Peril' in Public Discourse 6. Creating an Empire: The Japanese takeover of Taiwan and Korea 7. 'World War Zero' The Russo-Japanese War and the Development of Pan-Asianism 8. The First World War and Empire in Asia 9. Riots, Protests and Self-Determination 10. Ensuring an Everlasting Peace?: The League of Nations and The Institute of Pacific Relations 11. International Communism and the Kuomintang 12. The Path to Global War: The Second Sino-Japanese War 13. The Second World War and the end of the Japanese Empire 14. Review Lecture 					
Continue to An International History of East Asia 1839-1945-E2(2) ↓ ↓ ↓					

An International History of East Asia 1839-1945-E2(2)	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Written Examination during the Official Examination Term Evaluation on Class performance through attendance and participation	
[Textbook]	
Antony Best 『An International History of the Twentieth Century and Beyond (3rd Edition)』 (Routledge)	
[Regarding studies out of class (preparation and review)]	
Students will be given a short primary source to prepare for each class.	
[Others (office hour, etc.)]	
	

Lecture code: N157001

Course numbering		U-LAS10 10002 LE55			
Course title <English>	Calculus with Exercises A Calculus with Exercises A		Affiliated department, Job title,Name	Graduate School of Science Associate Professor,Karel SVADLENKA	
Group	Natural Sciences		Field(Classification)	Mathematics(Foundations)	
Language	English		Old group	Group B	Number of credits 3
Number of weekly time blocks	2	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Tue.2 • Wed.2		Target year	Mainly 1st year students	Eligible students For science students
[Outline and Purpose of the Course]					
Calculus and linear algebra form the essential mathematical background necessary for understanding and developing modern science and technology. In this lecture, basics of calculus required for further pursuing of studies majored in science are explained.					
Calculus with Exercises A strengthens the theoretical base of high school knowledge of differentiation and integration for real functions of one variable, and provides instructions on other more advanced methods of mathematical analysis.					
[Course Goals]					
The objective of this course is to learn and understand basic notions of differentiation and integration of functions of one variable and methods of mathematical analysis based on them, as well as to become able to apply this knowledge to solving problems. In addition to learning the basic calculus, students can learn through this course how to discuss and present mathematical topics in English.					
[Course Schedule and Contents]					
This subject is composed of two interrelated parts: Lecture and Exercises. The exercises sessions will take place basically once in two weeks, their purpose being to deepen the students' understanding of the contents of the lecture sessions through active participation in problem solving and through regular submission of reports.					
In the course outline below, the order in which the given items will be presented is not fixed and depends on the background and understanding of the enrollees.					
1. Fundamental concepts (1 week) Numbers, sets, mappings, basic notions of mathematical logic.					
2. Properties of real numbers and continuous functions (3-4 weeks) Infimum and supremum of sets of real numbers, convergence of sequences, infinite series, limits of functions, definition and basic properties of continuous functions (intermediate value theorem, etc.).					
3. Differentiation of functions of one variable (4-5 weeks) Differential coefficients, derivative, differentiation of composite functions and inverse functions, derivatives of higher order, Taylor expansion, the mean-value theorem and its applications (monotonicity, convexity, extrema), infinitesimals, calculation of approximations*.					
4. Integration of functions of one variable (3-4 weeks) Riemann integral, integrability of continuous functions, definite integrals, the fundamental theorem of calculus, integration by parts and by substitution, improper integrals, length of curve*.					
Continue to Calculus with Exercises A(2) ↓ ↓					

Calculus with Exercises A(2)

Moreover, topics related to
5. Important functions (1-3 weeks) Exponential function, trigonometric functions, logarithm, inverse trigonometric functions, Gamma function.
will be explained according to necessity at the corresponding place.
* denotes optional topics.
[Class requirement]
None
[Method, Point of view, and Attainment levels of Evaluation]
Students will be evaluated based on their performance in both the lecture and the exercises sessions. * Lecture will be graded based mainly on the final examination. * Exercises will be evaluated based mainly on submitted reports and participation in class. The details of the evaluation system will be given by the lecturer in the first lecture.
Students who fail to pass the examination but reach a certain standard are eligible for reexamination.
[Textbook]
Textbook will be announced at the lecture.
[Reference book, etc.]
(Reference book) A. M. Bruckner, J. B. Bruckner, B. S. Thomson 『Elementary Real Analysis』 (This book can be downloaded for free at http://classicalrealanalysis.info/Free-Downloads.php .) M. Spivak 『Calculus』 (Publish or Perish) ISBN:978-0914098911 N. L. Carothers 『Real Analysis』 (Cambridge University Press) ISBN:978-0521497565 E. Hewitt, K. Stromberg 『Real and Abstract Analysis』 (Springer) ISBN:978-0387901381
[Regarding studies out of class (preparation and review)]
It is difficult to follow the lecture without regular study. Therefore, students are expected to devote an amount of time equivalent to the time of the lecture to solve report problems and to review the contents of previous lectures.
[Others (office hour, etc.)]
It is advisable to attend the lecture "Linear Algebra with Exercises A" in parallel. Moreover, it is recommended to register for "Calculus with Exercises B" in the second semester.
There are no fixed office hours. If you wish to have a consultation, please feel free to contact the lecturer.

Lecture code: N158001

Course numbering		U-LAS10 10005 LE55			
Course title <English>	Calculus with Exercises B Calculus with Exercises B		Affiliated department, Job title,Name	Graduate School of Science Associate Professor,Karel SVADLENKA	
Group	Natural Sciences		Field(Classification)	Mathematics(Foundations)	
Language	English		Old group	Group B	Number of credits 3
Number of weekly time blocks	2	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Tue.2 • Wed.2		Target year	Mainly 1st year students	Eligible students For science students
[Outline and Purpose of the Course]					
Calculus and linear algebra form the essential mathematical background necessary for understanding and developing modern science and technology. In this lecture, basics of calculus required for further pursuing of studies majored in science are explained.					
The course Calculus with Exercises B, after providing some more topics on functions of one variable that were not mentioned in "Calculus with Exercises A", explains differentiation and integration of functions of several variables.					
[Course Goals]					
The objective of this course is to learn and understand basic notions of differentiation and integration of functions of one and several variables and methods of mathematical analysis based on them, as well as to become able to apply this knowledge to solving problems. In addition to mastering the basic calculus, students can learn through this course how to discuss and present mathematical topics in English.					
[Course Schedule and Contents]					
This subject is composed of two interrelated parts: Lecture and Exercises. The exercises sessions will take place basically once in two weeks, their purpose being to deepen the students' understanding of the contents of the lecture sessions through active participation in problem solving and through regular submission of reports.					
In the course outline below, the order in which the given items will be presented is not fixed and depends on the background and understanding of the enrollees.					
1. Series and sequences of functions (3-4 weeks) Infinite series (convergence criteria, absolute and conditional convergence), power series (radius of convergence, termwise differentiation and integration), sequences and series of functions (uniform convergence, termwise differentiation and integration).					
2. Sets of points in a plane and in space (2-3 weeks) Distance, convergence of sequences of points, open sets, closed sets, properties of continuous functions.					
3. Differentiation of functions of several variables (4-5 weeks) Partial differential coefficients, total differentiability, tangential plane, gradient vector, differentiation of composite functions (chain rule), Jacobian matrix and determinant, implicit functions, inverse mapping, Taylor's formula, extreme value problems, extreme value problems with constraints.					
4. Integration of functions of several variables (4-5 weeks) <u>Multiple integrals, iterated integrals, calculation of area and volume, change of variables for multiple</u>					
Continue to Calculus with Exercises B(2) ↓ ↓ ↓					

Calculus with Exercises B(2)	
----- integrals, improper integrals.	
[Class requirement]	
Students must attend the course "Calculus with Exercises A" before taking "Calculus with Exercises B". Moreover, students are expected to have mastered the contents of the course "Linear Algebra with Exercises A".	
[Method, Point of view, and Attainment levels of Evaluation]	
Students will be evaluated based on their performance in both the lecture and the exercises sessions. * Lecture will be graded based mainly on the final examination. * Exercises will be evaluated based mainly on submitted reports and participation in class. The details of the evaluation system will be given by the lecturer at the first lecture.	
Students who fail to pass the examination but reach a certain standard are eligible for reexamination.	
[Textbook]	
Textbook will be announced at the lecture.	
[Reference book, etc.]	
(Reference book) A. M. Bruckner, J. B. Bruckner, B. S. Thomson 『Elementary Real Analysis』 (The book can be downloaded for free at http://classicalrealanalysis.info/Free-Downloads.php .) M. Lovric 『Vector Calculus』 (John Wiley & Sons) ISBN:978-0-4717-25695 I. Kriz, A. Pultr 『Introduction to Mathematical Analysis』 (Birkhauser) ISBN:978-3-0348-0635-0	
[Regarding studies out of class (preparation and review)]	
It is difficult to follow the lecture without regular study. Therefore, students are expected to devote an amount of time equivalent to the time of the lecture to solve report problems and to review the contents of previous lectures.	
[Others (office hour, etc.)]	
It is desirable to take the course "Linear Algebra with Exercises B" in parallel. There are no fixed office hours. If you wish to have a consultation, please feel free to contact the lecturer.	

Lecture code: N159001

Course numbering		U-LAS10 10008 LE55			
Course title <English>	Linear Algebra with Exercises A Linear Algebra with Exercises A		Affiliated department, Job title,Name	Graduate School of Science Associate Professor, COLLINS, Benoit Vincent Pierre	
Group	Natural Sciences		Field(Classification)	Mathematics(Foundations)	
Language	English		Old group	Group B	Number of credits 3
Number of weekly time blocks	2	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Mon.3 • Tue.2		Target year	Mainly 1st year students	Eligible students For science students
[Outline and Purpose of the Course]					
Calculus and linear algebra form the essential mathematical background necessary for understanding and developing modern science and technology. In this lecture, basics of Linear Algebra required for further pursuing of studies majored in science are explained.					
In the Linear Algebra A class, students will learn to manipulate concretely vectors, matrices, and systems of linear equations.					
[Course Goals]					
The goal of this class is to learn to manipulate concretely vectors, matrices, and systems of linear equations. In addition to learning linear algebra, students can learn how to discuss and present mathematical topics in English through this course.					
[Course Schedule and Contents]					
This subject is composed of two interrelated parts: Lecture and Exercises. The exercises sessions will take place basically once in two weeks, their purpose being to deepen the students' understanding of the contents of the lecture sessions through active participation in problem solving and through regular submission of reports.					
In the course outline below, the order in which the given items will be presented is not fixed and depends on the background and understanding of enrollees.					
1. Fundamental concepts (1 week)					
-numbers, sets, mappings, basic notions of mathematical logic					
2. Vectors in the plane and 2x2 matrices (2 weeks)					
-matrix and vector calculus, matrix inverses, Cayley Hamilton theorem					
-linear transformations of the plane (rotation, reflections, etc) and matrices					
-linear systems of equations and matrices					
3. Concrete vector spaces and matrices (5-7 weeks)					
-vectors, vector calculus, linear span					
-matrices, matrix calculus (addition, scalar product, product)					
-examples of matrices (2-3 weeks)					
-elementary operations on matrices, rank, invertible matrices, inverse matrix					
-solving linear equations, structure of solutions (3-4 weeks)					
4. Determinant (4-6 weeks)					
-row/column substitution and signature; definition of determinant and properties (3-4 weeks)					
-computation of determinant, Cramer's rule, volume and determinant (1-2 weeks)					
----- Continue to Linear Algebra with Exercises A(2) ↓ ↓ ↓					

Linear Algebra with Exercises A(2)	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Students will be evaluated based on their performance in both the lecture and the exercises sessions.	
* Lecture will be graded based mainly on the final examination.	
* Exercises will be evaluated based mainly on submitted reports and participation in class.	
The details of the evaluation system will be given by the lecturer at the first lecture.	
Students who fail to pass the examination but reach a certain standard are eligible for reexamination.	
[Textbook]	
Not used	
[Reference book, etc.]	
(Reference book)	
Jim Hefferon 『Linear Algebra and Its Applications.』	
This text is Free, either the GNU Free Documentation License or the Creative Commons License Creative Commons Attribution-ShareAlike 2.5 License.	
Website:	
http://joshua.smcvt.edu/linearalgebra/	
[Regarding studies out of class (preparation and review)]	
To be announced.	
[Others (office hour, etc.)]	
It is advisable to attend the lecture “Calculus with Exercises A” in parallel.	
Moreover, it is recommended to register for "Linear Algebra with Exercises B" in the second semester.	
Students are welcome to ask questions during, at the beginning or at the end of the class.	
The instructor encourages students to arrange an appointment with him if they have questions.	

Lecture code: N160001

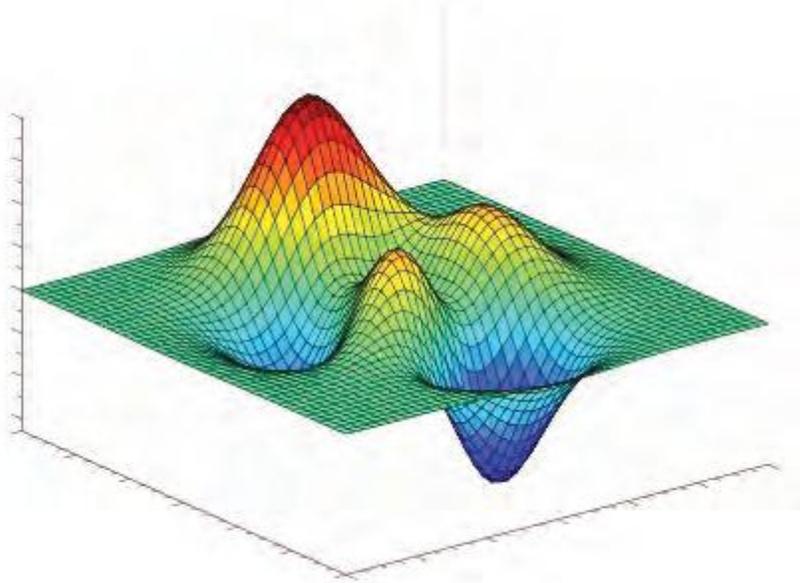
Course numbering		U-LAS10 10011 LE55			
Course title <English>		Linear Algebra with Exercises B Linear Algebra with Exercises B		Affiliated department, Job title,Name Graduate School of Science Associate Professor,COLLINS, Benoit Vincent Pierre	
Group	Natural Sciences		Field(Classification)		Mathematics(Foundations)
Language	English		Old group	Group B	Number of credits 3
Number of weekly time blocks	2	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Mon.3 • Tue.2		Target year	Mainly 1st year students	Eligible students For science students
[Outline and Purpose of the Course]					
Linear algebra is one of the fundamental and important parts of mathematics. With Linear Algebra A and B, students are expected to understand not only the fundamental concepts of vector spaces and linear mappings, but also the concrete treatments of matrices and systems of linear equations.					
[Course Goals]					
The objective of this course is to introduce linear algebra concepts such as vector spaces, linear mappings, matrices and systems of linear equations. In addition to learning linear algebra, students can learn how to discuss and present mathematical topics in English through this course.					
[Course Schedule and Contents]					
1. Abstract Vector spaces (1--3) Basis, dimension, linear mappings and matrices, (4--5) change of bases, subspaces, direct sums, kernel and image					
2. Euclidean Spaces (6--7) Inner product, orthogonal matrices, unitary matrices, (8--10) orthonormal basis and orthogonal complements					
3. Eigenvalues and diagonalization of matrices (11--12) Eigenvalues and eigenvectors, eigenpolynomial, (13--14) diagonalization of symmetric matrices by orthogonal matrices (diagonalization of Hermitian matrices by unitary matrices)					
[Class requirement]					
Students are expected to understand Calculus with Exercises A and Linear Algebra with Exercises A.					
[Method, Point of view, and Attainment levels of Evaluation]					
Students will be evaluated based on their performance in both the lecture and the exercises sessions. * Lecture will be graded based mainly on the final examination. * Exercises will be evaluated based mainly on submitted reports and participation in class. The details of the evaluation system will be given by the lecturer at the first lecture. Students who fail to pass the examination but reach a certain standard are eligible for reexamination.					
----- Continue to Linear Algebra with Exercises B(2) ↓ ↓ ↓					

Linear Algebra with Exercises B(2)	

[Textbook]	
Not used	
[Reference book, etc.]	
(Reference book) Introduced during class	
[Regarding studies out of class (preparation and review)]	
To be announced.	
[Others (office hour, etc.)]	
It is advisable to attend the lecture “Calculus with Exercises B” in parallel. Students are welcome to ask questions during, at the beginning or at the end of the class. The instructor encourages students to arrange an appointment with him if they have questions.	

Lecture code: N168001

Course numbering		U-LAS10 10014 LE55			
Course title <English>	Mathematical Description of Natural Phenomena		Affiliated department, Job title, Name	Graduate School of Engineering Senior Lecturer, Chang, Kai-Chun	
	Mathematical Description of Natural Phenomena				
Group	Natural Sciences		Field(Classification)	Mathematics(Foundations)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Tue.3		Target year	Mainly 1st year students	Eligible students For science students
[Outline and Purpose of the Course]					
<p>One of the major reasons of providing this course is the noticeable gap between high school mathematics and college mathematics. The gap has led to a marked decline in the students' ability not only to grasp physical phenomena observed in engineering disciplines but also to explain principles behind the phenomena - e.g. to describe and analyze natural phenomena by means of differential equations.</p> <p>This course aims at bridging the gap between high school mathematics and college mathematics. Through this course, students learn how the physical phenomena in engineering disciplines - e.g. vibration of a structure, wave propagation, fluid dynamics and so on - are described in differential equations. They also learn how those physical phenomena are solved by differential equations.</p>					
[Course Goals]					
<ul style="list-style-type: none"> • To understand the relationship between scientific observation and mathematics. • To understand how the physical phenomena in engineering disciplines are described in differential equations, as well as how to solve them. 					
[Course Schedule and Contents]					
<p>* To achieve the goal, this lecture will cover the following topics.</p> <ol style="list-style-type: none"> 1. Picture of Calculus, basics of differentiation and integration 2. e, the base of the natural logarithm 3. Complex numbers, exponential function, logarithmic function and trigonometric functions 4. Differential equations and physical phenomena modelling 					
<p>* The lecture is designed to cover following topics, in detail.</p> <ol style="list-style-type: none"> 1. Introduction <ul style="list-style-type: none"> - Describing phenomena, input-output system model, etc. [2 weeks] 2. Basics of Calculus <ul style="list-style-type: none"> - Picture of Calculus, derivatives, basic rules, chain rule, implicit differentiation, inverse functions and their derivatives, etc. [4 weeks] - Exponential and logarithmic functions, their derivatives, characterizations of exponential functions, etc. [2 weeks] 3. Differential equations and phenomenon descriptions 					
<p>Continue to Mathematical Description of Natural Phenomena(2) ↓ ↓</p>					

Mathematical Description of Natural Phenomena(2)	
<p>- Radioactive decay, population growth/decay, mixed growth/decay [3 weeks] - Spring problems, equations of motion, simple harmonic motions, damped vibrations, etc. [3 weeks]</p>	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Quizzes and exercises (50%) and final examination (50%)	
[Textbook]	
<p>Instructed during class Handouts distributed in class or uploaded to PandA</p>	
[Reference book, etc.]	
<p>(Reference book) G. Strang 『Calculus, 2nd ed.』 (Wellesley-Cambridge Press) W.F. Trench 『Elementary Differential Equations』 (Brooks/Cole)</p>	
[Regarding studies out of class (preparation and review)]	
Students are expected to spend at least 2 hours on this course for preview and review. More than half of that time is spent preparing for class and doing assignments.	
[Others (office hour, etc.)]	
Any inquiry to the instructor: chang.kaichun.4z[at]kyoto-u.ac.jp. (replace {at} with @)	
	

Lecture code: N178001

Course numbering					
Course title <English>	Mathematical Description of Natural Phenomena-E2		Affiliated department, Job title, Name	Graduate School of Engineering Senior Lecturer, ISLAM, A K M Mahfuzul	
	Mathematical Description of Natural Phenomena-E2				
Group	Natural Sciences		Field(Classification)	Mathematics(Foundations)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Tue.2		Target year	Mainly 1st year students	Eligible students For science students
[Outline and Purpose of the Course]					
<p>Mathematics is a powerful tool to understand the nature. Generally, only problem-solving techniques are taught till high school. However, the beauty of mathematics lies in creating abstractions. Abstraction is creating new names for some values, processes or understandings. We understand a particular phenomenon first and then we name that phenomenon so that we can use that name in further calculation to help our understanding. For example, we have named PI as a particular value that requires some explanation. But, when we use PI in calculations we do not break down that concept every time. This course aims at developing a solid understanding of several mathematical concepts. Through this course, students will learn how various physical phenomena such as vibration of a structure, wave propagation, fluid dynamics and so on - can be described in differential equations. They will also learn how to solve those physical problems using different techniques.</p>					
[Course Goals]					
<ul style="list-style-type: none"> - To understand the relationship between scientific observation and mathematics - To learn why and how most physical phenomena can be expressed using differential equations - To learn how to formulate differential equations from physical problems - To learn how to solve the differential equations 					
[Course Schedule and Contents]					
<ol style="list-style-type: none"> 1. Introduction [2 weeks] <ol style="list-style-type: none"> a) Types of natural phenomena b) Different types of problems and relationship with differential equations 2. Basics of Calculus [6 weeks] <ol style="list-style-type: none"> a) Review of calculus: derivatives, basic rules, chain rule, implicit differentiation, inverse functions, and their derivatives, etc. b) Exponential and logarithmic functions, their derivatives, characterizations of exponential functions, etc. 3. Complex number [2 weeks] 4. Differential equations and partial differential equations [2 weeks] 5. Modeling of natural phenomena using differential equations [2 weeks] 6. Examinations [1 week] 7. Feedback [1 week] 					
<p>----- Continue to Mathematical Description of Natural Phenomena-E2(2) ↓ ↓ ↓</p>					

Mathematical Description of Natural Phenomena-E2(2)
[Class requirement]
None
[Method, Point of view, and Attainment levels of Evaluation]
Quizzes and exercises (50%) and final examination (50%)
[Textbook]
Instructed during class
[Reference book, etc.]
(Reference book)
Introduced during class
[Regarding studies out of class (preparation and review)]
Preparation and review are required. Handouts will be provided beforehand. Sample programs (Matlab or Python) will also be provided to deepen the understanding and grow a feeling of several mathematical concepts. Students are encouraged to run the programs, visualize how differential equations evolve.
[Others (office hour, etc.)]
Office hour after class.

Lecture code: N174001

Course numbering					
Course title <English>	Quest for Mathematics I-E2 Quest for Mathematics I-E2		Affiliated department, Job title,Name	Graduate School of Informatics Program-Specific Associate Professor,Croydon, David Alexander	
Group	Natural Sciences		Field(Classification)	Mathematics(Foundations)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Fri.2		Target year	Mainly 1st & 2nd year students	Eligible students For liberal arts students
[Outline and Purpose of the Course]					
This class aims at introduction of calculus for those who did not study "Mathematics III (of the Japanese high school standard)".					
[Course Goals]					
The goal of the class is to solve problems of the same level with those in entrance examination for science students. An additional goal of this course is to give a chance to the students to present and discuss mathematics in English.					
[Course Schedule and Contents]					
The course will cover the following topics, and each of them is read in 3-4 weeks: 1. Limit of series and continuous functions 2. Differentiation of elementary functions (i.e. sine, cosine, exponential etc.) 3. Brief introduction of the Riemann integral and differential equations 4. Applications.					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
The evaluation of the course will take into account the following criteria: -homework (20%) -presentation (10%) -final exam (70%)					
[Textbook]					
Not used					
[Reference book, etc.]					
(Reference book) Thomas 『Calculus』 (Pearson)					
[Regarding studies out of class (preparation and review)]					
Exercises are given in class and students are required to solve them for clear understanding of the topics in class.					
[Others (office hour, etc.)]					
High school text book "Mathematics III (高等学校 数学 III)" based on the Japanese high school standard is useful to understand of the subject of the class. Office hours are not assigned and it is advisable to make comments willingly during and after the class.					

Lecture code: N174002

Course numbering					
Course title <English>	Quest for Mathematics I-E2 Quest for Mathematics I-E2		Affiliated department, Job title,Name	Graduate School of Engineering Senior Lecturer, Arseniy Aleksandrovich, Kuzmin	
Group	Natural Sciences	Field(Classification)	Mathematics(Foundations)		
Language	English	Old group	Group B	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • First semester
Day/period	Tue.2	Target year	Mainly 1st & 2nd year students	Eligible students	For all majors
[Outline and Purpose of the Course]					
In the "Quest for Mathematics", complex numbers and their applications are introduced. At first, we will follow some of the steps of their invention and learn to understand their basic properties. The importance of these numbers in physics and engineering will be explained: quantum mechanics or even calculation of some electric circuits rely on them. In this course we explore geometrical applications of complex numbers, geometrical transformations, and complex functions.					
[Course Goals]					
<ul style="list-style-type: none"> - To understand the origins and importance of complex numbers - Understanding of the geometric representation of complex numbers - Learn the complex numbers arithmetic - Learn the relation between trigonometric and exponential functions - Acquire the ability to use complex numbers 					
[Course Schedule and Contents]					
In this course the following topics are covered:					
<ol style="list-style-type: none"> 1. Introduction and history of complex numbers, their definition and basic properties. 2. The complex plane (Argand diagram). 3. Cubic equation. 4. De Moivre's formula, trigonometric functions 5. Vectors and complex numbers. 6. Euler's formula. 7. Introduction to complex analysis. 					
Each subject will be covered in 1 to 3 lectures.					
[Class requirement]					
No knowledge of complex numbers is required to join this class. All necessary concepts are introduced during the lecture.					
----- Continue to Quest for Mathematics I-E2(2) ↓ ↓ ↓					

Quest for Mathematics I-E2(2)
[Method, Point of view, and Attainment levels of Evaluation]
Evaluation will be based on: 10% Attendance 20% Homework 20% Quiz 50% Final exam
[Textbook]
Not used
[Reference book, etc.]
(Reference book) Introduced during class
[Regarding studies out of class (preparation and review)]
Preparation for lectures will include revision of class materials and homework assignments. Detailed instructions will be given during the class.
[Others (office hour, etc.)]

Lecture code: N175001

Course numbering					
Course title <English>	Quest for Mathematics II-E2 Quest for Mathematics II-E2		Affiliated department, Job title,Name	Research Institute for Mathematical Sciences Senior Lecturer,TAN, Fucheng	
Group	Natural Sciences		Field(Classification)	Mathematics(Foundations)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Seminar		Course offered year/period 2019 • First semester
Day/period	Thu.4		Target year	All students	Eligible students For all majors
[Outline and Purpose of the Course]					
You might have heard of the following expression from Gauss (1777-1855): "Mathematics is the queen of sciences and number theory is the queen of mathematics. She often condescends to render service to astronomy and other natural sciences, but in all relations she is entitled to the first rank."					
What is number theory? At the most basic level, it is the study of the properties of the integers $Z = \{\dots, -2, -1, 0, 1, 2, \dots\}$.					
In this course, we will study certain topics in elementary number theory, including (but not limited to) divisibility, congruences, quadratic forms, and Diophantine equations. Although modern number theory uses techniques from algebra, analysis, geometry, topology, and logic, this course, as an elementary introduction to number theory, does not require the use of these advanced tools.					
[Course Goals]					
The class is meant to help students of all disciplines improve their knowledges in number theory. Moreover, students will improve their communication skills in English via oral discussions and presentations.					
[Course Schedule and Contents]					
Below is the contents and schedules of the course. Some of these topics may be assigned to the students for their presentations. The lectures and presentations, as well as their orders, may be modified, depending on students' backgrounds and understanding of the course materials. The instructor will provide corrections and comments on students' presentations.					
(1) Introduction (Week 1) -Some basics in set theory and logic, motivating examples and conjectures, remarks on the course materials.					
(2) Divisibility (Weeks 2-3) -The division algorithm, the Euclidean algorithm, prime numbers; -The fundamental theorem of arithmetic, infinity of the set of prime numbers, the binomial theorem.					
(3) Congruences (Weeks 4-6) -Basic definitions and properties, Fermat's theorem and Euler's generalization, Wilson's theorem; -The Chinese Remainder theorem, Hensel's lemma; -Prime (power) moduli, primitive roots.					
(4) Quadratic reciprocity (Weeks 7-9) -Legendre symbols, Lemma of Gauss, the Gaussian reciprocity law;					
Continue to Quest for Mathematics II-E2(2) ↓ ↓ ↓					

Quest for Mathematics II-E2(2)
-Jacobi symbols, binary quadratic forms; -Two squares theorem.
(5) Some functions in number theory (Week 10) -Arithmetic functions, the Mobius inversion formula, Riemann Zeta function.
(6) Continued fractions (Weeks 11-12) -Finite/infinite continued fractions, irrational numbers; -Pell's equation, four squares theorem.
(7) Diophantine equations (Weeks 13-14) -Linear equations, Pythagorean triangles; -Fermat's infinite descent, rational points on conics.
[Class requirement]
There are no formal prerequisites for the class. Some familiarity with mathematical proofs (e.g. as one sees in Calculus and Linear Algebra) will be helpful, but not required. If you are not used to proofs, you will hopefully pick up these skills during the course!
[Method, Point of view, and Attainment levels of Evaluation]
The evaluation consists of three weighted parts, which may be modified, depending on the number of students in class:
-Discussion performance in class (30%).
-In-class presentation (30%): Each student reviews some mathematical material assigned by the instructor.
-Final presentation (40%): Each student covers one mathematical topic assigned by the instructor. It is possible for a student to choose their own topic, with the instructor's approval.
[Textbook]
A. Weil 『Number Theory for Beginners』 (Springer) ISBN:9781461299585 (E-book available at Kyoto U library) Teiji Takagi 『Lectures on Elementary Theory of Numbers』 (Kyoritsu) ISBN:9784320010017 (This text is classical and goes further. It is in Japanese, available at Kyoto U Library.) Ivan Niven, Herbert Zuckerman, and Hugh Montgomery 『An Introduction to the Theory of Numbers』 (Wiley) ISBN:9780471625469 (This book is quite comprehensive. It is in English, available at Kyoto U Library.)
[Reference book, etc.]
(Reference book) Kenneth Ireland and Michael Rosen 『A Classical Introduction to Modern Number Theory』 (Springer) ISBN:9780387973296 (This book may be helpful to the students who have studied modern algebra systematically.) J. S. Milne 『Algebraic Number Theory』 (This lecture note may be helpful to the students who have studied modern algebra systematically.)
Continue to Quest for Mathematics II-E2(3) ↓ ↓ ↓

Quest for Mathematics II-E2(3)

[Regarding studies out of class (preparation and review)]

Along with preparation and review, students are encouraged to form study groups.

[Others (office hour, etc.)]

Lecture code: N175002

Course numbering					
Course title <English>	Quest for Mathematics II-E2 Quest for Mathematics II-E2		Affiliated department, Job title,Name	Research Institute for Mathematical Sciences Senior Lecturer,TAN, Fucheng	
Group	Natural Sciences		Field(Classification)	Mathematics(Foundations)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Seminar		Course offered year/period 2019 • Second semester
Day/period	Thu.4		Target year	All students	Eligible students For all majors
[Outline and Purpose of the Course]					
You might have heard of the following expression from Gauss (1777-1855): "Mathematics is the queen of sciences and number theory is the queen of mathematics. She often condescends to render service to astronomy and other natural sciences, but in all relations she is entitled to the first rank."					
What is number theory? At the most basic level, it is the study of the properties of the integers $Z = \{\dots, -2, -1, 0, 1, 2, \dots\}$.					
In this course, we will study certain topics in elementary number theory, including (but not limited to) divisibility, congruences, quadratic forms, and Diophantine equations. Although modern number theory uses techniques from algebra, analysis, geometry, topology, and logic, this course, as an elementary introduction to number theory, does not require the use of these advanced tools.					
[Course Goals]					
The class is meant to help students of all disciplines improve their knowledges in number theory. Moreover, students will improve their communication skills in English via oral discussions and presentations.					
[Course Schedule and Contents]					
Below is the contents and schedules of the course. Some of these topics may be assigned to the students for their presentations. The lectures and presentations, as well as their orders, may be modified, depending on students' backgrounds and understanding of the course materials. The instructor will provide corrections and comments on students' presentations.					
(1) Introduction (Week 1) -Some basics in set theory and logic, motivating examples and conjectures, remarks on the course materials.					
(2) Divisibility (Weeks 2-3) -The division algorithm, the Euclidean algorithm, prime numbers; -The fundamental theorem of arithmetic, infinity of the set of prime numbers, the binomial theorem.					
(3) Congruences (Weeks 4-6) -Basic definitions and properties, Fermat's theorem and Euler's generalization, Wilson's theorem; -The Chinese Remainder theorem, Hensel's lemma; -Prime (power) moduli, primitive roots.					
(4) Quadratic reciprocity (Weeks 7-9) -Legendre symbols, Lemma of Gauss, the Gaussian reciprocity law;					
Continue to Quest for Mathematics II-E2(2) ↓ ↓ ↓					

Quest for Mathematics II-E2(2)
-Jacobi symbols, binary quadratic forms; -Two squares theorem.
(5) Some functions in number theory (Week 10) -Arithmetic functions, the Mobius inversion formula, Riemann Zeta function.
(6) Continued fractions (Weeks 11-12) -Finite/infinite continued fractions, irrational numbers; -Pell's equation, four squares theorem.
(7) Diophantine equations (Weeks 13-14) -Linear equations, Pythagorean triangles; -Fermat's infinite descent, rational points on conics.
[Class requirement]
There are no formal prerequisites for the class. Some familiarity with mathematical proofs (e.g. as one sees in Calculus and Linear Algebra) will be helpful, but not required. If you are not used to proofs, you will hopefully pick up these skills during the course!
[Method, Point of view, and Attainment levels of Evaluation]
The evaluation consists of three weighted parts, which may be modified, depending on the number of students in class: -Discussion performance in class (30%). -In-class presentation (30%): Each student reviews some mathematical material assigned by the instructor. -Final presentation (40%): Each student covers one mathematical topic assigned by the instructor. It is possible for a student to choose their own topic, with the instructor's approval.
[Textbook]
Andre Weil 『Number Theory for Beginners.』 (Springer) ISBN: 9781461299585 (E-book available at Kyoto U library) Teiji Takagi 『Lectures on Elementary Theory of Numbers.』 (Kyoritsusha) ISBN:9784320010017 (This text is classical and goes further. It is in Japanese, available at Kyoto U Library.) Ivan Niven, Herbert Zuckerman, and Hugh Montgomery 『An Introduction to the Theory of Numbers.』 (Wiley) ISBN:9780471625469 (This book is quite comprehensive. It is in English, available at Kyoto U Library.)
[Reference book, etc.]
(Reference book) Kenneth Ireland and Michael Rosen 『A Classical Introduction to Modern Number Theory.』 (Springer) ISBN:9780387973296 (This book may be helpful to the students who have studied modern algebra systematically.) J. S. Milne 『Algebraic Number Theory.』 (This lecture note may be helpful to the students who have studied modern algebra systematically.)
Continue to Quest for Mathematics II-E2(3) ↓ ↓ ↓

Quest for Mathematics II-E2(3)

[Regarding studies out of class (preparation and review)]

Along with preparation and review, students are encouraged to form study groups.

[Others (office hour, etc.)]

Lecture code: N169001

Course numbering		U-LAS10 20002 LE55			
Course title <English>	Advanced Calculus I-Vector Calculus Advanced Calculus I-Vector Calculus		Affiliated department, Job title,Name	Graduate School of Engineering Associate Professor, QURESHI, Ali Gul	
Group	Natural Sciences		Field(Classification)	Mathematics(Development)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Wed.5		Target year	2nd year students or above	Eligible students For science students
[Outline and Purpose of the Course]					
Based on the knowledge of Calculus with Exercises A/B and Linear Algebra with Exercises A/B , or Calculus A/ B and Liner Algebra A/B, this course explains calculus of multiple variables and vector calculus. The course introduces the concepts of motion and potential in more than 2 dimensions, which are based on partial differentiation and integration related with multiple dimensions (such as line integral and surface integral).					
[Course Goals]					
To learn basics of calculus in functions of two or more variables, which are used in many other courses in natural sciences (such as Physics) and engineering.					
[Course Schedule and Contents]					
1. Basic operations with vectors (5 Weeks) - Dot and cross products; derivatives and integration of Vector Valued Functions					
2. Vectors in other coordinate systems (2 Weeks) - Frenet-Serret frame, Spherical and Cylindrical coordinate systems					
3. Vector fields and potentials at n-dimensional Euclidean spaces (2 weeks) - Operations over the vector fields (gradient, curl and divergence), scalar potential and vector potential					
4. Line integrals and surface integrals (5 Weeks) - Line integrals at 2-dimensional plane, surface integrals at 3-dimensional space, and integral theorems (Divergence theorem of Gauss, the Green's formula and the Stokes's theorem)					
[Class requirement]					
To understand Calculus with Exercises A/B and Linear Algebra with Exercises A/B, or Calculus A/B and Linear Algebra A/B.					
[Method, Point of view, and Attainment levels of Evaluation]					
Based on Mid-term Examination (40%), and final examination (60%).					
[Textbook]					
Instructed during class					
----- Continue to Advanced Calculus I-Vector Calculus(2) ↓ ↓ ↓					

Advanced Calculus I-Vector Calculus(2)	
[Reference book, etc.]	
(Reference book)	
Joel R. Hass, Christopher E. Heil and Maurice D. Weir 『Thomas' Calculus, 14th ed.』 (Pearson)	
Erwin Kreyszig 『Advanced Engineering Mathematics, 10th ed.』 (Wiley)	
Frank Ayres Jr. and Elliott Mendelson 『Calculus, 6th ed.』 (McGraw-Hill)	
Robert C. Wrede and Murray R. Spiegel 『Advanced Calculus, 3rd ed.』 (McGraw-Hill)	
[Regarding studies out of class (preparation and review)]	
Students are encouraged to do assigned homework related to the classes.	
[Others (office hour, etc.)]	

Lecture code: N170001

Course numbering		U-LAS10 20004 LE55			
Course title <English>	Advanced Calculus II-Differential Equations		Affiliated department, Job title,Name	Graduate School of Engineering Associate Professor, QURESHI, Ali Gul	
	Advanced Calculus II-Differential Equations				
Group	Natural Sciences		Field(Classification)	Mathematics(Development)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Wed.5		Target year	2nd year students or above	Eligible students For science students
[Outline and Purpose of the Course]					
Based on the knowledge of Calculus with Exercises A/B and Linear Algebra with Exercises A/B or Calculus A/ B and Liner Algebra A/B, this course explains ordinary differential equations. Starting from the basic solutions techniques (such as separation of variables and integrating factors) for differential equations, the course introduces the second order linear differential equations and their solution. Differential equations are studied in context of modelling of various physical situations (for example, vibrations, mixing problem, population dynamics, etc.).					
[Course Goals]					
To learn the different types of differential equations and their solution methods.					
[Course Schedule and Contents]					
1. Elementary methods of solution (6 weeks) - Separation of variables, linear first order differential equations, total differential equations (exact differential equations) and integrating factors 2. Existence and uniqueness of the solution of initial value problems (4 weeks) - Space of continuous functions and it's properties (normed spaces, completeness), iterated approximation, Cauchy-Lipschitz's theorem and the connection of solution 3. Linear differential equations (4 weeks) - Space of solutions of homogeneous equations, variation of parameters, exponential function for matrices and Wronskian determinant.					
[Class requirement]					
To understand Calculus with Exercises A/B and Linear Algebra with Exercises A/B or Calculus A/B and Linear Algebra A/B.					
[Method, Point of view, and Attainment levels of Evaluation]					
Mid-term Examination (40%), final examination(60%).					
[Textbook]					
Instructed during class					
[Reference book, etc.]					
(Reference book) Richard Bronson and Gabriel Costa 『Differential Equations, 4th ed.』 (McGraw-Hill) Wolfgang Walter 『Ordinary Differential Equations』 (Springer) Erwin Kreyszig 『Advanced Engineering Mathematics, 10th ed.』 (Wiley)					
Continue to Advanced Calculus II-Differential Equations(2) ↓ ↓					

Advanced Calculus II-Differential Equations(2)	
----- Joel R. Hass, Christopher E. Heil and Maurice D. Weir 『Thomas' Calculus, 14th ed.』 (Pearson)	
[Regarding studies out of class (preparation and review)]	
Students are encouraged to do assigned homework related to the classes.	
[Others (office hour, etc.)]	
Content of this course is independent from Advanced Calculus I of 1st semester.	

Lecture code: N106001

Course numbering		U-LAS10 20006 LE55			
Course title <English>	Advanced Linear Algebra Advanced Linear Algebra		Affiliated department, Job title,Name	Graduate School of Engineering Senior Lecturer, Chang, Kai-Chun	
Group	Natural Sciences		Field(Classification)	Mathematics(Development)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Fri.2		Target year	2nd year students or above	Eligible students For science students
[Outline and Purpose of the Course]					
Linear Algebra is a fundamental tool commonly used in many fields, in not only mathematics but also natural sciences, engineering, etc. This course extends the contents in "Linear Algebra A/B" courses (provided majorly for 1st year students) and discusses advanced concepts of linear algebra, such as orthogonality, diagonalization, Singular Value Decomposition (SVD) of a matrix, Jordan canonical form, and their applications to real-world problems, etc.					
[Course Goals]					
<ul style="list-style-type: none"> • To acquire the advanced concepts of linear algebra, such as orthogonality, diagonalization, SVD of matrix. • To understand the applications of linear algebra to real-world problems. 					
[Course Schedule and Contents]					
1. Review of linear algebra [2 week] - Big picture, rank, dimension, LU/LDU factorization, Gauss-Jordan elimination, etc. - vector spaces, subspaces, nullspace, complete solutions, four subspaces and their dimensions and orthogonality, etc.					
2. Orthogonality and its applications [3 weeks] - Orthogonality and orthogonality complement, projections, least square approximations, orthogonal bases, Gram-Schmidt process, etc.					
3. Eigenvalues, eigenvectors, and their applications [4 weeks] - Eigenvalues and eigenvectors, diagonalization, matrix power, singular value decomposition (SVD) and their application to difference equations, differential equations and Markov process, etc.					
4. Jordan canonical form [3 weeks] - minimal polynomials, generalized eigenvectors, Jordan canonical form, and their applications.					
5. Optional topics [2 weeks] - numerical solutions, complex vectors and matrices, other applications, etc.					
----- Continue to Advanced Linear Algebra(2) ↓ ↓ ↓					

Advanced Linear Algebra(2)	
[Class requirement]	
Suggested prerequisites: Calculus A/B and Linear Algebra A/B or Calculus with Exercises A/B and Linear Algebra with Exercises A/B.	
[Method, Point of view, and Attainment levels of Evaluation]	
Quizzes or assignments (50%); final examination (50%)	
[Textbook]	
Instructed during class	
[Reference book, etc.]	
(Reference book) Strang, G. (2009) 『Introduction to Linear Algebra. 5th ed.』 (Wellesley-Cambridge Press) Lipschutz, S. and Lipson, M. (2012) 『Linear Algebra, 6th ed.』 (McGraw-Hill)	
[Regarding studies out of class (preparation and review)]	
Students are expected to spend at least 2 hours per week on preview and review. More than half of that time is spent preparing for class and doing assignments.	
[Others (office hour, etc.)]	
Any inquiry to the instructor: chang.kaichun.4z{at}kyoto-u.ac.jp. (replace {at} with @)	

Lecture code: N162001

Course numbering		U-LAS10 20010 LE55			
Course title <English>		Function Theory of a Complex Variable-E2 Function Theory of a Complex Variable-E2		Affiliated department, Job title,Name Graduate School of Informatics Program-Specific Associate Professor,Croydon, David Alexander	
Group	Natural Sciences		Field(Classification)	Mathematics(Development)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Fri.1		Target year	Mainly 2nd year students	Eligible students For science students
[Outline and Purpose of the Course]					
Based upon knowledge of calculus, this is an introductory course to the function theory of one complex variable (i.e. introduction of complex analysis), and its goal is to understand fundamentals about holomorphic functions and meromorphic ones, which are dealt through the Cauchy's integral formula. The purpose of this course is not only to understand rigorous theories but to obtain some skills about the residue calculus. The theory for complex functions are not only beautiful in a mathematical sense but also very useful in applied fields e.g. physics, engineering and medical sciences etc. Almost all the mathematical theories in this course are rigorously dealt with, and some examples related with physics are also explained. An additional goal of this course is to give a chance to the students to present and discuss mathematics in English.					
[Course Goals]					
The goal is to understand fundamentals about holomorphic functions and meromorphic ones, which are dealt through the Cauchy's integral formula. In addition to learning modern mathematics and proofs, students can also learn how to discuss and present mathematical topics in English through this course.					
[Course Schedule and Contents]					
The course will cover the following topics, and each of them is read in 2 or 3 weeks: 1. complex numbers, the complex number plane and the Riemann sphere 2. differential of complex functions; holomorphic functions and the Cauchy- Riemann equation etc. 3. power series and analytic functions 4. integral; the Stieltjes integral and Cauchy's integral formula 5. fundamental theories for holomorphic functions 6. singularities and residue; the Laurent expansion and the residue calculus.					
[Class requirement]					
(Eligible students) mainly the sciences of the second grade Students are required good understanding of both calculus and linear algebra.					
[Method, Point of view, and Attainment levels of Evaluation]					
The evaluation of the course will take into account the following criteria: -homework (20%) -presentation (10%) -final exam (70%)					
----- Continue to Function Theory of a Complex Variable-E2(2) ↓ ↓ ↓					

Function Theory of a Complex Variable-E2(2)	
[Textbook]	
Not Specified	
[Reference book, etc.]	
(Reference book) Elias Stein, Rami Shakarachi 『Complex Analysis』 (Princeton University Press) J.B. Conway 『Functions of one complex variable』 (Springer) ISBN:3-540-90328-3 磯 祐介 『複素関数論入門』 (サイエンス社) ISBN:978-4-7819-1326-1	
[Regarding studies out of class (preparation and review)]	
The students are requested to solve exercises given in class by themselves even though they are not assigned as homework.	
[Others (office hour, etc.)]	
This class is an English class for the classes of 「関数論」, and their syllabuses are the same to one another. Office hours are not assigned and it is advisable to make comments willingly during and after the class.	

Lecture code: N161001

Course numbering		U-LAS10 20017 LE55			
Course title <English>	Honors Mathematics A-E2		Affiliated department, Job title,Name	Graduate School of Science	
	Honors Mathematics A-E2			Associate Professor,COLLINS, Benoit Vincent Pierre	
Group	Natural Sciences		Field(Classification)	Mathematics(Development)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Tue.3		Target year	Mainly 1st year students	Eligible students For science students
[Outline and Purpose of the Course]					
This course provides opportunities to learn mathematics in depth for highly motivated students. It supplements Calculus A and Linear Algebra A, and treats more advanced related topics.					
[Course Goals]					
In addition to learning modern mathematics and proofs, students can learn how to discuss and present mathematical topics in English through this course.					
[Course Schedule and Contents]					
One of the goals of this course is to help students to get used to rigorous proofs of mathematical statements and abstract mathematical notions. These two features are central to and represent the power of modern mathematics, because rigorously proven facts are true forever, and an abstract notion is applicable to various different situations as far as they share one key property.					
If the number of students permits, the course will be interactive. In particular, an additional goal of this course is to give a chance to the students to discuss mathematics in English.					
Topics will be chosen according to the level of the students. Below is a tentative and non-exhaustive list of themes that could be covered:					
1. Rigorous treatment of real numbers. Axioms. Dedekind cut. Completion.					
2. Convergence of sequences and series. Alternating sequences, power series, Abel summation method, subadditive sequences.					
3. Convex functions.					
4. Stirling formula.					
5. Linear algebra over general fields. Examples of linear spaces. Dual spaces and quotient spaces.					
6. Permutations and combinatorics.					
The cours will be covered within 14 classes					
----- Continue to Honors Mathematics A-E2(2) ↓ ↓ ↓					

Honors Mathematics A-E2(2)	
[Class requirement]	
Calculus A and Linear Algebra A. Students are strongly encouraged to take Calculus B and Linear Algebra B in parallel to this course.	
[Method, Point of view, and Attainment levels of Evaluation]	
The evaluation of the course will take into account the following criteria: -homework (20%) -midterm (20%) -final exam (60%)	
[Textbook]	
Not used	
[Reference book, etc.]	
(Reference book) To be announced.	
[Regarding studies out of class (preparation and review)]	
To be announced.	
[Others (office hour, etc.)]	
Students are welcome to ask questions during or at the end of the class. The schedule of office hours will be announced later.	

Lecture code: N165001

Course numbering		U-LAS10 20018 LE55			
Course title <English>	Honors Mathematics B-E2 Honors Mathematics B-E2		Affiliated department, Job title,Name	Graduate School of Science Associate Professor,Karel SVADLENKA	
Group	Natural Sciences		Field(Classification)	Mathematics(Development)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Tue.3		Target year	Mainly 2nd year students	Eligible students For science students
[Outline and Purpose of the Course]					
<p>This course provides opportunities to learn mathematics in more depth for highly motivated students. It supplements Calculus A, B and Linear Algebra A, B, and takes these basic courses as starting point to treat more advanced related topics.</p> <p>Through this course, students can also learn how to read, listen to, discuss and present mathematical arguments in English.</p>					
[Course Goals]					
<p>One of the goals of this course is to help students get used to rigorous proofs of mathematical statements and abstract notions in mathematics. These two features are central to and represent the power of modern mathematics, because rigorously proven facts form unshakeable building blocks of far-reaching theories, and an abstract notion is applicable to various different situations as far as they share a key property. If the number of students permits, the course will be interactive. In particular, an additional goal of this course is to provide a chance for the students to discuss mathematics in English.</p>					
[Course Schedule and Contents]					
<p>Below is a list of themes that may be covered. The actual topics of the lecture will be determined upon investigating the interests and level of the participating students.</p>					
<ol style="list-style-type: none"> 1. Hilbert spaces (tentatively 5 weeks) <ol style="list-style-type: none"> 1.1 Inner product spaces 1.2 Riesz representation theorem 1.3 Self-adjoint and normal operators 1.4 The spectral theorem 2. Orthogonal functions and Fourier series (tentatively 5 weeks) <ol style="list-style-type: none"> 2.1 Orthonormal system of functions 2.2 Space of continuous functions on the circle and its completion 2.3 Fourier series 2.4 Notions of convergence of the Fourier series 2.5 Fourier series and Fourier transform 3. Linear programming (tentatively 4 weeks) <ol style="list-style-type: none"> 3.1 Introduction to optimization with constraints 3.2 Basic properties of convex sets and convex functions 3.3 Duality 					
Continue to Honors Mathematics B-E2(2) ↓ ↓ ↓					

Honors Mathematics B-E2(2)
3.4 The simplex method and Karush-Kuhn-Tucker conditions
4. Numerical linear algebra (tentatively 5 weeks) <ol style="list-style-type: none"> 4.1 Singular decomposition of a matrix, least square approximation, QR decomposition 4.2 Diagonally dominant matrices 4.3 Basic iterative methods for linear systems 4.4 Conjugate gradient method
[Class requirement]
Calculus A, B and Linear Algebra A, B. Familiarity with materials covered in Honors Mathematics A may be helpful.
[Method, Point of view, and Attainment levels of Evaluation]
The evaluation of the course will take into account the following criteria: (1) homework and presentation of students during the course (about 40%) (2) final examination (about 60%) Details will be discussed with students during the first classes.
[Textbook]
Not fixed
[Reference book, etc.]
(Reference book) Introduced during class
[Regarding studies out of class (preparation and review)]
As in every math course, students should read notes carefully and repeatedly after the class, solve exercise problems and try to find alternative proofs, counterexamples, etc. After many hours of such practice you may get an intuitive understanding of the materials covered.
[Others (office hour, etc.)]
Students are welcome to ask questions during or at the end of the class. The schedule of office hours will be announced in the first lecture.

Lecture code: N804001

Course numbering		U-LAS11 10002 LE55			
Course title <English>	Introductory Statistics-E2 Introductory Statistics-E2		Affiliated department, Job title,Name	Graduate School of Medicine Assistant Professor,VEALE, Richard Edmund	
Group	Natural Sciences		Field(Classification)	Data Science(Foundations)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Fri.3		Target year	All students	Eligible students For all majors
[Outline and Purpose of the Course]					
Statistical methods are used throughout science, but there is often a wide gap between basic statistics courses and how statistical methods are applied in the scientific literature. This course intends to narrow this gap by introducing students to basic statistical concepts and by providing insight into how these concepts are used in the "real" scientific world. This will entail descriptive statistics, inferential statistics, and data visualization. Real-world examples will be drawn from the behavioral and life sciences, medicine, and epidemiology. The language of instruction in this course is English which will help to understand the statistical terminology in the scientific literature.					
[Course Goals]					
- To acquire basic statistical knowledge and the ability to conduct basic statistical analysis. - To be able to critically read scientific reports and to judge their quality in terms of statistical methodology.					
[Course Schedule and Contents]					
1) Introduction 2) Data collection: Survey sampling 3) Data collection: Experiments and clinical trials 4) Data editing and summary 5) 2 by 2 tables: Chi-square tests 6) Tests for independence: Fisher's exact tests 7) Risk ratios and odds ratios 8) Tests of difference of two proportions 9) Random sampling, randomization, and sample size calculations 10) Probability distributions and limit theorems 11) Tests of two means 12) Correlations and regressions 13) How to use statistics correctly? 14) Further studies 15) Feedback					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
Evaluation will be based on class attendance and active participation (30 points), written reports as homework (50 points) and 5 random in-class (open-note) quizzes, the lowest of which will be dropped (20 points). The quizzes and reports are to test whether the students have achieved the course goals. Students who are absent					
Continue to Introductory Statistics-E2(2) ↓ ↓ ↓					

Introductory Statistics-E2(2)
more than four times will not be credited.
[Textbook]
Not used Lecture notes will be provided during the course.
[Reference book, etc.]
(Reference book) Klein, Dabney 『The cartoon introduction to statistics』 (Hill and Wang Pub) ISBN: 0809033593
[Regarding studies out of class (preparation and review)]
To achieve the course goals, students should review the lecture material and practice with homework provided in class. This class uses the statistical software JMP which is available to Kyoto University students. The time necessary for review should be in the range of 3 hours per class.
[Others (office hour, etc.)]
No fixed office hours, but students are welcome to arrange appointments by email.

Lecture code: N804002

Course numbering		U-LAS11 10002 LE55				
Course title <English>	Introductory Statistics-E2		Affiliated department, Job title,Name	Institute for Frontier Life and Medical Sciences Program-Specific Senior Lecturer, VANDENBON, Alexis		
	Introductory Statistics-E2					
Group	Natural Sciences		Field(Classification)	Data Science(Foundations)		
Language	English		Old group	Group B	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period	2019 • Second semester
Day/period	Tue.2		Target year	All students	Eligible students	For all majors
[Outline and Purpose of the Course]						
Statistics is arguably the most important science in the world, because every other field of science depends upon it. Nowadays, science is becoming increasingly driven by large amounts of data. The key problem is how to extract knowledge from this data. Statistical analysis is a necessary step in solving this problem. This course will introduce the theory behind basic statistics and practical applications.						
[Course Goals]						
Students will learn about basic concepts in statistics, and learn to apply them on real datasets. Students will develop a feeling for critical thinking when faced with data, be able to make hypotheses, and suggest relevant ways to test them.						
[Course Schedule and Contents]						
In principle, the course will be offered according to the following plan. However, depending on the progress of the course the order or the number of lectures for each topic may change.						
1. Introduction to statistics and data analysis (part 1). Statistics in the context of the general process of investigation, including a brief introduction to data collection, sampling, and experimental design.						
2. Introduction to statistics and data analysis (part 2). Introduction to numerical and categorical data. Simple ways of visual inspection (scatter plots, histograms, etc) and summary statistics.						
3. Probability (part 1). Formal introduction to probability, probability distributions, independent and dependent variables, and conditional, marginal, and joint probability.						
4. Probability (part 2). Introduction to random variables. How to calculate the expected value and variability of a random variable?						
5. Distributions of random variables. Introduction to the normal distribution and its properties. Other common probability distributions will also be discussed, including the geometric and binomial distributions.						
6. Foundations for inference (part 1). We will discuss the principles of parameter inference, and the reliability of parameter estimates, including standard errors and confidence intervals. We will also introduce hypothesis testing and p-values based on these principles.						
7. Foundations for inference (part 2). The Central Limit Theorem and its consequences for parameter estimation.						
8. Mid-term exam.						
9. Inference for numerical data. Practical applications of parameter inference on numerical data. The t-test and illustrations of its use for hypothesis testing.						
10. Inference for categorical data (part 1). In this lesson, we introduce parameter inference for categorical (non-numerical) variables. For example, we examine proportions, their confidence intervals, hypothesis testing, and comparison.						
11. Inference for categorical data (part 2). Discussion of the widely used Chi-square test for goodness of fit, and randomization tests.						
						Continue to Introductory Statistics-E2(2) ↓ ↓

Introductory Statistics-E2(2)	
<p>12. Introduction to linear regression. We will cover line fitting, residuals, correlation, and least squares regression. The assumptions, interpretation, and weaknesses of linear regression will be introduced.</p> <p>13. Multiple and logistic regression. We expand the principles of simple linear regression to cases where there are many variables (multiple regression), and cases where the outcomes are binary categorical (logistic regression).</p> <p>14. Review of course material.</p> <p>15. Final examination</p> <p>16. Feedback</p>	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Grading: attendance and active participation (20%), mid-term exam (20%), quizzes/assignment (20%), and final exam (40%)	
[Textbook]	
Diez, Barr, and Cetinkaya-Rundel, 『OpenIntro Statistics (Third Edition)』 (OpenIntro, Inc.) ISBN:978-1943450039 (The course lectures will follow the content of this textbook. Please note that this textbook is also freely (legally) available for download at https://www.openintro.org/stat/textbook.php?stat_book=os)	
[Regarding studies out of class (preparation and review)]	
The course will follow a textbook. At the end of each lecture I will specify the sections to read before the next lecture.	
[Others (office hour, etc.)]	
No fixed office hours. Students are requested to make appointments directly or by email.	
Source: "An Introduction to Statistical Learning: with Applications in R" (by James, Witten, Hastie, and Tibshirani; Springer)	

Lecture code: N815002

Course numbering		U-LAS11 10010 LE55			
Course title <English>	Mathematical Statistics-E2 Mathematical Statistics-E2		Affiliated department, Job title,Name	Research Institute for Mathematical Sciences Program-Specific Associate Professor,Croydon, David Alexander	
Group	Natural Sciences		Field(Classification)	Data Science(Foundations)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Thu.2		Target year	Mainly 2nd year students	Eligible students For science students
[Outline and Purpose of the Course]					
This course provides a further exploration of the concepts covered in the first semester course, Mathematical Statistics 1. This will include deriving some of the fundamental properties of the maximum likelihood estimators introduced there, and explaining why these are important. Moreover, the course will introduce the Bayesian approach to statistics, under which uncertainty concerning parameters is described by a prior distribution, which is modified in light of new data to yield the posterior distribution, and compare and contrast this with the classical frequentist approach, whereby parameters are treated as fixed unknown quantities. Finally, the course will also give an introduction to statistical decision theory, in which inference is used to make a decision between competing estimators or hypotheses.					
[Course Goals]					
<ul style="list-style-type: none"> - To understand some of the fundamental properties of the maximum likelihood estimators - To understand the Bayesian approach to statistics, and how it differs from the frequentist one - To be able to apply statistical techniques in tackling a decision problem 					
[Course Schedule and Contents]					
The following indicates possible topics that will be covered and approximate schedule, though the precise details may vary depending on the student's proficiency level and background.					
(1) Likelihood and maximum likelihood estimators [7 weeks] Review of basic principles of inference, likelihood and score functions, Fisher information, Cramer-Rao lower bound, maximum likelihood estimators and their asymptotic properties					
(2) Bayesian inference [4 weeks] Prior and posterior distributions, conjugate families, asymptotic theory for posterior distributions, point estimation, comparison with frequentist approach					
(3) Statistical decision theory [3 weeks] Decision problems, loss and risk functions, decision rules, admissibility					
[Class requirement]					
None					
----- Continue to Mathematical Statistics-E2(2) ↓ ↓ ↓					

Mathematical Statistics-E2(2)	
[Method, Point of view, and Attainment levels of Evaluation]	
There will be 3 exercise sheets throughout the course, for which students will be expected to return work and present some of their answers in class. This will account for 30% of the final mark. The remaining 70% will be based on a final exam.	
[Textbook]	
There will be no set textbook for the course, as the lectures will contain all the material needed for the homework and exam. However, students might find the following useful as additional reading: Statistical Inference, Casella and Berger, Duxbury, 2002	
[Regarding studies out of class (preparation and review)]	
Details will depend on the number of students enrolling on the course, and will be discussed in the first class.	
[Others (office hour, etc.)]	

Lecture code: N809001

Course numbering					
Course title <English> Basic Data Analysis-E2		Affiliated department, Job title, Name		Institute for Frontier Life and Medical Sciences Program-Specific Senior Lecturer, VANDENBON, Alexis	
Group		Field(Classification)		Data Science(Foundations)	
Language		Old group		Number of credits	
English		Group B		2	
Number of weekly time blocks	1	Class style		Course offered year/period	2019 • First semester
Lecture					
Day/period		Target year		Eligible students	
Tue.2		All students		For all majors	
[Outline and Purpose of the Course]					
Nowadays, research in many fields of science is becoming increasingly driven by large amounts of data. The key problem is how to turn this data into new knowledge. This course covers a wide variety of data analysis and machine learning approaches. The course starts with an introduction of the basic concepts in machine learning. After that, we will introduce regression and classification methods, including linear models, tree-based methods, support vector machines, and principal component analysis. Practical applications will be demonstrated using the statistical programming language R.					
[Course Goals]					
Students will learn about basic concepts in data analysis and statistical learning, such as regression and classification problems, and supervised and unsupervised machine learning. Students will become familiar with strengths and weaknesses of several approaches, and learn how to apply them on real datasets.					
[Course Schedule and Contents]					
In principle, the course will be offered according to the following plan. However, depending on the progress of the course the order or the number of lectures for each topic may change.					
Lectures 1 and 2. Introduction to data analysis and machine learning: We will discuss data analysis in the context of scientific investigation. Using several examples, the concepts of supervised and unsupervised learning, regression and classification problems, and assessment of model accuracy will be introduced.					
Lectures 3 and 4. Linear regression: Introduction to linear regression as a simple supervised learning approach. We will cover simple and multiple linear regression, discuss how to interpret models, and compare linear regression with K-nearest neighbors.					
Lectures 5 and 6. Classification methods. We will introduce classification methods, including logistic regression, linear discriminant analysis, and quadratic discriminant analysis. We will discuss the differences between them, and their strong and weak points.					
Lecture 7: Mid-term exam.					
Lecture 8. Model assessment: We will introduce several approaches for evaluating the accuracy of models, including cross-validation and bootstrapping.					
Lectures 9 and 10. Tree-based methods: Focussing on decision trees, we will introduce tree-based methods for regression and classification. After that, we will cover more advanced methods, such as Bagging, Random Forests, and Boosting.					
Lecture 11. Support Vector Machines (SVMs): We will introduce maximal margin classifiers, and use this as a base to exploring SVMs.					
Lectures 12 and 13: Unsupervised learning: Introduction to unsupervised learning problems. We will introduce Principal Component Analysis, K-means clustering, and hierarchical clustering.					
Lecture 14. Review of course material.					
Lecture 15. Final examination					
Continue to Basic Data Analysis-E2(2) ↓ ↓ ↓					

Basic Data Analysis-E2(2)	
Lecture 16. Feedback	
[Class requirement]	
The course is intended for students who have had at least an elementary course in statistics. Programming experience is useful but not required.	
[Method, Point of view, and Attainment levels of Evaluation]	
Grading: attendance and active participation (20%), mid-term exam (20%), quizzes/assignment (20%), and final exam (40%)	
[Textbook]	
James, Witten, Hastie and Tibshirani 『An Introduction to Statistical Learning: with Applications in R』 (Springer) ISBN:978-1461471370 (The course lectures will follow the content of this textbook. Sections of the book to read in preparation of each class will be announced. This textbooks contains theoretical parts as well as practical exercises. Please note that this textbook is also freely (legally) available for download at http://www-bcf.usc.edu/~gareth/ISL/)	
[Regarding studies out of class (preparation and review)]	
The course will follow a textbook. At the end of each lecture I will specify the sections to read before the next lecture.	
[Others (office hour, etc.)]	
No fixed office hours. Students are requested to make appointments directly or by email.	
Source: "An Introduction to Statistical Learning: with Applications in R" (by James, Witten, Hastie, and Tibshirani; Springer)	

Lecture code: N816001

Course numbering		U-LAS11 20002 LE55			
Course title <English>	Second Course in Statistics-E2 Second Course in Statistics-E2		Affiliated department, Job title,Name	Research Institute for Mathematical Sciences Program-Specific Associate Professor,Croydon, David Alexander	
Group	Natural Sciences		Field(Classification)	Data Science(Development)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Thu.3		Target year	Mainly 2nd year students	Eligible students For all majors
[Outline and Purpose of the Course]					
This second course in statistics provides an in-depth mathematical introduction to regression, which is the area of statistics in which a dependent variable is modelled as a linear function of one or more predictor variables, together with a random error. Regression has applications across scientific research, engineering, and various other fields, and it will be an additional goal of the course to explore some of these. Whilst some knowledge of introductory statistical theory might be helpful, the course is intended to be self-contained.					
[Course Goals]					
<ul style="list-style-type: none"> - To gain a mathematical foundation in regression analysis - To understand how to interpret and evaluate a linear model - To be able to apply simple linear regression, multiple linear regression, and generalized linear models in examples 					
[Course Schedule and Contents]					
The following indicates possible topics that will be covered and approximate schedule, though the precise details may vary depending on the student's proficiency level and background. Moreover, in addition to the mathematical content, applications will be considered throughout the course.					
(1) Simple linear regression [4 weeks] Definition of the model, parameter estimation, model interpretation and evaluation					
(2) Multiple linear regression [5 weeks] Estimators for such models, tests for significance of regression, tests on individual regression coefficients and subsets of coefficients, confidence intervals on regression coefficients, polynomial regression					
(3) Generalized linear models [5 weeks] Link functions and linear predictors, parameter estimation, model analysis, specific examples of generalized linear models including logistic regression and Poisson regression					
[Class requirement]					
Whilst not essential, it will benefit students if they have previously taken an introductory statistics course.					
[Method, Point of view, and Attainment levels of Evaluation]					
There will be 3 exercise sheets throughout the course, for which students will be expected to return work and present some of their answers in class. This will account for 30% of the final mark. The remaining 70% will be based on a final exam.					
[Textbook]					
There will be no set textbook for the course, as the lectures will contain all the material needed for the homework and exam. However, students might find the following useful as additional reading:					
Continue to Second Course in Statistics-E2(2) ↓ ↓ ↓					

Second Course in Statistics-E2(2)	

Regression: Linear Models in Statistics, Bingham and Fry, Springer, 2010 Introduction to Linear Regression Analysis, Montgomery, Peck, and Vining, Wiley, 2012	
[Regarding studies out of class (preparation and review)]	
Details will depend on the number of students enrolling on the course, and will be discussed in the first class.	
[Others (office hour, etc.)]	

Lecture code: N813001

Course numbering					
Course title <English>	Data Analysis Practice I-E2 Data Analysis Practice I-E2		Affiliated department, Job title,Name	Graduate School of Pharmaceutical Sciences Senior Lecturer,RAKERS, Christin	
Group	Natural Sciences		Field(Classification)	Data Science(Development)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Seminar		Course offered year/period 2019 • First semester
Day/period	Thu.4		Target year	All students	Eligible students For all majors
[Outline and Purpose of the Course]					
Media and web apps regularly infiltrate our daily lives and we are confronted with a constant flow of information. How can we use public data to our advantage and discover patterns or extract useful information? This course is aimed at students from all disciplines who want to learn essential data analytics skills. Prior specialized knowledge is not required and topics will be introduced at a beginner' s level. The course imparts methods to obtain, clean, analyze, and visualize data from the web via python and communicates basic concepts of data mining and statistical analyses.					
[Course Goals]					
In this course, students will - learn about the theoretical basis of data mining and statistical learning - gain the skills to retrieve, analyze, explore, and visualize data and draw conclusions for decision making - become familiar with computational operations, python, and data structures					
[Course Schedule and Contents]					
[WEEKS 01-07] THEORY: - Fundamental statistics and exploratory data analysis - Data visualization - Linear regression - Classification - Supervised learning: decision trees, random forest, support vector machines, others - Unsupervised learning: clustering					
[WEEKS 08-14] PRACTICE: Introduction to python (jupyter), demonstration and execution of data analysis workflows based on concepts covered in preceding theory section.					
[Class requirement]					
Access to a personal computer is required in order to complete homework assignments.					
[Method, Point of view, and Attainment levels of Evaluation]					
20 % Class attendance 30 % Mid-term exam 50 % Homework assignment					
----- Continue to Data Analysis Practice I-E2(2) ↓ ↓ ↓					

Data Analysis Practice I-E2(2)
[Textbook]
Instructed during class
[Reference book, etc.]
(Reference book)
Introduced during class
[Regarding studies out of class (preparation and review)]
Weekly review of course content is advised. The completion of the homework assignment in groups of 1 to 3 students requires additional time investment outside of class.
[Others (office hour, etc.)]
Announced during class.

Lecture code: N813002

Course numbering					
Course title <English>		Data Analysis Practice I-E2 Data Analysis Practice I-E2		Affiliated department, Job title, Name Graduate School of Pharmaceutical Sciences Senior Lecturer, RAKERS, Christin	
Group		Natural Sciences		Field(Classification) Data Science(Development)	
Language		English		Old group Group B	
Number of weekly time blocks		1		Number of credits 2	
Class style		Seminar		Course offered year/period 2019 • Second semester	
Day/period		Thu.4		Target year All students	
Eligible students		For all majors			
[Outline and Purpose of the Course]					
Today's research landscape is characterized by an increasing amount of publicly accessible scientific data, e.g. from chemical or genomic screenings. This course is aimed at students from all disciplines who want to learn essential data analytics skills that help to interpret and explore scientific data. Prior specialized knowledge is not required to attend the course and topics will be introduced at a beginner's level. The lectures impart methods to obtain, clean, analyze, and visualize data from the web via python and illustrate basic concepts of data mining and statistical analyses.					
[Course Goals]					
In this course, students will - learn about the theoretical basis of data mining and statistical learning - gain the skills to retrieve, analyze, explore, and visualize data and draw conclusions for decision making - become familiar with computational operations, python, and data structures					
[Course Schedule and Contents]					
[WEEKS 01-07] THEORY: - Fundamental statistics and exploratory data analysis - Data visualization - Linear regression - Classification - Supervised learning: decision trees, random forest, support vector machines, others - Unsupervised learning: clustering					
[WEEKS 08-14] PRACTICE: Introduction to python (jupyter), demonstration and execution of data analysis workflows based on concepts covered in preceding theory section.					
[Class requirement]					
Access to a personal computer is essential to complete homework assignments.					
[Method, Point of view, and Attainment levels of Evaluation]					
20 % Class attendance 30 % Mid-term exam 50 % Homework assignments					
----- Continue to Data Analysis Practice I-E2(2) ↓ ↓ ↓					

Data Analysis Practice I-E2(2)	
[Textbook]	
Instructed during class	
[Reference book, etc.]	
(Reference book)	
Introduced during class	
(Related URL)	
(Announced during class.)	
[Regarding studies out of class (preparation and review)]	
Weekly review of course content is advised. The completion of homework assignments in groups of 1 to 3 students requires additional time investment outside of class.	
[Others (office hour, etc.)]	
Announced during class.	

Lecture code: N814001

Course numbering					
Course title <English>		Data Analysis Practice II-E2 Data Analysis Practice II-E2		Affiliated department, Job title, Name	Graduate School of Medicine Associate Professor, PATAKY, Todd
Group		Natural Sciences		Field(Classification)	Data Science(Development)
Language		English		Old group	Group B
				Number of credits	2
Number of weekly time blocks	1	Class style		Seminar	Course offered year/period
					2019 • Second semester
Day/period		Fri.3		Target year	All students
				Eligible students	For all majors
[Outline and Purpose of the Course]					
This course aims to explore a wide variety of data analysis methods in a manner that emphasizes data interpretation. Probability and distributions will be explored using graphical and numerical approaches. Concepts from classical hypothesis testing and machine learning will be emphasized through example. No prior knowledge of statistics or data science is required. Computer programming experience is useful but not required.					
[Course Goals]					
Students will learn the basics of data science, statistics and computer programming. Students will understand when certain data science tools are useful and when they are less useful or even inappropriate. This lecture will extensively use the Python programming language (python.org) and Jupyter Notebooks (jupyter.org).					
[Course Schedule and Contents]					
Over this 15-week lecture the following topics will be covered in each class:					
<ol style="list-style-type: none"> 1) What is Data Science? 2) Python I: Basics 3) Python II: Data visualization 4) Describing Data I: Central Tendency and Dispersion 5) Describing Data II: Correlation 6) Probability I: Random Variables 7) Probability II: Hypothesis testing 8) Probability III: Simulating experiments 9) Working with Real Data I: Getting Data 10) Working with Real Data II: Exploring Data 11) Machine Learning I: Introduction 12) Machine Learning II: k-Nearest Neighbors 13) Machine Learning III: Decision Trees 14) Machine Learning IV: Neural Networks 15) Final example: Natural Language Processing 					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
Students are expected to produce all in-class demonstrations independently, and to independently complete weekly assignments. Evaluation will be based on the following criteria: attendance and participation (10%),					
----- Continue to Data Analysis Practice II-E2(2) ↓ ↓ ↓					

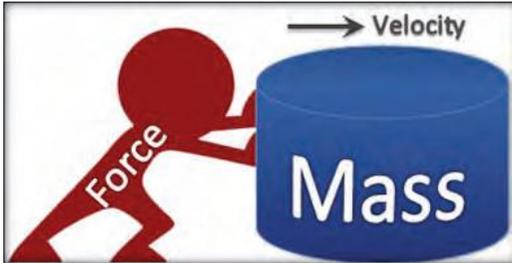
Data Analysis Practice II-E2(2)
----- assignments (90%: 10-to-14 assignments).
[Textbook]
Not used
[Reference book, etc.]
(Reference book) Joel Grus 『Data Science from Scratch: First Principles with Python』 (O'Reilly Media) ISBN:978-1491901427 (Lectures will loosely follow this textbook's content. This textbook is OPTIONAL, but will be useful for reviewing concepts and for independent study.)
(Related URL) https://github.com/joelgrus/data-science-from-scratch (Software (data and Code) for “Data Science from Scratch” by Joel Grus)
[Regarding studies out of class (preparation and review)]
There will be a small software-based assignment each week based on lecture content; students should submit these assignments more than one day before the next lecture.
[Others (office hour, etc.)]

Lecture code: N208001

Course numbering		U-LAS12 10002 LE57			
Course title <English>	Fundamental Physics A Fundamental Physics A		Affiliated department, Job title,Name	Graduate School of Engineering Associate Professor, QURESHI, Ali Gul	
Group	Natural Sciences		Field(Classification)	Physics(Foundations)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Thu.4	Target year	Mainly 1st year students	Eligible students	For science students
[Outline and Purpose of the Course]					
Lectures on the topics of physics (classical mechanics) that are common and necessary to all students who study natural sciences.					
[Course Goals]					
To acquire knowledge of basic concepts of physics such as motion, energy, gravitation, and the related laws of these topics.					
[Course Schedule and Contents]					
1. Kinematics, velocity and acceleration, components of polar coordinates (3 weeks) 2. Laws of motion, equations of motion and application (3 weeks) 3. Law of conservation, work and energy, angular momentum, momentum (3 weeks) 4. Motion due to a central force, planetary motion under the gravitation of the sun (3 weeks) 5. Motion of a system of particles (2 weeks)					
[Class requirement]					
This course is intended mainly for students who studied physics at high school. Those who did not study physics are recommended to take "Elementary Course of Physics A".					
[Method, Point of view, and Attainment levels of Evaluation]					
Class performance and quizzes (20%), Midterm examination (30%), and a final examination (50%).					
[Textbook]					
Not used					
[Reference book, etc.]					
(Reference book) Marcelo Alonso, Edward Finn 『Physics』 (Addison-Wesley) ISBN:0201565188 David Halliday, Robert Resnick, Jearl Walker 『Fundamentals of Physics Extended』 (Wiley) ISBN: 0470469080 Raymond A. Serway, John W. Jewett jr. 『Physics for scientists and engineers with modern physics』 (Brooks/Cole Cengage Learning) ISBN:1133953980					
[Regarding studies out of class (preparation and review)]					
Students are advised to refer to the class handouts and readings provided in the classes. Homework is assigned to strengthen the learning of the topics covered in class, therefore, it is advised to students to do their homework regularly and carefully.					
[Others (office hour, etc.)]					
Office hours will be provided during the first lecture.					

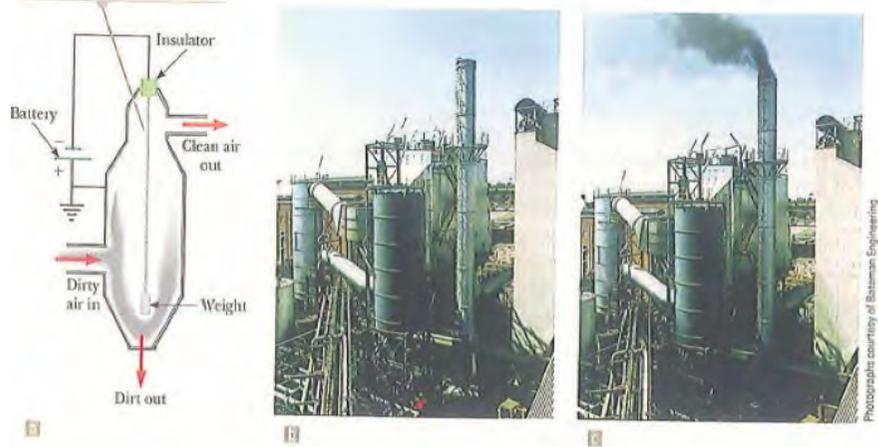
Lecture code: N261001

Course numbering		U-LAS12 10003 LE57			
Course title <English>	Fundamental Physics A-E2 Fundamental Physics A-E2		Affiliated department, Job title,Name	Institute for Frontier Life and Medical Sciences Senior Lecturer,OKEYO, Kennedy Omondi	
Group	Natural Sciences		Field(Classification)	Physics(Foundations)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Thu.2		Target year	Mainly 1st year students	Eligible students For science students
[Outline and Purpose of the Course]					
Focusing on classical mechanics, this lecture will introduce basic but important concepts in physics which are widely applied in other fields of natural sciences. Although prior knowledge of high school level physics will be advantageous, it is not absolutely necessary. Basic concepts and laws of classical mechanics will be introduced and expanded upon systematically, with focus on enabling students to master and apply them to practical problems in science and engineering.					
[Course Goals]					
1) To help students grasp important concepts and laws of physics and be able to apply them to common problems in science and engineering.					
2) To enable students to nurture problem solving skills in mathematics and physics.					
[Course Schedule and Contents]					
In dealing with the following topics, particular attention will be given to their application in different fields of natural sciences and engineering.					
1) Introduction to vectors and equations of motion (3 weeks) In this lecture, we will learn about vectors (basic) and how to derive equations of motion, with focus on kinematic equations which are important when describing motion without considering the masses and forces involved. We will also learn about the Cartesian and polar coordinate systems and how to use them to analyze motion.					
2) Newton's laws of motion and their applications (3 weeks) This lecture will consider motion of a mass (or masses) under the influence of a force (or forces). We will look at the famous Newton's laws of motion and discuss how to apply them to different types of motion, including circular motion.					
3) Centripetal forces and motion of solar systems (2 weeks) This lecture will explain motions of bodies orchestrated by a central force, and extend the argument to derive equations of circular motion of celestial bodies (such as the revolution of earth around the sun).					
4) Conservation of energy (3 weeks) The concept of energy conservation is undoubtedly the most important in physics. This lecture will discuss the concept of work and energy, and explore the conservation of energy principle considering kinetic energy and potential energy under the action of different types of forces.					
5) <u>Motion of a system of particles and rigid bodies (3 weeks)</u> -----					
Continue to Fundamental Physics A-E2(2) ↓ ↓ ↓					

Fundamental Physics A-E2(2)
In this lecture, we will analyze motions of system of particles and rigid bodies, focusing on concrete examples from the world around us. We will take a look at linear momentum,angular momentum, rotation of rigid bodies and related applications.
6) Exam and feedback (2 weeks)
[Class requirement]
Knowledge of high school physics will be essential but not a requirement.
[Method, Point of view, and Attainment levels of Evaluation]
Short assessment tests 40%, Endterm examination 60%.
[Textbook]
Instructed during class Handouts will be given where necessary.
[Reference book, etc.]
(Reference book) Daniel Kleppner and Robert Kolenkow 『An Introduction to Mechanics』 (Cambridge University Press) ISBN:521198119 (Fundamentals of Physics 9th Edition by David Halliday, Robert Resnick and Jearl Walker, Wiley, ISBN-10: 470469080) Jearl Walker, David Halliday, Robert Resnick 『Principles of Physics』 (Wiley) ISBN:978-81-265-5256-6 (Recommended for those looking for a simplified introduction to undergraduate physics.)
[Regarding studies out of class (preparation and review)]
Students are strongly encouraged to study introductory mathematical textbooks and other materials to ensure that they are comfortable with the mathematical concepts such as differentiation and integration which are important in formulating equations of motion.
[Others (office hour, etc.)]
Office hour will be announced weekly. However, you can always request for discussion time or send in a question/comment by email.


Lecture code: N209001

Course numbering		U-LAS12 10005 LE57			
Course title <English>	Fundamental Physics B Fundamental Physics B		Affiliated department, Job title,Name	Graduate School of Engineering Associate Professor, QURESHI, Ali Gul	
Group	Natural Sciences		Field(Classification)	Physics(Foundations)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Thu.4		Target year	Mainly 1st year students	Eligible students For science students
[Outline and Purpose of the Course]					
The objective of this course is to introduce fundamental concepts of physics relating with electricity and magnetism.					
[Course Goals]					
<ul style="list-style-type: none"> . To understand the basic concepts of electricity and magnetism . To be able to relate and appreciate the role of these concepts in many natural phenomenon . To learn about the working of inventions (such as motors, generators, etc.) based on applications of these concepts. 					
[Course Schedule and Contents]					
1)- Introduction to Electric fields, electric charge, Coulomb's law, Electric Flux, Gauss's law, Electric Potential, Equipotential lines and electric fields.(3 weeks)					
2)- Capacitance and capacitors: Capacitors connected in parallel and series, Equivalent Capacitance (2 weeks)					
3)- Electric Current, Ohm's Law, Resistors in parallel and series, Equivalent resistance, Kirchhoff's rules (3 weeks)					
4)- Introduction to Magnetic Fields, Torque on a Current Loop, charged particle in uniform magnetic field, Magnetic flux (2 weeks)					
5)- Electromagnetic Induction: Faraday's Law, Lenz's law, generators (2 weeks)					
6)- Maxwell's Equations and Electromagnetic Waves (2 weeks)					
[Class requirement]					
This course is intended mainly for students who studied physics at high school.					
[Method, Point of view, and Attainment levels of Evaluation]					
Class performance and quizzes (20%), Midterm examination (30%), and a final examination (50%).					
[Textbook]					
Instructed during class					
[Reference book, etc.]					
(Reference book)					
Serway, R.A & Jewett, J.W. Jr. (2011) 『Physics for Scientists and Engineers With Modern Physics』 (
Continue to Fundamental Physics B(2) ↓ ↓ ↓					

Fundamental Physics B(2)	
Brooks/Cole Publishers)	
[Regarding studies out of class (preparation and review)]	
Students are advised to go through the class handouts and the readings suggested in the class for each topic. Homework is assigned to strengthen the learning of the topic covered in the class, therefore, it is advised to the students to do homework regularly and carefully.	
[Others (office hour, etc.)]	
	

Lecture code: N264001

Course numbering		U-LAS12 10006 LE57			
Course title <English>	Fundamental Physics B-E2 Fundamental Physics B-E2		Affiliated department, Job title,Name	Graduate School of Engineering Senior Lecturer,DE ZOYSA, Menaka	
Group	Natural Sciences		Field(Classification)	Physics(Foundations)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Thu.3	Target year	Mainly 1st year students	Eligible students	For science students
[Outline and Purpose of the Course]					
This course will explain students the fundamental concepts of electricity and magnetism. To obtain a better understanding of the concepts, solve the problems during the lectures.					
[Course Goals]					
<ul style="list-style-type: none"> • Understand the basic laws of electricity and magnetism. • Understand the concepts better by applying the laws and concepts to solve problems. 					
[Course Schedule and Contents]					
1.Overview of the course, introduction to vector calculus (1 week) 2.Coulomb's law, electric field, electrostatic potentials (2 weeks) 3.Gauss's law (1 week) 4.Electric field around conductors (1 week) 5.Electrostatic capacitance (2 weeks) 6.Electrostatic energy and force (2 weeks) 7.Boundary-value problems (2 weeks) 8.Electric current (1 week) 9.Magnetic field of moving charges (2 weeks)					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
Evaluation will be based on attendance and participation (20%), mid-term examination (30%) and final examination (50%).					
[Textbook]					
Not used					
[Reference book, etc.]					
(Reference book) David J. Griffiths 『Introduction to Electrodynamics』					
[Regarding studies out of class (preparation and review)]					
Students are required to do their homework. When trouble is encountered during homework, please refer recommended textbook or please ask the instructor.					
[Others (office hour, etc.)]					
Office hour: Anytime by email and appointments should be made via email.					

Lecture code: N256001

Course numbering		U-LAS12 10008 EE57			
Course title <English>	Elementary Experimental Physics-E2		Affiliated department, Job title, Name	Graduate School of Science Associate Professor, WENDELL, Roger	
	Elementary Experimental Physics-E2			Graduate School of Engineering Senior Lecturer, BEAUCAMP, Anthony Tadeus Herve Graduate School of Science Senior Lecturer, LEE, Shiu Hang	
Group	Natural Sciences		Field(Classification)	Physics(Foundations)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	2	Class style	Experiment		Course offered year/period 2019 • Second semester
Day/period	Wed.3 • 4		Target year	Mainly 1st year students	Eligible students For science students
[Outline and Purpose of the Course]					
Natural sciences are the product of experimental investigation and theoretical interpretation. In this course, students will learn to use various measurement instruments to perform experiments. Basic topics in physics will be covered, enabling students to get a deeper understanding of the natural sciences. In addition, techniques for processing and analyzing experimental data will be mastered. Finally, students will learn how to write scientific reports.					
[Course Goals]					
<ul style="list-style-type: none"> - Learn physics by carrying out experiments. - Learn basic skills for processing and analyzing experimental data. - Learn how to keep a laboratory notebook, and write up experimental reports. - Learn to give a scientific presentation explaining the results of an experiment. 					
[Course Schedule and Contents]					
<ol style="list-style-type: none"> 1. Coupled oscillations experiment 2. Measurement of electrical resistances 3. Measurement of the magnetic field of a coil using a Hall element 4. Thermionic emission experiment 5. Experiments with lasers 6. Measuring the wavelength of light using diffraction gratings 7. Atomic spectroscopy using prisms 8. Franck-Hertz experiment 9. Measurement of Planck's constant 					
Students will perform 6 experiments from this list.					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
Evaluation will be based on in-lab experimentation, experimental reports (6), and one oral presentation. Details will be explained in class.					
[Textbook]					
Instructed during class					
----- Continue to Elementary Experimental Physics-E2(2) ↓ ↓ ↓					

Elementary Experimental Physics-E2(2)

Information about the English language textbook specific to the experiments in the course will be provided during the first lecture.

[Reference book, etc.]

(Reference book)

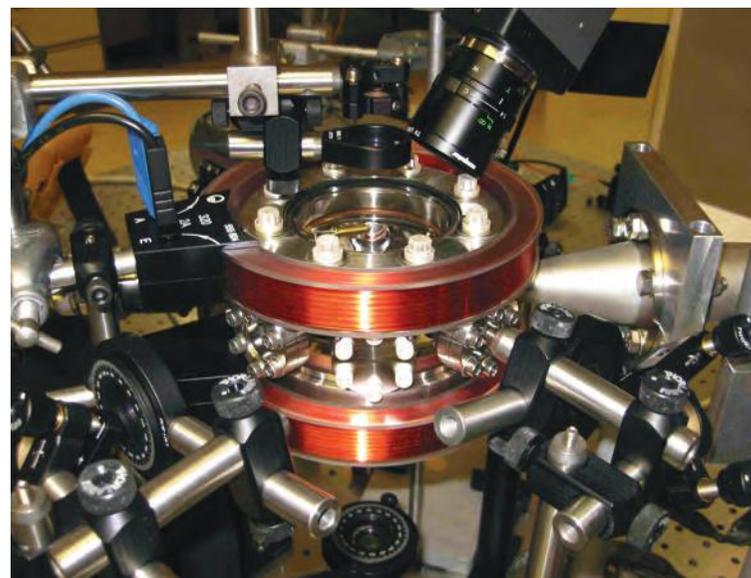
Introduced during class
Additional information will be provided during class as necessary.

[Regarding studies out of class (preparation and review)]

Students should read the textbook ahead of each experimental session.

[Others (office hour, etc.)]

Students are encouraged to ask questions during the experimental sessions, and are welcome to contact instructors by email outside of class hours.
Students should make sure to attend the first lecture to receive further information about the course and its textbook.



Lecture code: N255001

Course numbering		U-LAS12 10012 LE57					
Course title <English>		Elementary Course of Physics A-E2 Elementary Course of Physics A-E2		Affiliated department, Job title,Name		Graduate School of Science Senior Lecturer,PETERS,Robert	
Group		Natural Sciences		Field(Classification)		Physics(Foundations)	
Language		English		Old group		Group B	
				Number of credits		2	
Number of weekly time blocks		1		Class style		Lecture	
				Course offered year/period		2019 • First semester	
Day/period		Mon.3		Target year		Mainly 1st year students	
				Eligible students		For science students	
[Outline and Purpose of the Course]							
By using simplified models, we will describe the movement of particles, and learn the physical meaning of force, energy, work, and potential. We will learn how to predict the movement of objects in different situations. With these concepts, we will analyze simple examples such as the linear movement, rotations, the harmonic oscillator, collisions of two bodies and thereby understand theoretical approaches to physical problems.							
[Course Goals]							
- getting a basic understanding of theoretical approaches to physical problems in mechanics - learning fundamentals of kinematics and dynamics - being able to use the learned concepts in simple problems.							
[Course Schedule and Contents]							
The course will be adapted to the level of the students! Therefore, the number of weeks may change in order to increase or decrease the speed of the lecture.							
- introduction into necessary mathematics used during the course (1-2 weeks) - Kinematics (speed, acceleration, rotation) (2-3 weeks) - Dynamics (Newton axioms, examples, rotating systems) (4 - 6 weeks) - harmonic oscillator (1-2 week) - energy, work, potential (2-3 weeks) - collisions of two bodies (1-2 weeks) - Summary and repetition of the whole course (1 week)							
[Class requirement]							
This course is intended mainly for students who did not select [physics] in the entrance examination.							
[Method, Point of view, and Attainment levels of Evaluation]							
Worksheets/reports (50%) + examination (50%)							
[Textbook]							
Not fixed							
----- Continue to Elementary Course of Physics A-E2(2) ↓ ↓ ↓							

Elementary Course of Physics A-E2(2)	
[Reference book, etc.]	
(Reference book) Introduced during class	
[Regarding studies out of class (preparation and review)]	
Revision of the course by doing the work sheets	
[Others (office hour, etc.)]	
Office hour: After the course	
Although no specific knowledge about physics is needed for taking this course, basic skills in differential and integral calculus are expected.	
The worksheets will give students an opportunity to practice their English skills in science.	

Lecture code: N271001

Course numbering					
Course title <English>	Elementary Course of Physics B-E2 Elementary Course of Physics B-E2		Affiliated department, Job title,Name	Graduate School of Engineering Senior Lecturer,Arseniy Aleksandrovich, Kuzmin	
Group	Natural Sciences		Field(Classification)	Physics(Foundations)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Tue.2		Target year	Mainly 1st year students	Eligible students For science students
[Outline and Purpose of the Course]					
This course is oriented for those who did not learn physics at high school. This course follows the "Elementary Course of Physics A". It aims to teach the basics of physics and its methods. This course consists of two main topics: Electricity and Thermodynamics.					
In Electricity, electrostatic field and charges are introduced, and their interaction is explained.					
In Thermodynamics, ideas of heat, pressure, temperature, and entropy are explained.					
[Course Goals]					
Understanding of the main ideas in Electricity and Thermodynamics will give the listener the ability to make basic calculations and estimations of various phenomena surrounding us in the everyday life.					
The main goal is to introduce students to the scientific method and physical thinking.					
[Course Schedule and Contents]					
The following topics are explained in one to three lectures.					
<ol style="list-style-type: none"> 1. Electrostatic field and charged particles. 2. Electrostatic potential and energy. 3. Motion of charges in electrostatic field, current, power. 4. Particle collisions, limit of Newtonian dynamics. 5. Gas pressure and temperature. 6. Laws of thermodynamics. 7. Irreversibility and entropy. 					
[Class requirement]					
This course is for those students who did not select physics as the entrance examination subject.					
----- Continue to Elementary Course of Physics B-E2(2) ↓ ↓ ↓					

Elementary Course of Physics B-E2(2)	
[Method, Point of view, and Attainment levels of Evaluation]	
Evaluation will be based on: 10% Attendance 20% Homework 20% Quiz 50% Final exam	
[Textbook]	
Instructed during class	
[Regarding studies out of class (preparation and review)]	
Preparation for lectures will include revision of class materials and homework assignments. Detailed instructions will be given during the class.	
[Others (office hour, etc.)]	

Lecture code: N211001

Course numbering		U-LAS12 10015 LE57			
Course title <English>	Advanced Dynamics Advanced Dynamics		Affiliated department, Job title,Name	Graduate School of Engineering Associate Professor,KIM SUNMIN	
Group	Natural Sciences		Field(Classification)	Physics(Foundations)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Tue.3		Target year	Mainly 1st year students	Eligible students For science students
[Outline and Purpose of the Course]					
This course deals with the mechanics of rigid body based on Newton's mechanics. Description of motion of rigid bodies and related applications will be explained in detail.					
[Course Goals]					
To understand various dynamic topics comprehensively based on many practical examples and problems					
[Course Schedule and Contents]					
The main topics in this lecture are as follows; (Each items will be covered by 2-3 weeks)					
1. Curvilinear motion of a particle - Rectangular components, normal and tangential components, cylindrical components					
2. Planer motion of a rigid body - Translation, rotation about a fixed axis, relative motion analysis using rotating axes					
3. General motion of a rigid body - Rotation about a fixed point, inertial and non-inertial reference frame					
4. Force and energy of a rigid body - Mass moment of inertia, equations of motion, principle of work and energy, conservation of energy					
5. Impulse and momentum of a rigid body - Linear and angular momentum, impact, principle of impulse and momentum, conservation of momentum					
6. Three dimensional motion - Moments and products of inertia, equations of motion, gyroscopic motion					
[Class requirement]					
Having taken the course"Fundamental Physics A" is recommended.					
[Method, Point of view, and Attainment levels of Evaluation]					
Evaluation is based on written tests (midterm exam: 40%, final exam: 40%), assignment (10%), and class participation (10%).					
[Textbook]					
Not used Some handout materials will be provided during the class.					
[Reference book, etc.]					
(Reference book) R. C. Hibbeler 『Dynamics』 (Prentice Hall) ISBN:978-0-13-291127-6 (very well organized textbook					
----- Continue to Advanced Dynamics(2) ↓ ↓ ↓					

Advanced Dynamics(2)
----- with abundant examples)
[Regarding studies out of class (preparation and review)]
Self-review is strongly recommended after each lecture.
[Others (office hour, etc.)]
No specific office hour. Email communication is preferred through [kim.sunmin.6x@kyoto-u.ac.jp].

Lecture code: N207001

Course numbering		U-LAS12 10017 LE57					
Course title <English>		Physics of Wave and Oscillation Physics of Wave and Oscillation		Affiliated department, Job title,Name		Graduate School of Engineering Associate Professor,KIM SUNMIN	
Group		Natural Sciences		Field(Classification)		Physics(Foundations)	
Language		English		Old group		Group B	
				Number of credits		2	
Number of weekly time blocks		1		Class style		Lecture	
				Course offered year/period		2019 • First semester	
Day/period		Thu.4		Target year		Mainly 2nd year students	
				Eligible students		For science students	
[Outline and Purpose of the Course]							
This course deals with fundamentals of oscillations and waves which commonly relate to various fields in nature such as dynamic motion as well as electromagnetic phenomenon.							
[Course Goals]							
To understand the basic concepts of wave and oscillation with its mathematical description method							
[Course Schedule and Contents]							
The course contents are as follows: (Each items will be covered by 2-3 weeks)							
1) Simple harmonic motion Equation and solution of simple harmonic motion, energy of harmonic oscillator							
2) Damped oscillation and forced vibration Resistance and damped vibration, forced vibration and resonance							
3) Coupled vibration and normal mode coordinates Coupled vibration of spring pendulum, normal mode coordinates of normal vibration, normal vibration of multi degree-of-freedom system							
4) Vibration of continuous system String vibration, vibration of elastic element, acoustic vibration, Fourier series, natural vibration							
5) Waves Wave equation and solution, sine wave, plane wave, reflection & transmission							
6) Waves superposition and interference Wave interference, phase velocity, group velocity							
[Class requirement]							
Having taken the course "Fundamental Physics A & B" is recommended.							
[Method, Point of view, and Attainment levels of Evaluation]							
Evaluation is based on written test (midterm exam: 40%, final exam: 40%), assignments (10%), and class participation (10%).							
----- Continue to Physics of Wave and Oscillation(2) ↓ ↓ ↓							

Physics of Wave and Oscillation(2)	
[Textbook]	
Not used Some handout materials will be provided during the class.	
[Reference book, etc.]	
(Reference book) Walter Fox Smith 『Wave and Oscillations』 (Oxford University Press) ISBN:978-0-19-539349-1 (very well organized context to deliver the basic concept of wave and oscillations)	
[Regarding studies out of class (preparation and review)]	
Self-review is strongly recommended after each lecture.	
[Others (office hour, etc.)]	
No specific office hour. Email communication is preferred through [kim.sunmin.6x@kyoto-u.ac.jp].	

Lecture code: N251001

Course numbering		U-LAS12 10019 LE57			
Course title <English>	Advanced Course of Electromagnetism-E2 Advanced Course of Electromagnetism-E2		Affiliated department, Job title,Name	Graduate School of Engineering Senior Lecturer, BEAUCAMP, Anthony Tadeus Herve	
Group	Natural Sciences		Field(Classification)	Physics(Foundations)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Tue.1		Target year	Mainly 2nd year students	Eligible students For science students
[Outline and Purpose of the Course]					
Based on the knowledge you gained from the Fundamental Physics B course, this course will expand your understanding of electromagnetic theory. After a review of the basics of classical electromagnetism up-to Maxwell's equations, we will explore the subjects of electromagnetic wave propagation, interference and diffraction, as well as the derivation of electric and magnetic properties in substances and their boundaries.					
[Course Goals]					
<ul style="list-style-type: none"> - Follow the historical progression in our understanding of electromagnetic laws. - Understand the meaning of physical properties in electromagnetism. - Apply the laws electromagnetism to solve practical problems. 					
[Course Schedule and Contents]					
<ol style="list-style-type: none"> 1. Mathematics review: Coordinate systems, fields, gradient, divergence, curl [2 weeks]. 2. Electrics review: Coulomb's force, dipoles, electric potential, Gauss's law [2 weeks]. 3. Magnetics review: Ampere's law, Faraday's law [2 weeks]. 4. AC circuits: Resistive, inductive, and capacitive load [1 week]. 5. Maxwell's equations: Electromagnetic radiation, interference, diffraction [4 weeks]. 6. Electromagnetic properties in substances and at boundaries [2 weeks]. 7. Metamaterials, Cherenkov radiation [1 week]. 					
Final examination [1 week]. Feedback session [1 week].					
[Class requirement]					
Fundamental Physics B course.					
[Method, Point of view, and Attainment levels of Evaluation]					
Evaluation will be based on: <ul style="list-style-type: none"> - Class Participation (10%): Student participation will be asked in solving problems and discussing theories and their application. - Homework (20%): Typical problems will be assigned, which you can solve by applying the laws and methods learnt during lectures (every 2 weeks). - Quizzes (20%): Mini-exams, to check that you remember important laws and principles from previous lectures and study guides (every 4 weeks). - Final examination (50%): You will be tested with a series of problems that combine previously studied cases and original cases. 					
----- Continue to Advanced Course of Electromagnetism-E2(2) ↓ ↓ ↓					

Advanced Course of Electromagnetism-E2(2)
[Textbook]

Study guides will be provided every week (~20 pages per week), to help you expand your knowledge. The study guides closely match the week's topic, providing in-depth explanations, problem solving strategies, and summaries of key points.

[Reference book, etc.]
(Reference book)

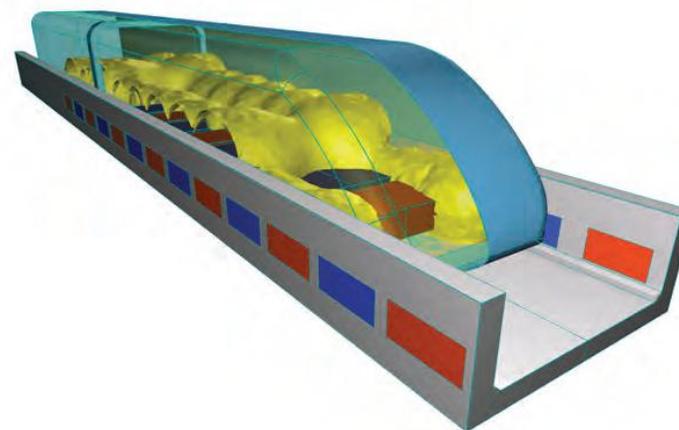
David Griffiths 『Introduction to Electrodynamics』 (Pearson) ISBN:129-202-142-X (Amazon link: <http://www.amazon.co.jp/Introduction-Electrodynamics-4th-David-Griffiths-ebook/dp/B00HR7MXAY>)

[Regarding studies out of class (preparation and review)]

Study guides will be provided every week (~20 pages per week), to help you expand your knowledge. The study guides closely match the week's topic, providing in-depth explanations, problem solving strategies, and summaries of key points.

[Others (office hour, etc.)]

Questions can be sent by email, and will be answered either electronically or by appointment (depending on the case).



Lecture code: N253001

Course numbering		U-LAS12 10021 LE57			
Course title <English>	A Guide to Modern Physics A-E2 A Guide to Modern Physics A-E2		Affiliated department, Job title,Name	Graduate School of Science Associate Professor,WENDELL,Roger	
Group	Natural Sciences		Field(Classification)	Physics(Foundations)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Mon.3	Target year	Mainly 1st year students	Eligible students	For all majors
[Outline and Purpose of the Course]					
This course will discuss the fundamentals of classical (Newtonian) mechanics, the first step in understanding many phenomena in the natural world. Lectures will be discussion-oriented and will provide many opportunities for student's to improve their scientific English abilities. In addition, the end of the course will introduce students to topics in modern physics.					
[Course Goals]					
To learn and understand basic phenomena from fundamental physical principles and conservation laws.					
[Course Schedule and Contents]					
Lectures on the basics of classical Newtonian mechanics will cover the following topics with each covered in two or three weeks:					
<ol style="list-style-type: none"> 1) Principles of momentum, velocity, and acceleration 2) Equations of linear and rotational motion, applications 3) Conservation laws, work and energy 4) Gravitation and physical phenomena in our daily lives 5) Introduction to topics in modern physics, such as relativity and quantum mechanics 					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
Student's comprehension of the course material will be evaluated based on participation in in-class discussions (20 points), homework sets (worth 60 points total), and a final exam or report (20 points).					
[Textbook]					
Not used					
[Regarding studies out of class (preparation and review)]					
Will be presented in class					
[Others (office hour, etc.)]					
Students interested in improving their scientific English are encouraged to join this course.					

Lecture code: N260002

Course numbering		U-LAS12 10026 LE57					
Course title <English>		Physics for All-E2 Physics for All-E2		Affiliated department, Job title, Name	Graduate School of Engineering Senior Lecturer, ISLAM, A K M Mahfuzul		
Group	Natural Sciences		Field(Classification)	Physics(Foundations)			
Language	English		Old group	Group B	Number of credits	2	
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period	2019 • First semester	
Day/period	Tue.3		Target year	Mainly 1st & 2nd year students	Eligible students	For liberal arts students	
[Outline and Purpose of the Course]							
<p>With the wide-spread of mobile communication, humans are now exposed to electromagnetic fields severely. As today's society is based on various electromagnetic phenomena, it has become a necessity to understand electromagnetics for all. In this course, the purpose will be to focus on the philosophical view to enrich the understanding of electromagnetics. We will learn that all the complex phenomena found in the universe actually consist of some basic rules. We will try to understand the basic rules using several experiments and illustrations. We will give concrete graphical representations of how basic rules work and then construct some complex phenomena using the rules. On our journey toward understanding electromagnetism, we will learn that the universe is more mysterious than we thought.</p>							
[Course Goals]							
<ul style="list-style-type: none"> • To understand the concept of electric and magnetic fields, and vector analysis concepts. • To understand wave propagation and relationship of Maxwell's equation in electromagnetic wave propagation. • To be able to explain various natural phenomena. • To understand the role of electromagnetic in modern society and the importance of being aware of electromagnetic radiation. 							
[Course Schedule and Contents]							
Basic outline of the course is given below. The subject and order may change during the course depending on the progress level and feedback.							
<ol style="list-style-type: none"> 1. Communication and wave [1 week] 2. Review of vector analysis [2 weeks] <ol style="list-style-type: none"> a) Field and Space b) Differentiation and Integration c) Gradient, Divergence and Curl 3. Wave theory [3 weeks] <ol style="list-style-type: none"> a) What is wave? b) Energy transportation c) Propagation of wave 4. Electric and magnetic fields [2 weeks] 5. Introduction to electromagnetism [3 weeks] <ol style="list-style-type: none"> a) Road to Maxwell's equation 6. Electromagnetic radiation and hygiene [2 weeks] 7. Natural phenomena by electromagnetics [1 week] 8. Examination [1 week] 							
Continue to Physics for All-E2(2) ↓ ↓ ↓							

Physics for All-E2(2)	
9. Feedback [1 week]	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Evaluation will be based on active participation (10%), assignments and reports (50%), and an term-end examination (40%).	
[Textbook]	
Instructed during class	
[Reference book, etc.]	
<p>(Reference book) The lecture series by the legendary physicist Richard Feynman will form the base of the course. A few related topics will be selected and presented by graphical illustrations to focus on the philosophical view.</p> <p>The Feynman Lectures on Physics, Volume II, http://www.feynmanlectures.caltech.edu/II_toc.html</p> <p>(Related URL) http://www.feynmanlectures.caltech.edu/II_toc.html(The Feynman Lectures on Physics, Volume II)</p>	
[Regarding studies out of class (preparation and review)]	
The students are encouraged to participate in discussion with others within and outside the class. Sample programs written in Python will be provided. Students are encouraged to play with the programs to visualize how the basic rules work and generate different phenomena.	
[Others (office hour, etc.)]	
Office hour will be announced during class. Questions and requests are always welcome by email. A dedicated website will be prepared with forum for discussion.	

Lecture code: N260001

Course numbering		U-LAS12 10026 LE57			
Course title <English>	Physics for All-E2 Physics for All-E2		Affiliated department, Job title,Name	Institute for Frontier Life and Medical Sciences Senior Lecturer,OKEYO, Kennedy Omondi	
Group	Natural Sciences		Field(Classification)	Physics(Foundations)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Tue.3		Target year	Mainly 1st year students	Eligible students For all majors
[Outline and Purpose of the Course]					
The lecture will focus on enabling students of non-physics majors to grasp basic concepts and principles of physics, and to learn how to apply them to understand the physical world around us. Particular focus will be on problem solving in mechanics, which will be presented systematically so that students gain a deeper understanding of mathematical and logical treatment of familiar physical problems. To further cement understanding and nurture students' love for science, theory will be supplemented with experiments as may be necessary.					
[Course Goals]					
1) To nurture students' problem solving ability. 2) To impact a deeper understanding of familiar physical phenomena.					
[Course Schedule and Contents]					
The following topics will be tackled with a presumption that students have little prior knowledge of physics.					
1) Introduction to vectors and motion (2 weeks) Here we will learn about vectors and how to use them to describe objects in motion.					
2) How to understand linear motion of objects and points (3 weeks) This topic will introduce basics of motion in a straight line such as displacement, velocity, acceleration. Newton's law of motion will also be discussed. By the end of this topic, you will be able to perform differentiation or integration to find displacement, velocity and acceleration of a body in motion in a straight line.					
3) Introduction to simple circular motions and oscillations (3 weeks) Sometimes motion occurs in a circular path, like when you drive around a curved road. This topic will introduce you to forces involved in circular motion such as centripetal and centrifugal forces. We will make everything pretty simple so that by the end of this topic, you will be able to derive the basic equations of circular motion. We will also look at harmonic oscillation exhibited by a mass attached to spring, which obeys Hooke's law.					
4) Introduction to momentum (2 weeks) We will learn about the relationship between force and velocity, i.e., momentum and how to solve apply the principle of conservation of momentum in solving equations of motion.					
5) Introduction to work and energy (2 weeks) <u>Work and energy are important physical properties. We will learn about how to move from force to obtain</u>					
Continue to Physics for All-E2(2) ↓ ↓ ↓					

Physics for All-E2(2)

work, and also from work to obtain energy (work-energy theorem). Concepts of potential energy and kinetic energy will be introduced and also, the principle of energy conservation will be discussed.

6) Introduction to electricity and magnetism (2 weeks)

A simplified introduction will be given to highlight the basics of both electricity and magnetism.

7) Exam and feedback (2 weeks)

[Class requirement]

None

[Method, Point of view, and Attainment levels of Evaluation]

- 1) Weekly assessment tests or reports will be given to gauge students' understanding of the lecture contents.
- 2) Evaluation: Assessment tests: 40% / Endterm exams: 60%

[Textbook]

Handouts

[Reference book, etc.]

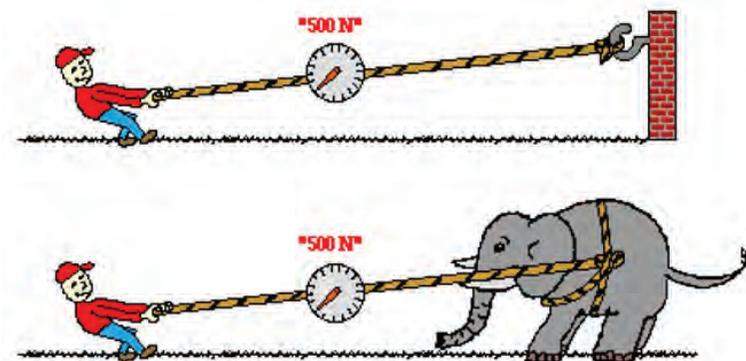
(Reference book)
David Halliday, Robert Resnick and Jearl Walker 『Fundamentals of Physics 9th Edition』 (Wiley; 9 edition) (ISBN-13: 978-0470469088)

[Regarding studies out of class (preparation and review)]

Students are encouraged to spare enough time for revision and review of previous lectures and read ahead in preparation for future lectures.

[Others (office hour, etc.)]

Office hour will be announced during class. Questions and requests are always welcome by email.



<http://www.physicsclassroom.com/>

Lecture code: N262001

Course numbering		U-LAS12 10025 LE57			
Course title <English>	Introduction to Modern Optics-E2		Affiliated department, Job title,Name	Graduate School of Engineering Senior Lecturer, BEAUCAMP, Anthony Tadeus Herve	
Group	Natural Sciences		Field(Classification)	Physics(Foundations)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Tue.2		Target year	Mainly 1st & 2nd year students	Eligible students For science students
[Outline and Purpose of the Course]					
Optics is a very practical field of physics that has enabled the fabrication of instruments and devices in almost every other areas of science and technology, including chemistry, biology, geology, etc... Students will learn the fundamental properties and behavior of light, and its interaction with matters (refraction, dispersion, diffraction, polarization...). The theory of geometric and wave optics will be taught, and their use in designing high performance optical assemblies from digital cameras to space telescopes.					
[Course Goals]					
<ul style="list-style-type: none"> - Grasp the importance of optics in enabling modern science and technology. - Understand the various aspects of light propagation in a vacuum and substance. - Use this knowledge to solve optical design problems using state-of-the-art optical design software. 					
[Course Schedule and Contents]					
<ol style="list-style-type: none"> 1. A brief history of optics and the nature of light [1 week]. 2. Basic of optics: Wavefronts, Fermat's principle, Snell's law [1 week]. 3. Geometric optics: Ray transfer matrices, thin vs. thick lenses [2 weeks]. 4. Imaging systems: Aperture/field stops, pupils, field of view [2 weeks]. 5. Optical aberrations: Chromatic and geometric aberrations [2 weeks]. 6. Wave optics 1: Huygens-Fresnel principle, interferometers [2 weeks]. 7. Wave optics 2: Fraunhofer diffraction, point spread function [2weeks]. 8. The Optical Software for Layout and Optimization (OSLO): <ul style="list-style-type: none"> - Learn how to layout optical systems [1 week]. - Learn how to optimize the performance of optical systems [1 week]. 					
Final examination [1 week]. Feedback session [1 week].					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
Evaluation will be based on: <ul style="list-style-type: none"> - Class Participation (10%): Student participation will be asked in solving problems and discussing theories and their application. - Homework (20%): Typical problems will be assigned, which you can solve by applying the laws and methods learnt during lectures (every 2 weeks). - Quizzes (20%): Mini-exams, to check that you remember important laws and principles from previous 					
Continue to Introduction to Modern Optics-E2(2) ↓ ↓ ↓					

Introduction to Modern Optics-E2(2)
lectures and study guides (every 4 weeks). - Final examination (50%): You will be tested with a series of problems that combine previously studied cases and original cases.
[Textbook]
Eugene Hecht 『Optics (4th Edition)』 ISBN:129-202-157-8 (Amazon link: http://www.amazon.co.jp/Optics-Eugene-Hecht/dp/1292021578/)
[Reference book, etc.]
(Reference book) Introduced during class
[Regarding studies out of class (preparation and review)]
Personal study using book by Hecht (10~15 pages per week).
[Others (office hour, etc.)]
Questions can be sent by email, and will be answered either electronically or by appointment (depending on the case).


Lecture code: N263001

Course numbering		U-LAS12 10027 LE57			
Course title <English>	Introduction to Light Control-E2 Introduction to Light Control-E2		Affiliated department, Job title,Name	Graduate School of Engineering Senior Lecturer,DE ZOYSA, Menaka	
Group	Natural Sciences		Field(Classification)	Physics(Foundations)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Wed.1	Target year	Mainly 2nd year students	Eligible students	For science students
[Outline and Purpose of the Course]					
The objective of the course is to introduce the light control. Starting with explaining the wave equation and basic properties of light, we will expand the lectures up-to cutting-edge technologies of light control by performing some experimental demonstrations.					
[Course Goals]					
<ul style="list-style-type: none"> • Understand basic properties of light and light control. • Follow the cutting-edge technologies. 					
[Course Schedule and Contents]					
1.Introduction to light (1 week) 2.Introduction to vector calculus (1 week) 3.Maxwell's equations, wave equations (2 weeks) 4.Reflection, transmittance, total internal reflection (2 weeks) 5.Interference theory and its control (2 weeks) 6.Diffraction theory and experiments (2 weeks) 7.Light emission and absorption, and its control (2 weeks) 8.Introduce cutting-edge light control technologies (2 weeks)					
[Class requirement]					
Fundamental Physics B (recommended)					
[Method, Point of view, and Attainment levels of Evaluation]					
Evaluation will be based on attendance and participation (10%), homework (40%) and final examination (50%).					
[Textbook]					
Not used					
[Reference book, etc.]					
(Reference book) Max Born and Emil Wolf 『Principles of Optics』					
[Regarding studies out of class (preparation and review)]					
Students are required to do their homework. When trouble is encountered during homework, please refer recommended textbook or please ask the instructor.					
[Others (office hour, etc.)]					
Office hour: Anytime by email and appointments should be made via email.					

Lecture code: N272001

Course numbering					
Course title <English>		Fundamentals of Materials I-E2 Fundamentals of Materials I-E2		Affiliated department, Job title,Name Graduate School of Engineering Senior Lecturer,GAO, Si	
Group		Natural Sciences		Field(Classification) Physics(Foundations)	
Language		English		Old group Group B	
				Number of credits 2	
Number of weekly time blocks		1		Class style Lecture	
				Course offered year/period 2019 • First semester	
Day/period		Thu.2		Target year Mainly 1st & 2nd year students	
				Eligible students For science students	
[Outline and Purpose of the Course]					
This is the first half of a two-semester course Fundamentals of Materials. The purpose of this course is to give a concise but comprehensive introduction covering all major classes of materials to the students majored in physical engineering. The characteristics of all main classes of materials - metals, polymers and ceramics, as well as their physical properties, are explained with reference to real-world examples. In the first semester we will firstly introduce the elements and atomic structure, and then mainly focus on the structure and mechanical properties of metallic materials.					
[Course Goals]					
Students are expected to have a broad understanding of fundamental aspects of metallic materials, such as atomic microstructure, microstructures and mechanical properties of metallic materials by taking this course.					
[Course Schedule and Contents]					
Week 1. Introduction to materials and materials science Week 2. Atomic structure and interatomic bonding Week 3. Structure of crystalline solids Week 4-5. Imperfections in solids Week 5. Diffusion Week 6-7. Mechanical properties of metals Week 8. Strengthening mechanisms in crystalline materials Week 9. Failure of materials Week 10. Phase diagrams Week 11. Phase transformations Week 12-13. Engineering alloys Week 14. Characterization techniques of the materials					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
Attendance [50%] Homework assignments [50%]					
----- Continue to Fundamentals of Materials I-E2(2) ↓ ↓ ↓					

Fundamentals of Materials I-E2(2)	
[Textbook]	
Not used	
[Reference book, etc.]	
(Reference book) William D. Callister, David G. Rethwisch, 『Materials Science and Engineering: An Introduction』 (John Wiley & Sons Inc) ISBN:1118319222	
[Regarding studies out of class (preparation and review)]	
Assignment (Quiz) are set for the review after class. The necessary time for assignments is around 1.5 hours for each class.	
[Others (office hour, etc.)]	

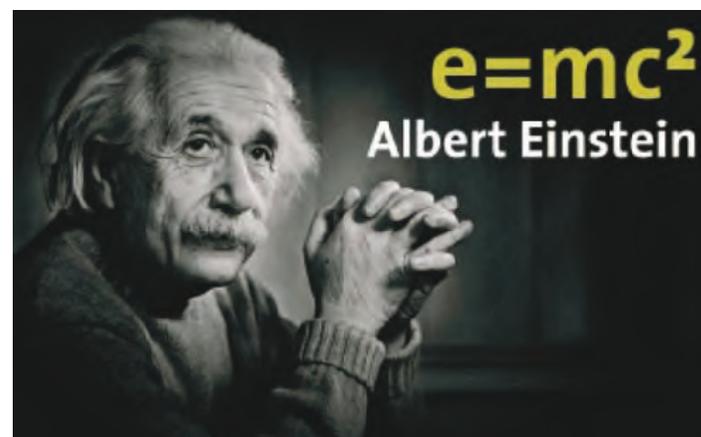
Lecture code: N257001

Course numbering		U-LAS12 20002 LE57			
Course title <English>	Introduction to Statistical Physics-E2 Introduction to Statistical Physics-E2		Affiliated department, Job title,Name	Graduate School of Science Senior Lecturer,PETERS,Robert	
Group	Natural Sciences		Field(Classification)	Physics(Development)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Wed.4		Target year	Mainly 1st & 2nd year students	Eligible students For science students
[Outline and Purpose of the Course]					
<p>The first part of the lecture covers basic thermodynamics such as the laws of thermodynamics and thermodynamic potentials. In this part, we will study a variety of examples and applications. The second part of the lecture deals with statistical physics. The goal of the second part is to derive and understand the laws of thermodynamics starting from a microscopic view. Among the subjects covered in this part is the statistical interpretation of temperature and entropy. We will learn the concept of probability and introduce the microcanonical and canonical ensembles and their applications.</p>					
[Course Goals]					
<ul style="list-style-type: none"> - Understanding the laws of thermodynamics and the thermodynamic potentials; - Understanding the connection between microscopic properties (e.g. velocity-probability) and macroscopic properties (temperature, pressure) - Understanding the connection between a microscopic Hamiltonian and macroscopic properties 					
[Course Schedule and Contents]					
<p>The lecture can be divided into two parts. The first part deals with the laws of thermodynamics and the second part with deriving these laws from microscopic level.</p> <p>1) Thermodynamics</p> <ul style="list-style-type: none"> - Introduction to the laws of thermodynamics (3-5 weeks) <ul style="list-style-type: none"> - equation of state (temperature, pressure, work, heat) - energy and entropy - applications and examples - thermodynamic potentials (2-3 weeks) <ul style="list-style-type: none"> - Legendre transformation - free energy, enthalpy, ... - More Applications (2-3 weeks) <ul style="list-style-type: none"> - chemical reactions - phase transitions <p>2) Statistical Physics</p> <ul style="list-style-type: none"> - probability (1 week) - microcanonical ensemble and entropy (2-3 week) - <u>canonical ensemble, fluctuations (2-3 weeks)</u> 					
Continue to Introduction to Statistical Physics-E2(2) ↓ ↓ ↓					

Introduction to Statistical Physics-E2(2)	
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[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Worksheets/reports (50%) + examination (50%)	
[Textbook]	
Not fixed	
[Reference book, etc.]	
<p>(Reference book) Introduced during class</p>	
[Regarding studies out of class (preparation and review)]	
Revision of the course by doing the work sheets	
[Others (office hour, etc.)]	
Office hour:After the course	
The worksheets will give students an opportunity to practice their English skills in science.	

Lecture code: N249001

Course numbering		U-LAS12 20004 LE57			
Course title <English>	Theory of Special Relativity-E2 Theory of Special Relativity-E2		Affiliated department, Job title,Name	Yukawa Institute for Theoretical Physics Associate Professor, Antonio De Felice	
Group	Natural Sciences		Field(Classification)	Physics(Development)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Wed.2		Target year	Mainly 1st & 2nd year students	Eligible students For all majors
[Outline and Purpose of the Course]					
The aim of this lecture is to introduce the basic concepts of Einstein's theory of relativity. First, the theory of special relativity will be explained in detail. After this, the basics of general relativity will be introduced in an elementary way. The lecture is supposed to be interactive.					
[Course Goals]					
The students will learn the formalism needed to study special/general relativity. They will learn a geometrical intuition in the theory of relativity.					
[Course Schedule and Contents]					
I. Introduction and Historical backgrounds II. Einstein's Principle of Relativity III. Special Relativity and Lorentz Transformation IV. Relativistic Mechanics V. Interesting Examples of Lorentz Transformation VI. Maxwell Equation and Lorentz Invariance VII. Relativistic Momentum and Energy II: Four Vectors and Transformation Properties VIII. General Relativity					
It will be offered to 14 classes for each week of the semester.					
[Class requirement]					
Fundamental Physics A (necessary) , Fundamental Physics B (recommended)					
[Method, Point of view, and Attainment levels of Evaluation]					
Evaluation method: 25%: mid term exam; 75%: final exam.					
[Textbook]					
Antonio De Felice 『Lecture notes (given in the class as a pdf file)』					
[Reference book, etc.]					
(Reference book) Hans Stephani 『Relativity』 Wolfgang Pauli 『Theory of Relativity』					
[Regarding studies out of class (preparation and review)]					
The students will know the topic to be discussed in the next lecture, so that they can study on the book and my notes (of which they can have a copy, if needed).					
[Others (office hour, etc.)]					
2 hours of office hours per week to be decided with students.					



Lecture code: N254001

Course numbering		U-LAS12 20006 LE57			
Course title <English>	Analytic Dynamics-E2 Analytic Dynamics-E2		Affiliated department, Job title,Name	Graduate School of Science Senior Lecturer,PETERS,Robert	
Group	Natural Sciences		Field(Classification)	Physics(Development)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Tue.3		Target year	Mainly 2nd year students	Eligible students For science students
[Outline and Purpose of the Course]					
Starting from Newton mechanics, we will introduce the principle of stationary action, and the Lagrangian formalism for solving problems in theoretical mechanics. Using this formalism, we will analyze different important examples such as oscillations, central forces and the rigid body. Thereafter, we will introduce the Hamiltonian formalism, which is the basis for Quantum mechanics.					
[Course Goals]					
- to understand and be able to use the Lagrangian formalism; - to understand the basics of the Hamiltonian formulation of classical mechanics					
[Course Schedule and Contents]					
The course can be roughly divided into three parts.					
1) theoretical introduction into Lagrangian mechanics with simple examples (4-6 weeks) - repetition of Newton mechanics - D'Alembert's principle - Lagrangian multiplier - introduction into variational calculus					
2) application of Lagrangian mechanics to more complex situations (6-8 weeks) - oscillations - central forces - rigid body					
3) introduction into Hamiltonian formalism (1-2 weeks)					
Depending on the progress, a possible extension at the end of the course is an introduction into special relativity.					
[Class requirement]					
Understanding of kinematics and Newton mechanics; basic knowledge of differential equations.					
[Method, Point of view, and Attainment levels of Evaluation]					
Worksheets/reports (50%) + examination (50%)					
----- Continue to Analytic Dynamics-E2(2) ↓ ↓ ↓					

Analytic Dynamics-E2(2)	

[Textbook]	
Not fixed	
[Reference book, etc.]	
(Reference book)	
Introduced during class	
[Regarding studies out of class (preparation and review)]	
Revision of the course by doing the work sheets	
[Others (office hour, etc.)]	
Office hour: After the course	
The worksheets will give students an opportunity to practice their English skills in science.	

Lecture code: N270001

Course numbering					
Course title <English>	Introduction to Quantum Physics-E2 Introduction to Quantum Physics-E2		Affiliated department, Job title,Name	Graduate School of Engineering Senior Lecturer,Arseniy Aleksandrovich, Kuzmin	
Group	Natural Sciences		Field(Classification)	Physics(Development)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Tue.4		Target year	Mainly 2nd year students	Eligible students For science students
[Outline and Purpose of the Course]					
Quantum mechanics is one of the most successful theories in physics. It describes the physics of the microscopic world: molecular, atomic and subatomic processes. At first, we will follow the history of the quantum mechanics, and start with the black body radiation. The necessity of quantization arises from the failure to describe the black body radiation using classical physics. We will then examine the experimental evidences of the particle-wave duality. The Schrodinger equation is then introduced to describe simplest quantum systems. This course aims to show the necessity of quantum mechanics and to give listeners tools to describe the basic quantum systems.					
[Course Goals]					
To understand the fundamental concepts of quantum mechanics. To learn mathematical methods which describe quantum objects.					
[Course Schedule and Contents]					
1. Introduction. 2. Black body radiation. 3. Quantization of energy. 4. Atomic structure and origins of quantum theory: Rutherford model of atom. 5. Atomic structure and origins of quantum theory: Bohr model of atom. 6. Wave-particle duality: photoelectric effect. 7. Wave-particle duality: Compton scattering, wave nature of electron. 8. Wave function and Schrodinger equation: Schrodinger equation. 9. Wave function and Schrodinger equation: meaning of the wave function, its properties. 10. Wave function and Schrodinger equation: Heisenberg's uncertainty principle. 11. One dimensional quantum system: time independent Schrodinger equation. 12. One dimensional quantum system: particle in the infinite potential well. 13. One dimensional quantum system: harmonic oscillator. 14. Physical states and operators.					
[Class requirement]					
It is desirable to take introduction to physics A and B courses. Knowledge of mechanics and wave theory is welcome.					
[Method, Point of view, and Attainment levels of Evaluation]					
Evaluation will be based on: 10% Attendance 20% Homework					
Continue to Introduction to Quantum Physics-E2(2) ↓ ↓ ↓					

Introduction to Quantum Physics-E2(2)	

20% Quiz 50% Final exam	
[Textbook]	
Instructed during class	
[Reference book, etc.]	
(Reference book) Introduced during class	
[Regarding studies out of class (preparation and review)]	
Preparation for lectures will include revision of class materials and homework assignments. Detailed instructions will be given during the class.#160	
[Others (office hour, etc.)]	

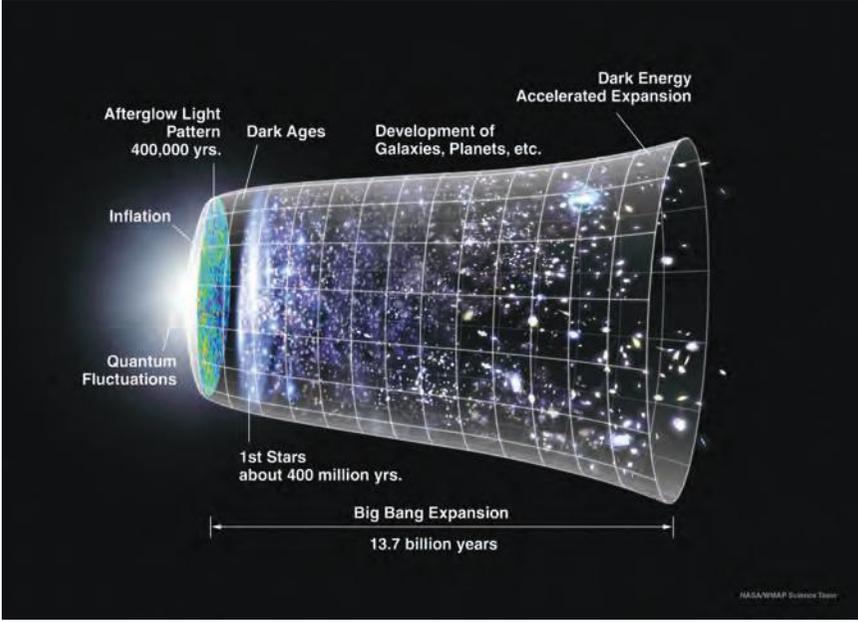
Lecture code: N269001

Course numbering					
Course title <English>	Introduction to Plasma Science-E2 Introduction to Plasma Science-E2		Affiliated department, Job title,Name	Graduate School of Engineering Senior Lecturer, Arseniy Aleksandrovich, Kuzmin	
Group	Natural Sciences		Field(Classification)	Physics(Development)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Tue.3		Target year	Mainly 1st year students	Eligible students For all majors
[Outline and Purpose of the Course]					
Plasma is diverse and very abundant. Almost 99% of the visible matter in the observable Universe is in the state of plasma. It is everywhere in Space and on Earth, naturally occurring and produced in laboratories or used in factories. Stars, nebulas, Aurora Borealis, sparks, arc welding, thermonuclear reactors - this is just a beginning of a big list of various plasmas. In this course the so called fourth state of matter - plasma, will be introduced. The main plasma properties and behavior is explained. Cosmic plasma, laboratory plasma and its application, plasma in technology and in thermonuclear fusion research are explained in this course.					
[Course Goals]					
The goal of this course is to introduce listeners to the "fourth state of matter" - plasma. To understand what is plasma and what are its properties. To learn the role of plasma in the cosmic phenomena. To learn about scientific and technological applications of plasma. To understand basic idea of the fusion energy research.					
[Course Schedule and Contents]					
1. What is plasma, its definition and fundamental properties. 2. Formation of plasma and ionization of gases. 3. Laboratory plasma: glow, arc and corona discharges. 4. Cosmic plasma: core of a star, its corona and solar wind 5. Aurora and how it is formed. 6. Technological applications of plasma. 7. The ultimate energy source on Earth: thermonuclear fusion.					
Each topic will be introduced in 2-3 lectures.					
[Class requirement]					
None					
----- Continue to Introduction to Plasma Science-E2(2) ↓ ↓ ↓					

Introduction to Plasma Science-E2(2)	
[Method, Point of view, and Attainment levels of Evaluation]	
Evaluation will be based on: 10% Attendance 20% Homework 20% Quiz 50% Final exam	
[Textbook]	
Instructed during class	
[Reference book, etc.]	
(Reference book) Introduced during class	
[Regarding studies out of class (preparation and review)]	
Preparation for lectures will include revision of class materials and homework assignments. Detailed instructions will be given during the class.#160	
[Others (office hour, etc.)]	

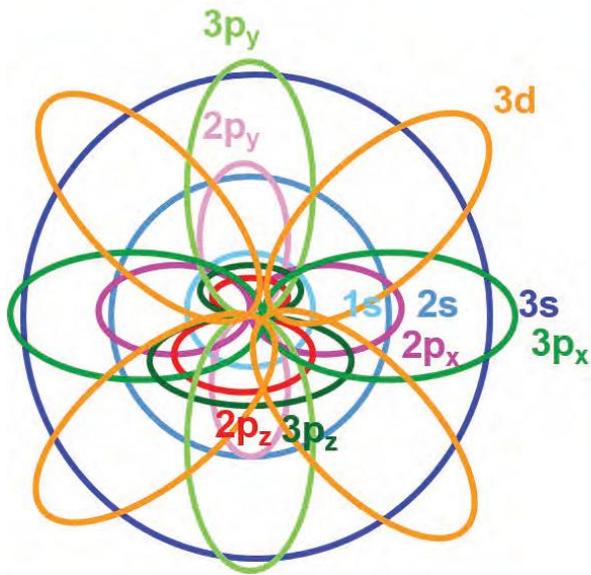
Lecture code: N248001

Course numbering		U-LAS12 20017 LE57			
Course title <English>	Introduction to Cosmology-E2 Introduction to Cosmology-E2		Affiliated department, Job title,Name	Yukawa Institute for Theoretical Physics Associate Professor, Antonio De Felice	
Group	Natural Sciences		Field(Classification)	Physics(Development)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Wed.2		Target year	Mainly 1st & 2nd year students	
[Outline and Purpose of the Course]					
The aim of this lecture is to introduce the basic concepts of modern cosmology. Our current understanding about the history of the universe is explained so that one can capture how observational data are interpreted with the aid of the law of physics in an elementary way. For this purpose, the development of the basic theories of physics necessary to describe modern cosmology will be reviewed in a less rigorous way. The lecture is supposed to be interactive.					
[Course Goals]					
Students will be able to understand how to approach the study of cosmology in a mathematical and physical way. They will be introduced to the problems of modern cosmology, and to the methods cosmologist use to try to solve them. The discussion will tend to link cosmology to other fields in physics, e.g. thermodynamics, (some notions of particle physics.					
[Course Schedule and Contents]					
I. Introduction and Historical backgrounds II. The Role of the Speed of Light in Special Relativity III. Newtonian Gravity and General Relativity IV. Homogeneous Universe Model based on General Relativity and Discovery of the Expanding Universe V. Tips of Thermodynamics VI. Nucleosynthesis in the Early Universe VII. Prediction and Discovery of Cosmic Microwave background VIII Shortcoming of the Big-Bang Cosmology IX. Inflationary universe X. Inevitable Quantum fluctuation XI. Structure Formation of the Universe XII. Inflation Again in the Present Universe?					
It will be offered to 14 classes for each week of the semester.					
[Class requirement]					
None					
Continue to Introduction to Cosmology-E2(2) ↓ ↓ ↓					

Introduction to Cosmology-E2(2)	
[Method, Point of view, and Attainment levels of Evaluation]	
Evaluation method: 25%: mid term exam; 75%: final exam.	
[Textbook]	
Antonio De Felice 『Lecture notes』 (given in the class as a pdf file)	
[Reference book, etc.]	
(Reference book)	
A. Liddle 『An Introduction to Modern Cosmology』 (John Wiley & Sons, Inc.)	
[Regarding studies out of class (preparation and review)]	
The students will be given the opportunity to have copies of the notes. They will know a week before the subject to be discussed in the next lecture.	
[Others (office hour, etc.)]	
Office hours: 2hrs per week to be decided with the students.	
	

Lecture code: N371001

Course numbering		U-LAS13 10002 LE60			
Course title <English>	Essentials of Basic Physical Chemistry-E2		Affiliated department, Job title,Name	Institute of Advanced Energy Senior Lecturer,ARIVAZHAGAN RAJENDRAN	
	Essentials of Basic Physical Chemistry-E2				
Group	Natural Sciences		Field(Classification)	Chemistry(Foundations)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Mon.2		Target year	Mainly 1st & 2nd year students	
[Outline and Purpose of the Course]			We learn about the structure, properties and reactions of matters for the base of physical chemistry. Contents are covered by following fields of the structure and properties of the atom and molecules, quantum chemistry, thermodynamics, and chemical reactions. Aim of this course is the understanding of these concepts.		
[Course Goals]			The aim of this class is to understand the basic principles of physical chemistry for beginners.		
[Course Schedule and Contents]			<ol style="list-style-type: none"> Basics and units of chemistry Structure and property of the atom: Bohr's atomic model Structure and property of the atom: Electronic waviness and orbit function Structure and property of the atom: Electron configuration and periodic table Structure and property of the atom: Ionization energy and electron affinity Molecules: Covalent bonds (s and p-bonds), hybrid orbitals Molecules: Coordinate bond Molecules: Ionic bonds, van der Waals force, and hydrogen bond Thermodynamics: 1st & 2nd law of thermodynamics and phase diagram Chemical equilibrium: Equilibrium constant and Le Chatelier's principle Chemical equilibrium: A rate equation and reaction mechanism Oxidation and reduction: Oxidation state and battery Acid and base: Definition and dissociation equilibrium Acid and base: Neutralization titration, hydrolysis, and buffer solution Term examination 		
[Class requirement]			None		
[Method, Point of view, and Attainment levels of Evaluation]			Results will be evaluated by the submission of homework written in English (30%), attendance and discipline (20%), and assignment (50%).		
Continue to Essentials of Basic Physical Chemistry-E2(2) ↓ ↓ ↓					

Essentials of Basic Physical Chemistry-E2(2)	
[Textbook]	
Peter Atkins and Julio de Paula 『Atkins' Physical Chemistry, 10th Edition』 (Oxford University Press) ISBN:978-0-19-969740-3	
[Reference book, etc.]	
(Reference book) Introduced during class	
[Regarding studies out of class (preparation and review)]	
I recommend that the students should review the points to be learned. The students, who have not studied high-school physics, can take this lecture, it is desired that they should make up for the knowledge lacked by self-study and inquiry to the teacher after lectures or in office hour.	
[Others (office hour, etc.)]	
Office hours are set at 15:00-17:00 in every Friday.	
 <p>The diagram illustrates the spatial distribution of atomic orbitals for the first three principal energy levels. The 1s orbital is a single red sphere at the center. The 2s orbital is a blue sphere with a smaller inner sphere. The 2p orbitals are three pink dumbbells oriented along the x, y, and z axes. The 3s orbital is a green sphere with two smaller inner spheres. The 3p orbitals are three green dumbbells oriented along the x, y, and z axes. The 3d orbitals are five orange dumbbells with complex shapes. Labels include 1s, 2s, 2p_x, 2p_y, 2p_z, 3s, 3p_x, 3p_y, 3p_z, and 3d.</p>	

Lecture code: N365002

Course numbering		U-LAS13 10004 LE60			
Course title <English>	Basic Physical Chemistry (thermodynamics)-E2		Affiliated department, Job title, Name	Graduate School of Engineering Senior Lecturer, PARK, Jaehong	
	Basic Physical Chemistry (thermodynamics)-E2				
Group	Natural Sciences		Field(Classification)	Chemistry(Foundations)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Thu.3		Target year	Mainly 1st & 2nd year students	Eligible students For science students
[Outline and Purpose of the Course]					
Physical chemistry is a discipline that aims to reveal the basic concepts and principles of the formation of molecules and substances, the nature and characteristics of chemical bonds and molecular structures, chemical equilibrium, and reaction rates. This course is designed as an introductory physical chemistry, specifically aims to learn and understand the principles and applications of thermodynamics. The knowledge learned from this course will be a foundation for learning all areas of chemistry, including advanced-level physical chemistry, organic chemistry and inorganic chemistry, which are available in grades 2-4.					
[Course Goals]					
In this course, we learn the phases of substances, quantitative description of the behaviors of gases in accordance with state functions of ideal gas and real gas. Also, thermodynamic quantity, entropy and free energy will be discussed. Finally, we will apply this knowledge to chemical reactions and learn the practical utility of thermodynamics in chemistry.					
[Course Schedule and Contents]					
Contents will be discussed in the class. (The number does not mean the number of classes) The course schedule is subject to change, depending on the student's understanding. (Each item will be covered by 1-2 weeks.)					
<ol style="list-style-type: none"> 1. Basic concepts of thermodynamics (system, surroundings, work, heat, energy, state functions, heat capacities) 2. Gas, ideal and real gases 3. States of a system 4. Phase transition 5. The 0th law of thermodynamics 6. The 1st law of thermodynamics 7. Enthalpy 8. The spontaneity of physical and chemical changes, 9. Entropy, Gibbs energy, the third law of thermodynamics 10. Chemical equilibrium 11. The response of equilibrium to the conditions 					
----- Continue to Basic Physical Chemistry (thermodynamics)-E2(2) ↓ ↓ ↓					

Basic Physical Chemistry (thermodynamics)-E2(2)	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
One final exam (60%), 6 tasks (30% = 6 X 5%; quiz, homework, or report), attendance and class participation (10%)	
[Textbook]	
D. W. Oxtoby and H. P. Gillis 『Principles of Modern Chemistry, 8th ed.』 ISBN:978-1305079113 (Optional, other elementary-level chemistry books are OK.)	
[Reference book, etc.]	
(Reference book) Atkins and J. de Paula 『Physical Chemistry, 9th ed.』 ISBN:9780199697403	
[Regarding studies out of class (preparation and review)]	
Basic mathematical knowledge such integration and differentiation is necessary, but most of them will be introduced in the class, in supplementary materials, or in office-hours. Students are responsible for reviewing each class and preview.	
[Others (office hour, etc.)]	
Instructor: Jaehong Park (email: j.park@moleng.kyoto-u.ac.jp)	
Course meeting: (Yoshida South campus, TBD), 1 session/week, 90 mins/session	
Office hour: Option 1- At Katsura campus(A4-205), any date could be possible, but appointment by email. Option 2- At Yoshida campus, on Thursday appointment by email.	

Lecture code: N365001

Course numbering		U-LAS13 10004 LE60			
Course title <English>	Basic Physical Chemistry (thermodynamics)-E2		Affiliated department, Job title, Name	Institute of Advanced Energy Senior Lecturer, ARIVAZHAGAN RAJENDRAN	
	Basic Physical Chemistry (thermodynamics)-E2				
Group	Natural Sciences		Field(Classification)	Chemistry(Foundations)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Mon.3		Target year	Mainly 1st & 2nd year students	
			Eligible students	For science students	
[Outline and Purpose of the Course]					
We learn about the thermodynamics in the state-change of matter, also in the chemical reactions. Contents of the lecture covers the following fields of change of state, thermodynamic laws, definition of the quantities (enthalpy, entropy, free energy, chemical potential), chemical equilibrium, and reaction kinetics. Aim of this course is the understanding of these concepts.					
[Course Goals]					
The aim of this class is to understand the basic principles of thermodynamics.					
[Course Schedule and Contents]					
1. Change of the system and quantity of state 2. Thermal energy and work 3. 1st law of thermodynamics: Change of internal energy and enthalpy 4. Chemical reaction and thermal energy 5. Interpretation of internal energy in molecular level 6. Change of state of the ideal gas 7. 2nd law of thermodynamics: Entropy 8. Entropy change in the change of state 9. 3rd law of thermodynamics: Conversion from heat to work 10. Gibbs energy 11. Change of the Gibbs energy when temperature and pressure change 12. Chemical potential 13. Change of state and chemical potential change of matter 14. Chemical equilibrium and rate of chemical reaction 15. Term examination					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
Results will be evaluated by the submission of homework written in English (30%), attendance and discipline (20%), and assignment (50%).					
[Textbook]					
Yunus A. Cengel and Michael A. Boles 『Thermodynamics: An Engineering Approach, 8th Edition in SI Units』 (McGraw-Hill Education) ISBN:978-981-4595-29-2					
Continue to Basic Physical Chemistry (thermodynamics)-E2(2) ↓ ↓					

Basic Physical Chemistry (thermodynamics)-E2(2)
Peter Atkins and Julio de Paula 『Atkins' Physical Chemistry, 10th Edition』 (Oxford University Press) ISBN:978-0-19-969740-3
[Reference book, etc.]
(Reference book) Introduced during class
[Regarding studies out of class (preparation and review)]
I recommend that the students should review the points to be learned.
[Others (office hour, etc.)]
Office hours are set at 15:00-17:00 in every Friday.

Lecture code: N366003

Course numbering		U-LAS13 10006 LE60					
Course title <English>	Basic Physical Chemistry (quantum theory)-E2		Affiliated department, Job title, Name	Graduate School of Engineering Senior Lecturer, PARK, Jaehong			
	Basic Physical Chemistry (quantum theory)-E2						
Group	Natural Sciences		Field(Classification)	Chemistry(Foundations)			
Language	English		Old group	Group B	Number of credits	2	
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period	2019 • First semester	
Day/period	Tue.3		Target year	Mainly 1st & 2nd year students		Eligible students	For science students
[Outline and Purpose of the Course]							
Physical chemistry is a discipline that aims to reveal the basic concepts and principles of the formation of molecules and substances, the nature and characteristics of chemical bonds and molecular structures, chemical equilibrium, and reaction rates. This course is designed as an introductory physical chemistry, specifically aims to learn and understand the principles and applications of quantum theory. The knowledge learned from this course will be a foundation for learning all areas of chemistry, including advanced-level physical chemistry, organic chemistry and inorganic chemistry, which are available in grades 2-4.							
[Course Goals]							
In this course, we learn the fundamental principles of the formation of atoms and molecules using basic quantum chemistry knowledge. Through this course, students will be able to equip knowledge and techniques to interpret and explain logically the natural phenomena of molecules and substances.							
[Course Schedule and Contents]							
Contents will be discussed in the class. (The number does not mean the number of classes) The course schedule is subject to change, depending on the student's understanding. (Each item will be covered by 1-2 weeks.)							
<ol style="list-style-type: none"> 1. Atoms and their physical structures 2. Basic definitions useful for modern chemistry 3. Wave & light 4. Bohr model 5. Wave-particle duality 6. Schrodinger equation 7. Particle-in-a-box models 8. Hydrogen atom 9. Shell model, Aufbau principle, electron configuration, atomic orbital 10. Chemical bond 11. Molecular orbital 12. Valence bond theory 13. Molecular orbital theory 14. Linear-combination of atomic orbitals 							
----- Continue to Basic Physical Chemistry (quantum theory)-E2(2) ↓ ↓ ↓							

Basic Physical Chemistry (quantum theory)-E2(2)	

[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
One final exam (60%), 6 tasks (30% = 6 X 5%; quiz, homework, or report), attendance and class participation (10%)	
[Textbook]	
D. W. Oxtoby and H. P. Gillis 『Principles of Modern Chemistry, 8th ed.』 ISBN:978-1305079113 (Optional, other elementary-level chemistry books are OK.)	
[Reference book, etc.]	
(Reference book) Atkins and J. de Paula 『Physical Chemistry, 9th ed.』 (Oxford University Press) ISBN:9780199697403 (Another edition is also fine)	
[Regarding studies out of class (preparation and review)]	
Basic mathematical knowledge such vector, integration, and differentiation is necessary, but most of them will be introduced in the class or in supplementary materials, or office-hours. Students are responsible for reviewing each class and preview.	
[Others (office hour, etc.)]	
Instructor: Jaehong Park (email: j.park@moleng.kyoto-u.ac.jp)	
Course meeting: (Yoshida South campus, TBD), 1 session/week, 90 mins/session	
Office hour:	
Option 1- At Katsura campus(A4-205), any date could be possible, but appointment by email.	
Option 2- At Yoshida campus, on Tuesday appointment by email.	

Lecture code: N366002

Course numbering		U-LAS13 10006 LE60			
Course title <English>	Basic Physical Chemistry (quantum theory)-E2		Affiliated department, Job title, Name	Institute of Advanced Energy Senior Lecturer, ARIVAZHAGAN RAJENDRAN	
	Basic Physical Chemistry (quantum theory)-E2				
Group	Natural Sciences		Field(Classification)	Chemistry(Foundations)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Mon.2		Target year	Mainly 1st & 2nd year students	Eligible students For science students
[Outline and Purpose of the Course]					
We learn about the basics of quantum chemistry including the duality of the wave and the particle, the quantization of the energy, the wave function and orbitals of atoms, Schroedinger wave equation and spin of electron. Aim of this course is the understanding of these concepts.					
[Course Goals]					
The aim of this class is to understand the basic principles of quantum chemistry.					
[Course Schedule and Contents]					
1. Property of the electromagnetic wave 2. Bohr's atomic model 3. De Broglie wave of matter 4. Time independent Schrödinger wave equation 5. Time dependent Schrödinger wave equation 6. One dimensional potential wells 7. One dimensional harmonic oscillation 8. Wave equation of hydrogen atom 9. Wave function and energy eigenvalue of hydrogen atom 10. Angular momentum and Zeeman effect 11. Spin of electron 12. Spin-orbit interaction 13. Wave function of the hydrogen molecular ion and approximation 14. Application of quantum chemistry 15. Term examination					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
Results will be evaluated by the submission of homework written in English (30%), attendance and discipline (20%), and assignment (50%).					
[Textbook]					
Donald A. McQuarrie 『Quantum Chemistry, 2nd Edition』 (University Science Books) ISBN:978-1-891389-50-4					
Peter Atkins and Julio de Paula 『Atkins' Physical Chemistry, 10th Edition』 (Oxford University Press)					
Continue to Basic Physical Chemistry (quantum theory)-E2(2) ↓ ↓					

Basic Physical Chemistry (quantum theory)-E2(2)

ISBN:978-0-19-969740-3

[Reference book, etc.]

(Reference book)

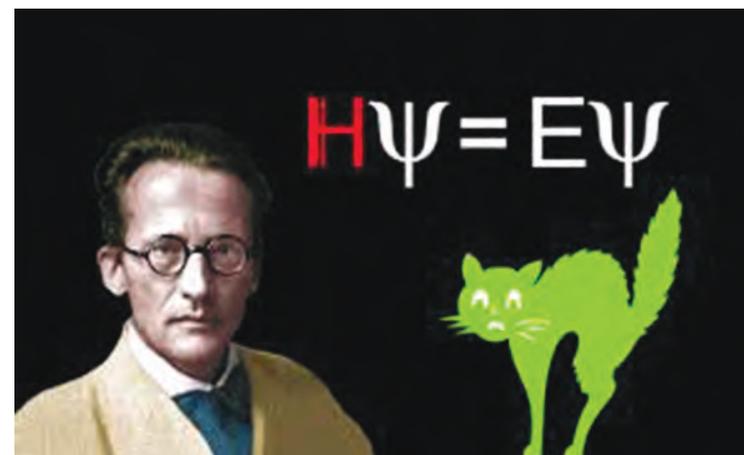
Introduced during class

[Regarding studies out of class (preparation and review)]

I recommend that the students should review the points to be learned.

[Others (office hour, etc.)]

Office hours are set at 15:00-17:00 in every Friday.



Lecture code: N368002

Course numbering		U-LAS13 10008 LE60			
Course title <English>	Basic Organic Chemistry I-E2 Basic Organic Chemistry I-E2		Affiliated department, Job title,Name	Graduate School of Engineering Associate Professor, Juha Lintuluoto	
Group	Natural Sciences		Field(Classification)	Chemistry(Foundations)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Thu.2	Target year	Mainly 1st year students	Eligible students	For science students
[Outline and Purpose of the Course]					
The course will provide a complete cover for the first part basics of organic chemistry. This course gives the opportunity to learn English while studying chemistry, an important skill for chemists. This course is suitable for chemistry major students and covers the Basic Organic Chemistry I 「基礎有機化学I」 course held for classes T17-22 in Japanese.					
[Course Goals]					
The students will learn the fundamentals of chemical bonding, stereochemistry and selected organic reactions. Also, the course provides the information for successive attendance in Basic Organic Chemistry II course.					
[Course Schedule and Contents]					
Course Introduction (1 Lesson) Structure and Bonding (2 Lessons) Chapter 1 Polar Covalent Bonds; Acids and Bases (2 Lessons) Chapter 2 Organic Compounds: Alkanes and Their Stereochemistry (2.5 Lessons) Chapter 3 Organic Compounds: Cycloalkanes and Their Stereochemistry (2.5 Lessons) Chapter 4 An Overview of Organic Reactions (2 Lessons) Chapter 6 Alkenes and Alkynes (2 Lessons) Chapter 7					
[Class requirement]					
This course is suitable for chemistry major students from groups 1T17-1T22.					
[Method, Point of view, and Attainment levels of Evaluation]					
Class performance, home work, and final test.					
[Textbook]					
McMurry 『Organic Chemistry with Biological Applications』 (Cengage Learning) (2nd and 3rd Editions, Chapters 1-4, 6-7) Japanese version of McMurry is also OK.					
[Regarding studies out of class (preparation and review)]					
Home work studies.					
[Others (office hour, etc.)]					

Lecture code: N368001

Course numbering		U-LAS13 10008 LE60			
Course title <English>		Basic Organic Chemistry I-E2 Basic Organic Chemistry I-E2		Affiliated department, Job title,Name Institute for Chemical Research Senior Lecturer,Amelie Perron	
Group	Natural Sciences		Field(Classification)		Chemistry(Foundations)
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Tue.5		Target year	Mainly 1st & 2nd year students	
[Outline and Purpose of the Course]		This course is intended for Japanese and international students registered in natural science majors who are interested in learning chemistry in English. Basic Organic Chemistry I explains the fundamental concepts of organic chemistry, aiming to help students understand the structures and properties of organic compounds. This course can be taken alone or in combination with Basic Organic Chemistry II.			
[Course Goals]		Students will be able to analyze the structure of organic compounds and predicting their properties based on their bonding, atomic orbitals, hybridization state, intermolecular forces and resonance structures.			
[Course Schedule and Contents]		The semester will be divided as follows: Week 1: Introduction to Organic Chemistry Week 2: Atomic Orbitals Week 3: Molecular Representations Week 4: Geometry of Compounds Week 5: Intermolecular Forces Week 6: Resonance Week 7: Mid-term Exam Week 8: Acids and Bases (Part 1) Week 9: Acids and Bases (Part 2) Week 10: IUPAC (International Union of Pure and Applied Chemistry) Nomenclature (Part 1) Week 11: IUPAC Nomenclature (Part 2) Week 12: Conformations of Alkanes and Cycloalkanes Week 13: Amino Acids and Proteins Week 14: Classification and Structures of Carbohydrates Week 15: Final Exam			
[Class requirement]		None			
Continue to Basic Organic Chemistry I-E2(2) ↓ ↓ ↓					

Basic Organic Chemistry I-E2(2)**[Method, Point of view, and Attainment levels of Evaluation]**

Evaluation will be based on class attendance and active participation (30%), mid-term exam (30%) and final examination (40%).

[Textbook]

David Klein 『Organic Chemistry』 (Wiley) ISBN:1118452283 (not mandatory)

[Reference book, etc.]

(Reference book)

Handouts will be provided at the beginning of each lecture.

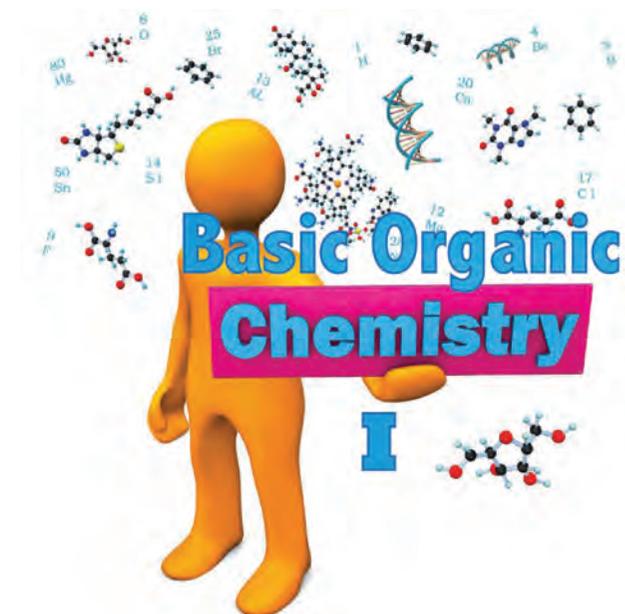
[Regarding studies out of class (preparation and review)]

Students should review the course materials after each class.

[Others (office hour, etc.)]

Teaching Approach:

The new concepts are introduced in a skill-building format with practice problems (in class) and exercises (in class) to help students master the course material (no homework).



Lecture code: N369002

Course numbering		U-LAS13 10009 LE60			
Course title <English>	Basic Organic Chemistry II-E2 Basic Organic Chemistry II-E2		Affiliated department, Job title,Name	Graduate School of Engineering Associate Professor, Juha Lintuluoto	
Group	Natural Sciences		Field(Classification)	Chemistry(Foundations)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Thu.2	Target year	Mainly 1st year students	Eligible students	For science students
[Outline and Purpose of the Course]					
The course will provide a complete cover for the second part basics of organic chemistry. This course gives the opportunity to learn English while studying chemistry, an important skill for chemists. This course is suitable for chemistry major students and covers the Basic Organic Chemistry II 「基礎有機化学II」 course held for classes T17-22 in Japanese.					
[Course Goals]					
The students will learn the detailed basics of stereochemistry and selected organic reactions for aliphatic and aromatic compounds. Also, the course provides the information for successive attendance in Organic Chemistry 2nd year courses for chemistry major students.					
[Course Schedule and Contents]					
Reactions of Alkenes and Alkynes (3 Lessons) Chapter 8 Aromatic Compounds (3 Lessons) Chapter 9 Stereochemistry (2 Lessons) Chapter 5 Alkylhalides: Nucleophilic Substitutions and Eliminations (3 Lessons) Chapter 12 Alcohols, Phenols, and Thiols (3 Lessons) Chapter 13 Feedback (1 Lesson)					
[Class requirement]					
This course is suitable for chemistry major students from groups 1T17-1T22 who passed Basic Organic Chemistry I course.					
[Method, Point of view, and Attainment levels of Evaluation]					
Class performance, home work, and final test.					
[Textbook]					
McMurry 『Organic Chemistry with Biological Applications』 (Cengage Learning) (2nd and 3rd Editions, Chapters 5, 8-9, 12-13) Japanese version of McMurry is also OK.					
[Regarding studies out of class (preparation and review)]					
Home work studies.					
[Others (office hour, etc.)]					

Lecture code: N369003

Course numbering		U-LAS13 10009 LE60			
Course title <English>		Basic Organic Chemistry II-E2 Basic Organic Chemistry II-E2		Affiliated department, Job title,Name Institute for Chemical Research Senior Lecturer,Amelie Perron	
Group	Natural Sciences		Field(Classification)		Chemistry(Foundations)
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Tue.5		Target year	Mainly 1st & 2nd year students	
[Outline and Purpose of the Course]		This course is intended for Japanese and international students registered in natural science majors who are interested in learning chemistry in English. Basic Organic Chemistry II explains the fundamental concepts behind the reactivity of organic compounds. This course can be taken alone or in combination with Basic Organic Chemistry I.			
[Course Goals]		Students will be able to describe basic organic reaction mechanisms (nucleophilic substitutions, eliminations and electrophilic additions) and apply this knowledge to predict the major product in organic reactions, such as those involving hydrocarbons, alcohols, alkyl halides and alkenes.			
[Course Schedule and Contents]		The semester will be divided as follows: Week 1: General Concepts and Stereoisomerism Week 2: Enantiomers and Optical Activity Week 3: Resonance (Review) Week 4: Chemical Reactivity Week 5: Substitution Reactions (Part 1) Week 6: Substitution Reactions (Part 2) Week 7: Mid-term Exam Week 8: Alkene and Elimination Reactions (Part1) Week 9: Alkene and Elimination Reactions (Part 2) Week 10: Substitution vs. Elimination Week 11: Addition Reactions (Part 1) Week 12: Addition Reactions (Part 2) Week 13: Synthesis Week 14: Review of the Main Concepts Week 15: Final Exam			
[Class requirement]		None			
Continue to Basic Organic Chemistry II-E2(2) ↓ ↓ ↓					

Basic Organic Chemistry II-E2(2)

[Method, Point of view, and Attainment levels of Evaluation]

Evaluation will be based on class attendance and active participation (30%), mid-term exam (30%) and final examination (40%).

[Textbook]

David Klein 『Organic Chemistry』 (Wiley) ISBN:1118452283 (not mandatory)

[Reference book, etc.]

(Reference book)

Handouts will be provided at the beginning of each lecture.

[Regarding studies out of class (preparation and review)]

Students should review the course materials after each class.

[Others (office hour, etc.)]

Teaching Approach:

The new concepts are introduced in a skill-building format with practice problems (in class) and exercises (in class) to help students master the course material (no homework).



Lecture code: N374001

Course numbering		U-LAS13 10012 EE60			
Course title <English>	Fundamental Chemical Experiments-E2		Affiliated department, Job title, Name	Graduate School of Engineering Associate Professor, Juha Lintuluoto	
	Fundamental Chemical Experiments-E2			Graduate School of Engineering Senior Lecturer, ALCANTARA AVILA, Jesus Rafael Graduate School of Human and Environmental Studies 基礎化学実験授業担当教員 Graduate School of Engineering Associate Professor, Cedric Tassel Graduate School of Engineering Senior Lecturer, LANDENBERGER, Kira Beth	
Group	Natural Sciences		Field(Classification)	Chemistry(Foundations)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	2	Class style	Experiment		Course offered year/period 2019 • First semester
Day/period	Wed.3 • 4		Target year	Mainly 1st year students	Eligible students For science students
[Outline and Purpose of the Course]					
The purpose of this laboratory class is to practice the basic identification techniques and synthesis procedures of chemical compounds as well as to understand the underlying principles involved.					
[Course Goals]					
You will get understanding basic chemical concepts by the actual hands-on work performing fundamental analysis of chemical compounds.					
[Course Schedule and Contents]					
[Qualitative Inorganic Analysis Experiments]					
1. Basic Reactions of Fe ³⁺ and Al ³⁺ (3rd Analytical Group).					
2. Basic Reactions of Ag ⁺ , Pb ⁺ , Cu ²⁺ and Bi ³⁺ (1st and 2nd Analytical Groups).					
3. Basic Reactions of Ni ²⁺ , Co ²⁺ , Mn ²⁺ and Zn ²⁺ (4th Analytical Group).					
4. Analysis of an unknown sample containing some cations.					
[Volumetric Analysis Experiments]					
5. Chelatometric Titration: Quantitative Determinations of Ca ²⁺ and Mg ²⁺ in tap water.					
6. Iodometry: Quantitative Determination of NaClO in bleach.					
7. Oxidation Reaction Rate: Measurement of pseudo-first-order reaction rate constant.					
8. Adsorption of Oxalic acid by Activated Carbon.					
[Experiments in Organic Chemistry]					
9. Qualitative Analysis of Organic Compounds.					
10. Structure and Property of Organic Compounds: Azo Dyes and Fluorescent Dyes.					
11. Organic Synthesis I: Acetylation of p-Anisidine.					
12. Organic Synthesis II: Nitration and Hydrolysis.					
----- Continue to Fundamental Chemical Experiments-E2(2) ↓ ↓ ↓					

Fundamental Chemical Experiments-E2(2)	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Mark submitted reports and performance of totally 12 hands-on chemical experiments.	
[Textbook]	
『Fundamental Chemistry Experiments』 (This textbook will be delivered at the class.)	
[Regarding studies out of class (preparation and review)]	
Preparation should be done in advance. Understand principles involved, and summarize these beforehand in the experimental note regarding the reagents, equipment, and procedures and methods to be used.	
[Others (office hour, etc.)]	
<ul style="list-style-type: none"> • For the registration of the class, please see *1 below. • Detailed information of the registration will be given at the homepage “KULASIS” in the beginning of April. • Attend the first class, the course guidance will be given there. • When you decide to take the class, you must have your own safety glasses as well as obtain the insurance for study and research “学生教育研究災害傷害保険”. (Safety glasses can be purchased at the COOP Shop “生協” and the insurance “学生教育研究災害傷害保険” is processed at the Education Promotion and Student Support Department Desk “教育推進・学生支援部”.) 	
*1	
Students must apply for the course before registration if they intend to register for experiment or exercise class of Natural Sciences Group. Please register at the class if you are permitted to participate.	
<ul style="list-style-type: none"> • Application period: 1st semester and 2nd semester / Before the guidance of the first class • Posted: 1st semester / Details will be posted on “Notification” (Academic affairs information on liberal arts and sciences) in KULASIS in early April. 2nd semester / Details will be posted on “Notification” (Academic affairs information on liberal arts and sciences) in KULASIS in mid September. • Application method: 1st semester and 2nd semester / Please bring your student ID card and apply at the venue of the guidance, then attend the subsequent guidance. You cannot correct or cancel the registration on KULASIS. Students not assigned classes are free to choose the day. • Selection method: 1st semester and 2nd semester / If the students who wish to take the class are oversubscribed, a lottery will be held. The results will be announced immediately after the guidance. 	
<ul style="list-style-type: none"> • Notice: Unlike the other class designated courses, students can register “Fundamental Chemical Experiments” course even if it is not the day/period of their class designated course. However, this shall not apply in the case if the class is oversubscribed. 	

Lecture code: N374002

Course numbering		U-LAS13 10012 EE60				
Course title <English>	Fundamental Chemical Experiments-E2		Affiliated department, Job title,Name	Graduate School of Engineering Associate Professor, Juha Lintuluoto		
	Fundamental Chemical Experiments-E2			Graduate School of Engineering Senior Lecturer, ALCANTARA AVILA, Jesus Rafael Graduate School of Human and Environmental Studies 基礎化学実験授業担当教員 Graduate School of Engineering Associate Professor, Cedric Tassel Graduate School of Engineering Senior Lecturer, LANDENBERGER, Kira Beth		
Group	Natural Sciences		Field(Classification)	Chemistry(Foundations)		
Language	English		Old group	Group B	Number of credits	2
Number of weekly time blocks	2	Class style	Experiment		Course offered year/period	2019 • Second semester
Day/period	Wed.3 • 4		Target year	Mainly 1st year students	Eligible students	For science students
[Outline and Purpose of the Course]						
The purpose of this laboratory class is to practice the basic identification techniques and synthesis procedures of chemical compounds as well as to understand the underlying principles involved.						
[Course Goals]						
You will get understanding basic chemical concepts by the actual hands-on work performing fundamental analysis of chemical compounds.						
[Course Schedule and Contents]						
[Qualitative Inorganic Analysis Experiments]						
1. Basic Reactions of Fe ³⁺ and Al ³⁺ (3rd Analytical Group).						
2. Basic Reactions of Ag ⁺ , Pb ⁺ , Cu ²⁺ and Bi ³⁺ (1st and 2nd Analytical Groups).						
3. Basic Reactions of Ni ²⁺ , Co ²⁺ , Mn ²⁺ and Zn ²⁺ (4th Analytical Group).						
4. Analysis of an unknown sample containing some cations.						
[Volumetric Analysis Experiments]						
5. Chelatometric Titration: Quantitative Determinations of Ca ²⁺ and Mg ²⁺ in tap water.						
6. Iodometry: Quantitative Determination of NaClO in bleach.						
7. Oxidation Reaction Rate: Measurement of pseudo-first-order reaction rate constant.						
8. Adsorption of Oxalic acid by Activated Carbon.						
[Experiments in Organic Chemistry]						
9. Qualitative Analysis of Organic Compounds.						
10. Structure and Property of Organic Compounds: Azo Dyes and Fluorescent Dyes.						
11. Organic Synthesis I: Acetylation of p-Anisidine.						
12. Organic Synthesis II: Nitration and Hydrolysis.						
----- Continue to Fundamental Chemical Experiments-E2(2) ↓ ↓ ↓						

Fundamental Chemical Experiments-E2(2)	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Mark submitted reports and performance of totally 12 hands-on chemical experiments.	
[Textbook]	
『Fundamental Chemical Experiments』 (This textbook will be delivered at the class.)	
(Related URL)	
http://www.chem.zenkyo.h.kyoto-u.ac.jp/operation/index_e.html (Video materials for chemical operation.)	
[Regarding studies out of class (preparation and review)]	
Preparation should be done in advance. Understand principles involved, and summarize these beforehand in the experimental note regarding the reagents, equipment, and procedures and methods to be used.	
[Others (office hour, etc.)]	
<ul style="list-style-type: none"> • For the registration of the class, please see *1 below. • Detailed information of the registration will be given at the homepage “KULASIS” in the beginning of April. • Attend the first class, the course guidance will be given there. • When you decide to take the class, you must have your own safety glasses as well as obtain the insurance for study and research “学生教育研究災害傷害保険”. (Safety glasses can be purchased at the COOP Shop “生協” and the insurance “学生教育研究災害傷害保険” is processed at the Education Promotion and Student Support Department Desk “教育推進・学生支援部”.) 	
*1	
Students must apply for the course before registration if they intend to register for experiment or exercise class of Natural Sciences Group. Please register at the class if you are permitted to participate.	
<ul style="list-style-type: none"> • Application period: 1st semester and 2nd semester / Before the guidance of the first class • Posted: 1st semester / Details will be posted on “Notification” (Academic affairs information on liberal arts and sciences) in KULASIS in early April. 2nd semester / Details will be posted on “Notification” (Academic affairs information on liberal arts and sciences) in KULASIS in mid September. • Application method: 1st semester and 2nd semester / Please bring your student ID card and apply at the venue of the guidance, then attend the subsequent guidance. You cannot correct or cancel the registration on KULASIS. Students not assigned classes are free to choose the day. • Selection method: 1st semester and 2nd semester / If the students who wish to take the class are oversubscribed, a lottery will be held. The results will be announced immediately after the guidance. • Notice: Unlike the other class designated courses, students can register “Fundamental Chemical Experiments” course even if it is not the day/period of their class designated course. However, this shall not apply in the case if the class is oversubscribed. 	

Lecture code: N384001

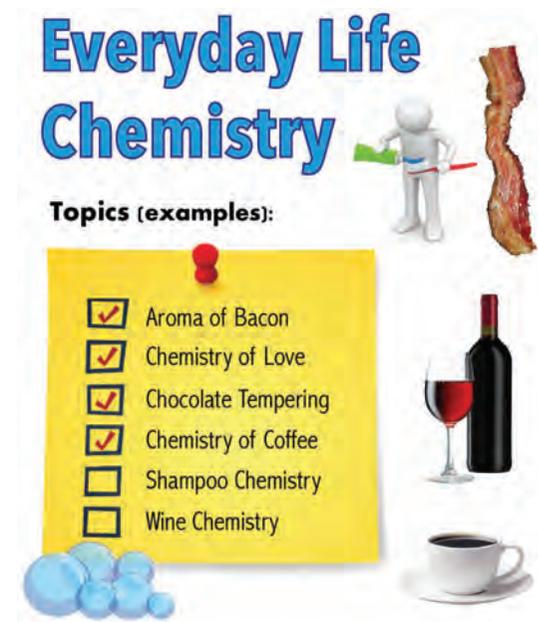
Course numbering					
Course title <English>	Outline of Chemistry I(Its History and Fundamentals)-E2		Affiliated department, Job title,Name	Graduate School of Engineering Senior Lecturer,GAO, Si	
	Outline of Chemistry I(Its History and Fundamentals)-E2				
Group	Natural Sciences		Field(Classification)	Chemistry(Foundations)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Thu.2	Target year	Mainly 1st & 2nd year students		Eligible students For all majors
[Outline and Purpose of the Course]					
All matter in the nature world is composed of one or more substances called elements. Human beings use variety kinds of matter to create materials that can be used for certain purpose. This course intends to give an introduction to the first and second year students on the fundamental elements and matter in the nature world, as well as the man-made materials composed of those elements, such as metals, ceramics and polymers which are quite important to modern society.					
[Course Goals]					
Students are expected to learn the basic knowledge of elements, matter in the nature world. Moreover, they will learn various kinds of materials that can be seen in our daily life and realize how important they are to the modern society.					
[Course Schedule and Contents]					
Week 1: Atom and elements Basic concept of atoms is introduced in this part. Such as atomic number, atomic weight, atomic size, etc. Week 2: Periodical table of the elements In this part we will learn what periodical table is and how to use it to derive relationships between various elements properties. Week 3-12: From elements to matters and materials In this part we will firstly introduce the important elements and the matter composed of them. After that, materials composed of those elements, which are being used in our modern society are to be introduced. For example, iron (Fe) and carbon (C) in steels, aluminum (Al) and magnesium (Mg) in aluminum alloys; copper (Cu) in electrical conductor, Gadolinium (Gd) in magnetic material, Lithium (Li) in battery, Si and semiconductor materials are to be introduced. Oxygen (O) Nitrogen (N) and carbon (C) in ceramics, carbon (C) and hydrogen (H) in polymers will also be introduced. In addition, the relationship between the structure, processing and the properties of the above mentioned materials will to be introduced, which is the core of materials science. Week 13-14: How to identify and analyze the elements and materials? In this part we will introduce the characterization techniques, such as spectroscopy and electron microscopy, by which we can identify the elements or visualize the atoms and microstructures of the materials.					
----- Continue to Outline of Chemistry I(Its History and Fundamentals)-E2(2) ↓ ↓ ↓					

Outline of Chemistry I(Its History and Fundamentals)-E2(2)	

[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Attendance [70%] Short reports [30%]	
[Textbook]	
Not used	
[Reference book, etc.]	
(Reference book) Theodore Gray 『The Elements』 (Encyclopaedia Britannica) ISBN:1615354328	
[Regarding studies out of class (preparation and review)]	
Students are required to read assigned materials (distributed by the teacher) before the class for preparation and write short reports after class for review. The necessary time for those would be around 1.5 hours for each class.	
[Others (office hour, etc.)]	

Lecture code: N362001

Course numbering		U-LAS13 10019 LE60			
Course title <English>		Everyday Life Chemistry-E2 Everyday Life Chemistry-E2		Affiliated department, Job title,Name Institute for Chemical Research Senior Lecturer,Amelie Perron	
Group	Natural Sciences		Field(Classification)	Chemistry(Foundations)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Thu.4		Target year	Mainly 1st & 2nd year students	
[Outline and Purpose of the Course]			This course is intended for Japanese and international students registered in liberal arts or science. It is designed to provide a basic understanding of the chemistry behind daily life.		
[Course Goals]			After this class, you will be able to explain the chemistry behind the aroma of bacon, your morning coffee, why butter is solid, low-calorie foods, trans fats, chocolate crystals, snake venoms, no-tear shampoo and why toothpaste makes your orange juice taste bad.		
[Course Schedule and Contents]			The following topics will be covered:		
			(1) A Day without Chemistry (2) Taste Chemistry and Science of Spiciness (3) Sugar and Artificial Sweeteners (4) What is Fat? (5) How do we Smell? (6) Caffeine and Alcohol (7) Chemistry of the Macaroni Salad (8) Forensic Science and Chemistry (9) Chemistry of Love, Pheromones and Chocolate (10) Chemistry of Pain Killers and Poisons (11) Soap and Shampoo Chemistry (12) Chemistry of Colors (13) Group Presentations (Part I and Part II)		
[Class requirement]			None		
[Method, Point of view, and Attainment levels of Evaluation]			Evaluation will be based on class attendance and active participation (30%), quizzes during classes (50%) and a 10 min group presentation (20%).		
			Continue to Everyday Life Chemistry-E2(2) ↓ ↓ ↓		

Everyday Life Chemistry-E2(2)	
[Textbook]	
Not used	
[Reference book, etc.]	
(Reference book)	
Handouts will be provided to the students at the beginning of each class.	
[Regarding studies out of class (preparation and review)]	
Students should review the course materials after each class. Students will also be asked to prepare a short group presentation at the end of the semester.	
[Others (office hour, etc.)]	
Teaching Approach:	
Short animation videos followed by throughout explanation of key concepts mixed with open discussions with the students based on quizzes and activities.	
 <p>Everyday Life Chemistry</p> <p>Topics (examples):</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Aroma of Bacon <input checked="" type="checkbox"/> Chemistry of Love <input checked="" type="checkbox"/> Chocolate Tempering <input checked="" type="checkbox"/> Chemistry of Coffee <input type="checkbox"/> Shampoo Chemistry <input type="checkbox"/> Wine Chemistry 	

Lecture code: N367001

Course numbering		U-LAS13 10022 LE60			
Course title <English>	Chemistry of Sustainable Energy-E2 Chemistry of Sustainable Energy-E2		Affiliated department, Job title,Name	Institute of Advanced Energy Senior Lecturer,ARIVAZHAGAN RAJENDRAN	
Group	Natural Sciences		Field(Classification)	Chemistry(Foundations)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Mon.3		Target year	All students	Eligible students For science students
[Outline and Purpose of the Course]					
We learn about the basics and application of “sustainable energy” which can provide inexhaustible energy-supply without releasing the greenhouse gases to the atmosphere, from a chemical point of view. The lecture covers the following contents of solar, wind, geothermal, and biomass energies, photo-catalyst and environmental clean-up, and materials for sustainable energy. The aim of this lecture is to acquire the basic knowledge about materials related to renewable energy and also to understand the mechanism of energy conversion.					
[Course Goals]					
The aim of this class is to understand the basic principles of chemistry of sustainable energy.					
[Course Schedule and Contents]					
<ol style="list-style-type: none"> 1. What is sustainable energy? 2. Solar energy: Inorganic solar cells 3. Solar energy: Organic solar cells 4. Solar energy: Dye-sensitized and quantum dot solar cells 5. Wind energy: Types of wind turbines 6. Wind energy: How wind turbines work? 7. Geothermal energy: Direct use of geothermal energy 8. Geothermal energy: Geothermal power generation 9. Biomass energy: Thermochemical conversion 10. Biomass energy: Biochemical conversion 11. Photo-catalyst: Air purification and sterilization 12. Photo-catalyst: Water purification 13. Materials: Structure and thermal insulation 14. Materials: Polymers and sustainable energy 15. Term examination 					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
Results will be evaluated by the submission of homework written in English (30%), attendance and discipline (20%), and assignment (50%).					
----- Continue to Chemistry of Sustainable Energy-E2(2) ↓ ↓ ↓					

Chemistry of Sustainable Energy-E2(2)
[Textbook]

Nancy E. Carpenter 『Chemistry of Sustainable Energy』 (CRC Press) ISBN:978-1-4665-7532-5

[Reference book, etc.]
(Reference book)

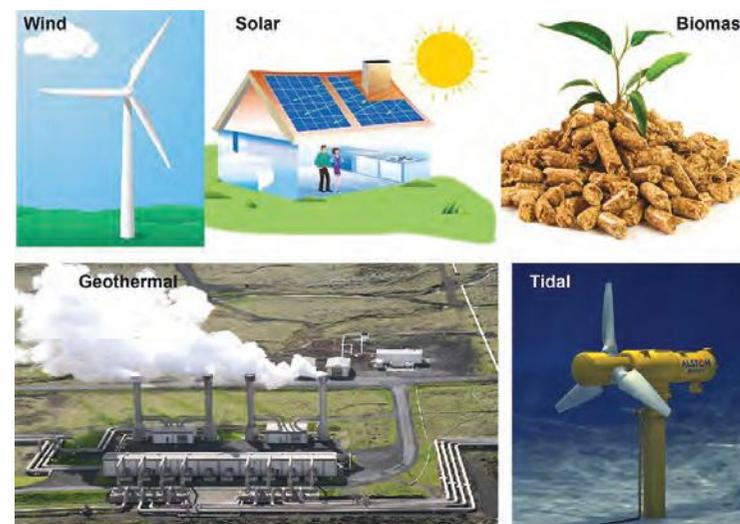
Introduced during class

[Regarding studies out of class (preparation and review)]

I recommend that the students should review the points to be learned.

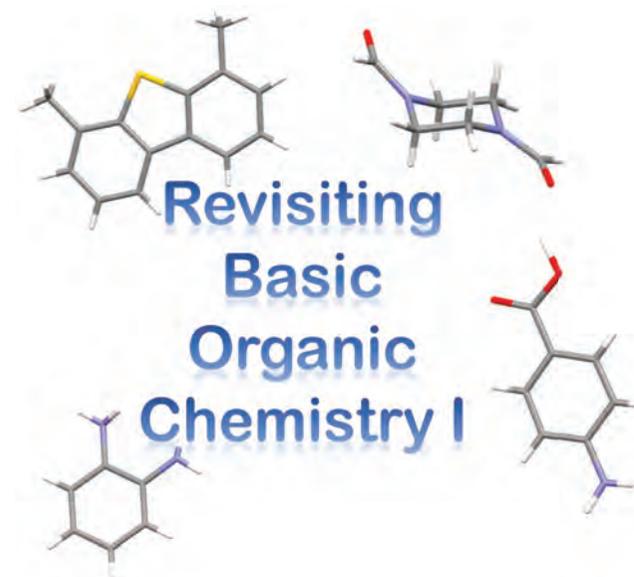
[Others (office hour, etc.)]

Office hours are set at 15:00-17:00 in every Friday.



Lecture code: N377001

Course numbering	U-LAS13 10025 LE60				
Course title <English>	Revisiting Basic Organic Chemistry I-E2		Affiliated department, Job title,Name	Graduate School of Engineering Senior Lecturer,LANDENBERGER, Kira Beth	
Group	Natural Sciences		Field(Classification)	Chemistry(Foundations)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Thu.4	Target year	Mainly 2nd year students	Eligible students	For science students
[Outline and Purpose of the Course]					
This course provides an opportunity for students to revisit material covered in the first semester of basic organic chemistry using English. The two purposes of this course are to ensure that students have a firm foundation in basic organic chemistry and to learn to proficiently apply these concepts in English. This course is beneficial for students who have already taken the first semester of basic organic chemistry or who have an interest in learning organic chemistry in English.					
[Course Goals]					
This course aims to help students have good understanding of basic organic chemistry, particularly in regards to the fundamentals of chemical bonding, acid and base chemistry, stereochemistry, alkanes, alkenes, alkynes and select organic reactions.					
[Course Schedule and Contents]					
The course will cover the following topics: Introduction to Organic Chemistry Structure and Bonding (Chapter 1) Polar Covalent Bonds and Acids and Bases (Chapter 2) Alkanes and Functional Groups (Chapter 3) Conformation and Stereochemistry of Alkanes (Chapter 4) Introduction to Organic Reactions (Chapter 6) Alkenes and Alkynes (Chapter 7)					
Each topic will be covered in approximately 1 to 3 weeks based upon the needs of the class.					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
Class participation and attendance (20%), homework (10%), quizzes (30%), final exam (40%)					
[Textbook]					
John McMurry 『Organic Chemistry with Biological Applications(2nd or 3rd Editions)』 (Cengage Learning) ISBN:9781285842912					
[Regarding studies out of class (preparation and review)]					
Students should complete assigned homework and turn it in at the beginning of class on the due date.					
[Others (office hour, etc.)]					



Lecture code: N378001

Course numbering	U-LAS13 10026 LE60				
Course title <English>	Revisiting Basic Organic Chemistry II-E2		Affiliated department, Job title,Name	Graduate School of Engineering Senior Lecturer,LANDENBERGER, Kira Beth	
Group	Natural Sciences		Field(Classification)	Chemistry(Foundations)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Thu.4	Target year	Mainly 2nd year students	Eligible students	For science students
[Outline and Purpose of the Course]					
This course provides an opportunity for students to revisit material covered in the second semester of basic organic chemistry using English. The two purposes of this course are to ensure that students have a firm foundation in basic organic chemistry and to learn to proficiently apply these concepts in English. This course is beneficial for students who have already taken the second semester of basic organic chemistry or who have an interest in learning organic chemistry in English.					
[Course Goals]					
This course aims to help students have good understanding of basic organic chemistry, particularly in regards to basic organic reactions of alkenes, alkynes, aromatic compounds, alkyl halides, alcohols, phenols and thiols.					
[Course Schedule and Contents]					
The course will cover the following topics: Introduction Stereochemistry (Chapter 5) Reactions of Alkenes and Alkynes (Chapter 8) Aromatic Compounds (Chapter 9) Alkyl Halides: Nucleophilic Substitutions and Eliminations (Chapter 12) Alcohols, Phenols and Thiols (Chapter 13) Each topic will be covered in approximately 1 to 3 weeks based upon the needs of the class.					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
Class attendance and participation (20%), homework (10%), quizzes (30%), final exam (40%)					
[Textbook]					
John McMurry 『Organic Chemistry with Biological Applications (2nd or 3rd Editions)』 (Cengage Learning) ISBN:9781285842912					
[Regarding studies out of class (preparation and review)]					
Students should complete assigned homework and turn it in at the beginning of class on the due date.					
[Others (office hour, etc.)]					

Lecture code: N381001

Course numbering					
Course title <English>	Revisiting Basic Physical Chemistry (thermodynamics)-E2		Affiliated department, Job title, Name	Graduate School of Engineering Senior Lecturer, ALCANTARA AVILA, Jesus Rafael	
	Revisiting Basic Physical Chemistry (thermodynamics)-E2				
Group	Natural Sciences		Field(Classification)	Chemistry(Foundations)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Thu.4		Target year	Mainly 2nd year students	Eligible students For science students
[Outline and Purpose of the Course]					
The objective of the course is to strengthen the knowledge in thermodynamics					
[Course Goals]					
<ul style="list-style-type: none"> ● Understand the basic concepts of physical chemical properties ● Review the first and second law of thermodynamics ● Use thermodynamic laws in physical and chemical changes of substances 					
[Course Schedule and Contents]					
1. Review basic concepts in thermodynamics 2. Perfect and real gases 3. First law of thermodynamics: Work and heat 4. First law of thermodynamics: Internal energy and Enthalpy 5. First law of thermodynamics: physical and chemical changes 6. Second law of thermodynamics 7. Gibbs energy 8. Physical transformations: pure component 9. Physical transformations: mixtures 10. Thermodynamics of chemical reactions 11. Equilibrium constant 12. Proton transfer equilibria 13. Acid-base equilibria 14. Electrochemical equilibria 15. Final Examination					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
The grade will be evaluated as follows: final exam (60%), assignments (6 × 5=30%), attendance and participation (10%)					
[Textbook]					
P. Atkins, J. de Paula 『Elements of Physical Chemistry. 7th edition, 2016』 (Oxford University Press) ISBN:9780198727873 Other editions are acceptable. However, students must be responsible for checking the differences between					
Continue to Revisiting Basic Physical Chemistry (thermodynamics)-E2(2) ↓ ↓ ↓					

Revisiting Basic Physical Chemistry (thermodynamics)-E2(2)
editions.
[Reference book, etc.]
(Reference book) If necessary, the instructor will provide extra material during the class.
[Regarding studies out of class (preparation and review)]
Students are required to study the class contents in advance. It is desired that students check additional study sources (books, internet). The assignments (6 in total) must be submitted on the due date at the class beginning. No late assignment turn-in will be accepted.
[Others (office hour, etc.)]
Instructor: Jesus Rafael Alcantara Avila (e-mail: jrfael@cheme.kyoto-u.ac.jp) Office hour: (Katsura Campus, A4-222, appointment by e-mail)

Lecture code: N382001

Course numbering					
Course title <English>	Revisiting Basic Physical Chemistry (quantum theory)-E2		Affiliated department, Job title, Name	Graduate School of Engineering	
	Revisiting Basic Physical Chemistry (quantum theory)-E2			Senior Lecturer, ALCANTARA AVILA, Jesus Rafael	
Group	Natural Sciences		Field(Classification)	Chemistry(Foundations)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Thu.4	Target year	Mainly 2nd year students	Eligible students	For science students
[Outline and Purpose of the Course]					
The objective of the course is to strengthen the knowledge in quantum theory					
[Course Goals]					
<ul style="list-style-type: none"> ● Understand the basic concepts of quantum theory ● Review the atomic structure of hydrogen and other elements ● Review the chemical bond and its interactions with molecules 					
[Course Schedule and Contents]					
1. Introduction to quantum theory 2. The Schrodinger Equation 3. Quantum theory: translation 4. Quantum theory: rotation 5. Quantum theory: vibration 6. Hydrogen atom 7. Atoms with many electrons 8. Atomic properties 9. Atomic spectroscopy 10. Valence bond theory 11. Homonuclear diatomics 12. Heteronuclear diatomics 13. Polyatomic molecules 14. Molecular interactions 15. Final Examination					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
The grade will be evaluated as follows: final exam (60%), assignments (6 × 5=30%), attendance and participation (10%)					
[Textbook]					
P. Atkins, J. de Paula 『Elements of Physical Chemistry. 7th edition, 2016』 (Oxford University Press) ISBN:9780198727873 Other versions are acceptable. However, students must be responsible for checking the differences between					
Continue to Revisiting Basic Physical Chemistry (quantum theory)-E2(2) ↓ ↓ ↓					

Revisiting Basic Physical Chemistry (quantum theory)-E2(2)
----- editions.
[Reference book, etc.]
(Reference book) If necessary, the instructor will provide extra material during the class.
[Regarding studies out of class (preparation and review)]
Students are required to study the class contents in advance. It is desired that students check additional study sources (books, internet). The assignments (6 in total) must be submitted on the due date at the class beginning. No late assignment turn-in will be accepted.
[Others (office hour, etc.)]
Instructor: Jesus Rafael Alcantara Avila (e-mail: jrrafael@cheme.kyoto-u.ac.jp) Office hour: (Katsura Campus, A4-222, appointment by e-mail)

Lecture code: N373001

Course numbering		U-LAS13 10027 LE60			
Course title <English>	Equilibrium and Energy-E2 :A Macroscopic Perspective of Chemistry		Affiliated department, Job title,Name	Graduate School of Science Program-Specific Associate Professor,THUERMER, Stephan	
	Equilibrium and energy-E2 :A Macroscopic Perspective of Chemistry				
Group	Natural Sciences		Field(Classification)	Chemistry(Foundations)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Mon.3		Target year	Mainly 1st & 2nd year students	Eligible students For science students
[Outline and Purpose of the Course]					
In this lecture you will learn about the fundamental ideas of thermodynamics in an understandable and fun way. If you are going to study natural sciences, especially physics or chemistry, you will come across these ideas again and again. Chemical reactions in nature, industrial processes, and of course all processes in your daily life are dependent on energy. As it turns out, energy comes in many different forms, and its flow and transformation follows fundamental laws, which we want to study in this course.					
[Course Goals]					
Students will gain the following from this lecture: - Interest and fun to learn more about how things work in daily life and technical processes. - An intuitive understanding of thermodynamic laws, which is fundamental to further studies of physics and chemistry. - The ability to understand scientific terminologies and express their own ideas of natural sciences in English.					
[Course Schedule and Contents]					
The course will cover the following topics: 1) The big picture: Introduction to thermodynamic systems and their states, and phases. (3 weeks) We learn how processes in nature are controlled by a few simple properties, like pressure and temperature. 2) It gets hot: Temperature and its scales. (3 weeks) We ask "What is temperature?" and answer this question from various viewpoints. 3) Order and disorder: Phases, the phase diagram, and mixtures. (4 weeks) We discuss the changes substances undergo when varying temperature and pressure. 4) One-way flow: Forms of energy, energy conservation and transformation. (4 weeks) We learn about different forms of energy, laws for energy flow and their application in daily life.					
[Class requirement]					
None					
----- Continue to Equilibrium and Energy-E2 :A Macroscopic Perspective of Chemistry(2) ↓ ↓ ↓					

Equilibrium and Energy-E2 :A Macroscopic Perspective of Chemistry(2)

[Method, Point of view, and Attainment levels of Evaluation]

 Preparing the homework (40%)
 Two short test during the lecture (20%)
 Final examination (40%)

[Textbook]

 Not used
 No textbook is used. Lecture notes will be provided during class.

[Reference book, etc.]

(Reference book)
 Peter Atkins, Julio de Paula 『Physical Chemistry』 (Oxford University Press) ISBN:9780199697403 (Topics from Part 1 - Thermodynamics) Always a good book to have for learning concepts in physical chemistry)
 Peter Atkins 『The Laws of Thermodynamics: A Very Short Introduction』 (Oxford University Press) ISBN:9780199572199 (A short and easy to understand book about general concepts)
 Yunus #199engel, Michael Boles 『Thermodynamics: An engineering approach』 (McGraw-Hill Education) ISBN:9780073398174 (Good for learning about thermodynamics with real-world examples and applications)
 Georg Job, Regina Rueffler 『Physical Chemistry from a Different Angle』 (Springer) ISBN:978-3-319-15666-8 (A good book for getting an intuitive introduction into thermodynamics)

[Regarding studies out of class (preparation and review)]

Students are expected to review the lecture handouts after each class and look up unknown English terms themselves. Homework assignments need to be prepared before the next lecture. It is also encouraged to refer to additional sources of information (books, websites) for the specific topics. If something is unclear or difficult, the instructor can be asked at any time.

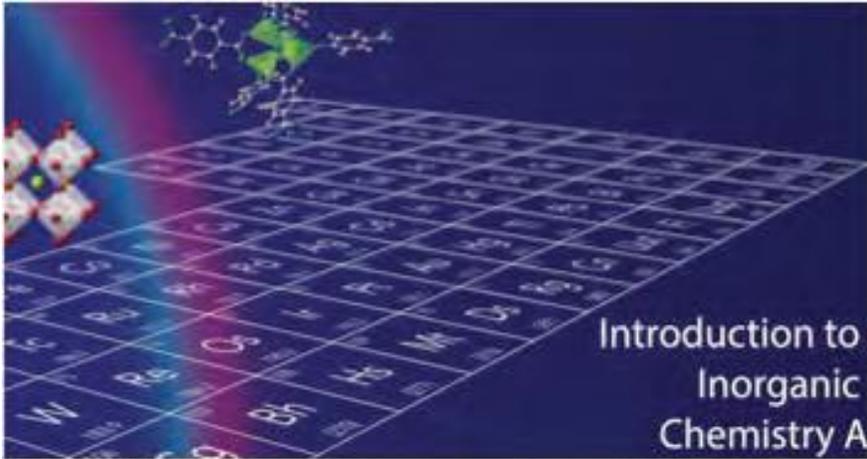
[Others (office hour, etc.)]

The lectures will be held in English, but some supporting material and explanations are also given in Japanese. Students are welcome to ask questions in English or Japanese during and after the class. Office hours are flexible. Appointments can be made directly or via email.



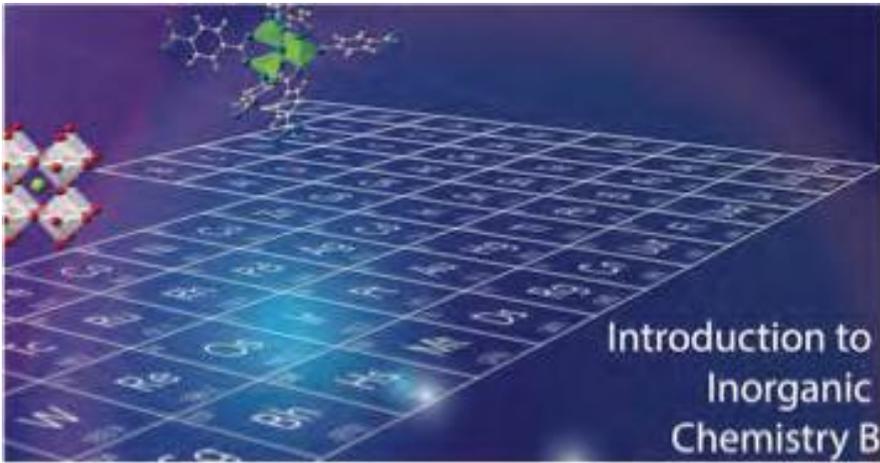
Lecture code: N363001

Course numbering		U-LAS13 20004 LE60			
Course title <English>	Introduction to Inorganic Chemistry A-E2 Introduction to Inorganic Chemistry A-E2		Affiliated department, Job title,Name	Graduate School of Engineering Associate Professor,Cedric Tassel	
Group	Natural Sciences		Field(Classification)	Chemistry(Development)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Tue.3		Target year	Mainly 1st & 2nd year students	Eligible students For science students
[Outline and Purpose of the Course]					
These lectures will introduce students to the fundamentals of inorganic chemistry. Atoms, molecules and solids surround us and this lecture will aim at providing students with the tools to better understand their structures, energetics and properties. This course is designed for both Japanese and International students.					
[Course Goals]					
(1) To understand the basic structure of atoms as a function of their position in the periodic table. (2) To be able to draw simple molecular structures and orbital diagrams to understand their properties and reactivity. (3) To be able to visualize and comprehend the basic crystal structures of solids and their related stability and properties.					
[Course Schedule and Contents]					
The course will cover the following topics, and each of them is read in 1 or 2 weeks					
(1) The structure of hydrogen (2) The structure of many-electron atoms (3) Lewis structures (4) Valence bond theory (5) Molecular orbital theory (6) Bond properties (7) The structure of solids and packing of spheres (8) The structure of metals, alloys and intermetallic compounds (9) Ionic bonding and ionic solids (10) Electronic structures and properties of inorganic solids					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
Evaluation will be based on attendance and participation (10%), homework (40%) and final examination (50%).					
Continue to Introduction to Inorganic Chemistry A-E2(2) ↓ ↓ ↓					

Introduction to Inorganic Chemistry A-E2(2)	
[Textbook]	
Weller, Overton, Rourke, Armstrong 『Inorganic Chemistry』 (Oxford University Press) ISBN:978-0-19-964182-6	
[Reference book, etc.]	
(Reference book) Introduced during class Will be announced during the lecture	
(Related URL) (Will be announced during the lecture)	
[Regarding studies out of class (preparation and review)]	
Students are required to do their homeworks and when trouble is encountered during homework, please consult the various recommended textbooks or please ask me.	
[Others (office hour, etc.)]	
Office hour: Anytime by email and appointments should be made via email.	
	

Lecture code: N364001

Course numbering		U-LAS13 20006 LE60			
Course title <English>	Introduction to Inorganic Chemistry B-E2 Introduction to Inorganic Chemistry B-E2		Affiliated department, Job title,Name	Graduate School of Engineering Associate Professor,Cedric Tassel	
Group	Natural Sciences		Field(Classification)	Chemistry(Development)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Tue.3		Target year	Mainly 1st & 2nd year students	Eligible students For science students
[Outline and Purpose of the Course]					
These lectures will introduce students to the fundamentals of inorganic chemistry. This series of lectures will aim at giving students a basic comprehension of chemical reactions (acid-base and redox) as well as the structure of inorganic substances, their properties and their applications in our daily lives. This course is designed for both Japanese and International students.					
[Course Goals]					
(1) To understand the theories of acid-base and redox reactions. (2) To be able to analyze the symmetry of complex molecules and their related properties. (3) To understand the fundamental theories and their applications.					
[Course Schedule and Contents]					
The course will cover the following topics, and each of them is read in 1 or 2 weeks					
(1) Brønsted acids and bases (2) Lewis acids and bases (3) Oxidation and reduction (4) Representation of potentials and applications (5) Molecular symmetry and coordination compounds (6) Electronic structure of d-metal complexes: crystal-field theory and ligand-field theory (7) Properties of d-metal complexes (8) Introduction to the characterization techniques in inorganic chemistry (9) Material chemistry (10) Catalysis					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
Evaluation will be based on attendance and participation (10%), homework (40%) and final examination (50%).					
----- Continue to Introduction to Inorganic Chemistry B-E2(2) ↓ ↓ ↓					

Introduction to Inorganic Chemistry B-E2(2)	
[Textbook]	
Weller, Overton, Rourke, Armstrong 『Inorganic Chemistry』 (Oxford University Press) ISBN:978-0-19-964182-6	
[Reference book, etc.]	
(Reference book) Introduced during class Will be announced during the lecture	
(Related URL) (Will be announced during the lecture)	
[Regarding studies out of class (preparation and review)]	
Students are required to do their homeworks and when trouble is encountered during homework, please ask me.	
[Others (office hour, etc.)]	
Office hour: Anytime by email and appointments should be made via email.	
	

Lecture code: N361001

Course numbering		U-LAS13 20013 LE60			
Course title <English>		Organic Chemistry of Life-E2 Organic Chemistry of Life-E2		Affiliated department, Job title, Name Institute for Chemical Research Senior Lecturer, Amelie Perron	
Group	Natural Sciences		Field(Classification)	Chemistry(Development)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Thu.4		Target year	Mainly 1st & 2nd year students	Eligible students For science students
[Outline and Purpose of the Course]					
This course is intended for Japanese and international students registered in science majors who are interested in generating their own ideas through creative thinking. It is particularly suited for students interested in pursuing graduate studies in chemistry, life sciences, medicine, pharmaceutical sciences, or agriculture.					
Short video lectures are viewed by students at home before the class session, while in-class time is devoted to activities, brainstorming, or projects.					
[Course Goals]					
This course covers revolutionary ideas from scientists that originated from the integration of chemistry and biology with a main focus on strategies for idea generation.					
By the end of this course, you should be able to come up with your own ideas using various creative thinking strategies.					
[Course Schedule and Contents]					
The following topics will be covered online or in the classroom:					
<ol style="list-style-type: none"> (1) What is a Flipped Classroom? (2) Creating Drug Constellations with Chemical Structures (3) Building of a DNA Double Helix Structure (4) Innovative Applications Derived from DNA/RNA (5) Parallel Thinking with the 6 Thinking Hats Technique (6) Creation of a New Product using the Idea Generator Tool (7) Idea Generation based on Amino Acids and Proteins (8) Ideas for Genetically Modified Organisms (9) Fluorescence for Tracking Biology (10) Ideas for Controlling Biology with Light (11) Combinatorial Chemistry and Chemical Genetics (12) SCAMPER Method for Creating Revolutionizing Ideas (13) Ideas for Fooling Sugars and Fats (14) Creative Ways for Fighting Cancer and Viruses 					
Continue to Organic Chemistry of Life-E2(2) ↓ ↓ ↓					

Organic Chemistry of Life-E2(2)**[Class requirement]**

None

[Method, Point of view, and Attainment levels of Evaluation]

Evaluation is based on attendance and active participation (20%), idea generation (50%), and online problems/exercises (30%).

[Textbook]

Not used

[Reference book, etc.]**(Reference book)**

KyotoUx 001x: "The Chemistry of Life" through edX online education platform

(Related URL)

<https://www.edx.org/course/kyotoux/kyotoux-001x-chemistry-life-858#.VEoBhk102xA>

[Regarding studies out of class (preparation and review)]

Students have to watch online lectures on the Internet (about 30 minutes per week) before attending the classes. Online lectures can be watched at any time during the week. Classroom activities will be based on the content of the online lectures.

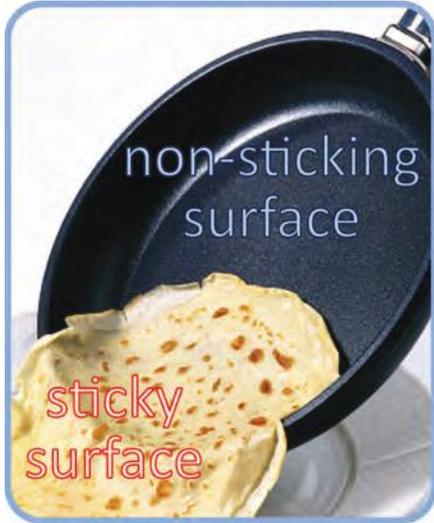
[Others (office hour, etc.)]

Chemistry of Life edX Idea Generation



Lecture code: N372001

Course numbering		U-LAS13 20014 LE60			
Course title <English>	Introduction to Surface Chemistry-E2 Introduction to surface chemistry-E2		Affiliated department, Job title,Name	Graduate School of Science Program-Specific Associate Professor,THUERMER, Stephan	
Group	Natural Sciences		Field(Classification)	Chemistry(Development)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Mon.3		Target year	Mainly 2nd year students	Eligible students For science students
[Outline and Purpose of the Course]					
In this lecture we will learn about surface processes, which is an important topic in physics, chemistry and engineering. Surfaces are much more important than you would think: Rusting of metals (corrosion), sticking of your shoes or glue (adhesion and friction), washing your hands (surfactants), colorful paints (coatings) are all phenomena happening at some surface. In this course, we will learn how the special properties of surfaces makes all this possible and how chemists in science and industry try to control these properties.					
[Course Goals]					
Students will gain the following from this lecture: - Interest and fun to learn more about how things work in daily life - An understanding of basic concepts of surface physics and surface chemistry - The ability to connect knowledge to observed natural phenomena and industrial applications - The ability to understand scientific terminologies and express their own ideas of natural sciences in English.					
[Course Schedule and Contents]					
The course will cover the following topics, each in a 2-3 week time span: 1) A cut through everything: We will learn what surfaces and interfaces are, their properties and their importance for our daily life. 2) Sticking together: We introduce surface energy and see how this leads to sticking and water repelling behavior. 3) How not to slip: We learn about surface structure, and get an understanding of how friction between surfaces works. 4) Gear breakdown: We get to know how friction leads to damage and how friction can be reduced. 5) Fogging up of glasses: We discuss about adsorption of atoms and molecules on surfaces. 6) Exhaust transformation: Chemical reactions on surfaces and catalysis will be discussed. 7) Sticky gas: Finally, we see how adsorption of gas can be measured and how this is used practically.					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
Preparing the homework (40%) Two short test during the lecture (20%)					
Continue to Introduction to Surface Chemistry-E2(2) ↓ ↓ ↓					

Introduction to Surface Chemistry-E2(2)	
Final examination (40%)	
[Textbook]	
Not used No textbook is used. Some handouts will be provided during class.	
[Reference book, etc.]	
(Reference book) Hans-Juergen Butt, Karlheinz Graf, Michael Kappel 『Physics and Chemistry of Interfaces』 (Wiley-VCH) ISBN:9783527412167 (This book covers all topics of this course and much more) Drew Myers 『Surfaces, Interfaces, and Colloids: Principles and Applications, 2nd Edition』 (Wiley-VCH) ISBN:9780471330608 (Covers most topics about surfaces and interfaces, be it solid, liquid or other surfaces)	
Elaine M. McCash 『Surface Chemistry』 (Oxford University Press) ISBN:9780198503286 (Introductory text about solid surfaces)	
[Regarding studies out of class (preparation and review)]	
Students are expected to review the lecture handouts after each class and look up unknown English terms themselves. Homework assignments need to be prepared before the next lecture. It is also encouraged to refer to additional sources of information (books, websites) for the specific topics. If something is unclear or difficult, the instructor can be asked at any time.	
[Others (office hour, etc.)]	
The lectures will be held in English, but some supporting material and explanations are also given in Japanese. Students are welcome to ask questions in English or Japanese during and after the class. Office hours are flexible. Appointments can be made directly or via email.	
	

Lecture code: N383001

Course numbering					
Course title <English>	Chemistry in Solar Energy Conversion-E2 Chemistry in Solar Energy Conversion-E2		Affiliated department, Job title,Name	Graduate School of Engineering Senior Lecturer,PARK, Jaehong	
Group	Natural Sciences		Field(Classification)	Chemistry(Development)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Tue.4		Target year	Mainly 1st & 2nd year students	Eligible students For science students
[Outline and Purpose of the Course]					
<p>With the industrial and technological development, the demand of human beings for more energy rising quickly. People have begun to search next generation energy-sources to preserve the nature and to cope with the fossil-fuel depletion.</p> <p>Solar energy is one of important alternative energy source, and solar energy conversion became a big topic of people's interest.</p> <p>As an elementary level, we will learn the current knowledge of solar energy conversion process, current available techniques, and future possibilities in terms of science, technology, and industry.</p>					
[Course Goals]					
In this course, we aim to learn basic chemical and physical principles, terminology, issues relevant to solar energy conversion. In addition, we expect to understand the current problems and research opportunities in this topic.					
[Course Schedule and Contents]					
Contents will be discussed in the class. (The number does not mean the number of classes) The course schedule is subject to change, depending on the student's understanding.					
<ol style="list-style-type: none"> 1. Global energy problem and overview of solar energy conversion 2. Light, black-body radiation, photon, Solar spectrum 3. Light absorption 4. Electrons and holes in semiconductors 5. Fermi energy, electrochemical potential, work function 6. Charge generation and recombination 7. Radiative and nonradiative electron/hole recombination 8. Electron/hole transport, diffusion and drift 9. Basic solar cell operation mechanisms 10. PN-junction, heterojunction, maximum efficiency of solar cells 11. Organic/inorganic solar cells 12. Solar fuels, tandem cells 13. Thermophotovoltaics 14. Up/down conversion of photons 15. Spectroscopic approach on solar energy conversion 					
----- Continue to Chemistry in Solar Energy Conversion-E2(2) ↓ ↓ ↓					

Chemistry in Solar Energy Conversion-E2(2)	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Final term project (50%), 4 small tasks (40%; quiz, report, homework), attendance and class participation (10%)	
[Textbook]	
Not used	
[Reference book, etc.]	
<p>(Reference book)</p> <p>Arno H. M. Smets, Klaus Jager, Olindo Isabella, Rene Van Swaaij, Miro Zeman 『Solar Energy : The Physics and Engineering of Photovoltaic Conversion, Technologies and Systems』 (Uit Cambridge Ltd) ISBN:9781906860325</p>	
[Regarding studies out of class (preparation and review)]	
Students are responsible for reviewing each class and preview.	
[Others (office hour, etc.)]	
Instructor: Jaehong Park (email: j.park@moleng.kyoto-u.ac.jp)	
Course meeting: (Yoshida South campus, TBD), 1 session/week, 90 mins/session	
Office hour:	
Option 1- At Katsura campus(A4-205), any date could be possible, but appointment by email.	
Option 2- At Yoshida campus, on Tuesday appointment by email.	

Lecture code: N380001

Course numbering		U-LAS13 20016 LE60			
Course title <English>	Chemical Kinetics and Molecular Reaction Dynamics-E2		Affiliated department, Job title, Name	Graduate School of Engineering Senior Lecturer, PARK, Jaehong	
	Chemical Kinetics and Molecular Reaction Dynamics-E2				
Group	Natural Sciences		Field(Classification)	Chemistry(Development)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Thu.4		Target year	Mainly 1st & 2nd year students	Eligible students For science students
[Outline and Purpose of the Course]					
Chemical kinetics and molecular reaction dynamics is a fundamental and important subject in chemistry as chemical reaction is an event that most chemical species experience and nature utilize at every moment. In this course, we will discuss the basic principles of chemical reaction kinetics in an introductory level. Both experimental and theoretical aspects of chemical reaction kinetics will be covered. Various experimental techniques to study this subject will be also introduced. In this elementary course, we will focus more on the simple gas phase and liquid phase reactions which are relevant industrial applications.					
[Course Goals]					
This course aims to develop both a conceptual and a quantitative understanding of the chemical reaction kinetics. We will explore the quantitative description of reaction rates and mechanisms. We will also learn the features of chemical reactions in a liquid phase.					
[Course Schedule and Contents]					
Contents will be discussed in the class. (The number does not mean the number of classes) The course schedule is subject to change, depending on the student's understanding.					
<ol style="list-style-type: none"> 1. Gas, ideal gas, real gas 2. Kinetic theory of gases 3. Molecular collisions 4. Reaction rates, theoretical aspects of reaction kinetics 5. Experimental aspects of reaction kinetics 6. Experimental techniques 7. Chain reactions, polymerization kinetics, homogeneous catalysis 8. Collision theory, diffusion-controlled reactions, transition-state theory 9. Photochemistry 					
[Class requirement]					
None					
----- Continue to Chemical Kinetics and Molecular Reaction Dynamics-E2(2) ↓ ↓ ↓					

Chemical Kinetics and Molecular Reaction Dynamics-E2(2)	
[Method, Point of view, and Attainment levels of Evaluation]	
Final exam (50%), small tasks (40%; quiz, report, homework, presentation), attendance and class participation (10%)	
[Textbook]	
Not used	
[Reference book, etc.]	
(Reference book) D. W. Oxtoby and H. P. Gillis 『Principles of Modern Chemistry』 ISBN:978-1305079113 (Optional, other elementary-level chemistry books are OK.) P. Atkins and J. de Paula 『Physical Chemistry, 9th ed.』 (Oxford University Press) ISBN:9780199697403	
[Regarding studies out of class (preparation and review)]	
Basic mathematical knowledge such vector, integration, and differentiation is necessary, but most of them will be introduced in the class or in supplementary materials, or office-hours. Students are responsible for reviewing each class and preview.	
[Others (office hour, etc.)]	
Instructor: Jaehong Park (email: j.park@moleng.kyoto-u.ac.jp)	
Course meeting: (Yoshida South campus, TBD), 1 session/week, 90 mins/session	
Office hour:	
Option 1- At Katsura campus(A4-205), any date could be possible, but appointment by email.	
Option 2- At Yoshida campus, on Thursday appointment by email.	

Lecture code: N923001

Course numbering					
Course title <English>	Fundamentals of Cell and Molecular Biology-E2		Affiliated department, Job title,Name	Graduate School of Science Associate Professor,TAKENAKA, Mizuki	
	Fundamentals of Cell and Molecular Biology-E2				
Group	Natural Sciences		Field(Classification)	Biology(Introduction)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Fri.2		Target year	Mainly 1st & 2nd year students	Eligible students For all majors
[Outline and Purpose of the Course]					
The purpose of this course is to provide fundamentals of current biology, in particular focused on micro-level biology below the cell level with an "Essential cell biology", which is a university level standard textbook. Students will learn the functions of characteristic molecules of life such as DNA, RNA and proteins in the cell. Furthermore, how structural features of these molecules contribute their respective functions will be discussed. This course will also cover the relevance between the functions of these biological molecules and various life phenomena at the cell or individual organism level.					
[Course Goals]					
This course will provide a fundamental understanding of molecular and cell biology. Students will be able to explain how the cell is organized and how it functions in English.					
[Course Schedule and Contents]					
<ol style="list-style-type: none"> 1. Cells: The Fundamental Units of Life 2. Chemical Components of Cells 3. Protein Structure and Function 4. DNA Replication, Repair, and Recombination 5. From DNA to Protein: How Cells Read the Genome 6. How Genes and Genomes Evolve 7. Membrane Structure 8. Transport Across Cell Membranes 9. Energy Generation in Mitochondria and Chloroplasts 10. Intracellular Compartments and Protein Transport 11. Cell Signaling and Cytoskeleton 12. The Cell Division Cycle 13. Sexual Reproduction and the Power of Genetics 14. Cellular Communities: Tissues, Stem Cells, and Cancer 					
[Class requirement]					
This course is open to all students, but a basic knowledge on biology is recommended.					
----- Continue to Fundamentals of Cell and Molecular Biology-E2(2) ↓ ↓ ↓					

Fundamentals of Cell and Molecular Biology-E2(2)	
[Method, Point of view, and Attainment levels of Evaluation]	
Class attendance and active participation (15%), weekly small tests (15%) an oral exam (20%)and a final written exam (50%)	
[Textbook]	
Alberts Bray et. al. 『Essential Cell Biology』 (Garland Science) ISBN:9780815344554 Summary of the lecture contents will be provided at the class.	
[Regarding studies out of class (preparation and review)]	
Reading the textbook before the lecture will help the students to understand the lecture. Students should review the textbook after the lecture and answer the questions provided.	
[Others (office hour, etc.)]	
Contact: mizuki.takenaka@pmg.bot.kyoto-u.ac.jp Any questions and requests are welcome by prior arrangements via E-mail.	

Lecture code: N924001

Course numbering					
Course title <English>	Introduction to Plant Science-E2 Introduction to Plant Science-E2		Affiliated department, Job title,Name	Graduate School of Science Associate Professor,TAKENAKA, Mizuki	
Group	Natural Sciences		Field(Classification)	Biology(Introduction)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Fri.2		Target year	Mainly 1st & 2nd year students	Eligible students For all majors
[Outline and Purpose of the Course]					
In this lecture series, the basics of the survival strategy of plants will be learned at the cellular and molecular level. Despite that the achievement of plant science are very frequently described in high school textbooks, university students have very few opportunities to study them unless they specifically learn plant physiology. In this classes, the contents of plant science, which are mentioned only widely and shallowly at high school level will be provided more deeply with the latest knowledge.					
[Course Goals]					
To understand the fundamentals of plant physiology To understand how plants use light-energy. To understand the signal transduction in plants. To understand the basics of plant development and reproduction					
[Course Schedule and Contents]					
1)Plant and cell architecture 2)Genome structure and gene expression 3)Water in plants 4)Mineral Nutrition 5)Photosynthesis 6)Cel wall 7)Signal transduction 8)Embryogenesis 9)Seed dormancy germination and seedling 10)Vegetative growth and organogenesis 11)Flower controlling, 12)Gametophytes pollination , seeds, and fruits 13)Plant senescence and cell death 14)Biotic and Abiotic interaction					
[Class requirement]					
This course is open to all students, but a basic knowledge on biology is recommended.					
----- Continue to Introduction to Plant Science-E2(2) ↓ ↓ ↓					

Introduction to Plant Science-E2(2)
[Method, Point of view, and Attainment levels of Evaluation]
Class attendance and active participation (15%), weekly small tests (15%) an oral exam (20%) and a final written exam (50%)
[Textbook]
Lincoln Taiz et al. 『Plant Physiology and Development, Sixth Edition』 (Sinauer) ISBN:9781605353531
[Reference book, etc.]
(Reference book) Summary of the lecture contents will be provided at the class.
[Regarding studies out of class (preparation and review)]
Reading the textbook before the lecture will help the students to understand the lecture. Students should review the textbook after the lecture.
[Others (office hour, etc.)]
Contact: mizuki.takenaka@pmg.bot.kyoto-u.ac.jp Any questions and requests are welcome by prior arrangements via E-mail.

Lecture code: N497001

Course numbering		U-LAS14 20020 LE68			
Course title <English>	Comparative Cognition-E2 Comparative Cognition-E2		Affiliated department, Job title,Name	Primate Research Institute Associate Professor,Andrew MacIntosh	
Group	Natural Sciences		Field(Classification)	Biology(Issues)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Mon.4		Target year	All students	Eligible students For science students
[Outline and Purpose of the Course]					
Comparative cognition offers a ride through the mental capacities of animals as simple as the humble bumblebee and as complex as our own closest relative, the chimpanzee. In our quest to understand the origins of the human mind, we cannot forget that like all organisms on earth, we are but a small part of the great evolutionary tree of life. In this course, students learn about animal cognition through the lens of behavior, ecology and evolution. Students learn about how and why animals use cognition to help them navigate their physical and social worlds, and how and why they learn and remember things about their environments. The course has a strong emphasis on evolutionary theory, as well as the cognitive experiments that have allowed scientists to discover what we now know about the animal mind.					
[Course Goals]					
In this course, students will learn to: - apply the scientific method to questions about intelligence and cognition to distinguish evidence-based statements about what animals are thinking from mere anthropomorphic descriptions or 'just-so' stories - appreciate that human cognition - what and how we think and behave - is the product of a long evolutionary process that has acted in parallel on other species - understand that cognition has both general (connected) and modular components, that there may be no such thing as a general intelligence, and that even the smallest of animals can surprise you with how they store and use information to solve problems that are important to them					
[Course Schedule and Contents]					
This course will be conducted in 5 parts, as described below. In principle, each topic within each part reflects one class, but the order and spacing of topics may be moved depending on the flow of the course or the occurrence of specific events related to the course material.					
*Note that there will be a midterm exam held during the 7th week of class. Details will be announced in advance during class.					
Part 1 - the science of comparative cognition 1. introducing cognition, evolution and behavior 2. the evolution of the animal brain 3. evolutionary and ecological pressures driving cognition					
Part 2 - basic cognitive processes 4. sensing, perceiving and attending to the world 5-6. connecting the dots through learning & memory					
Continue to Comparative Cognition-E2(2) ↓ ↓ ↓					

Comparative Cognition-E2(2)

Part 3 - finding our way in the physical world 7. spatial cognition 8. telling time & counting 9. foraging, planning & using tools
Part 4 - finding our way in the social world 10. communication & language 11. social cognition and social competence 12. social learning
Part 5 - putting it all together 13. cognition, ethics & animal rights
[Class requirement]
None
[Method, Point of view, and Attainment levels of Evaluation]
attendance and class participation - 10% term report - 10% mid-term exam - 40% final exam - 40%
[Textbook]
Sara J. Shettleworth, Paul Bloom, and Lynn Nadel 『Fundamentals in comparative cognition (2012)』 (Oxford University Press) ISBN:978-0-19-534310-6 (The textbook may not be available at the university bookstore, but can be purchased from Amazon Japan or other third party online retailers, or directly from the publishers website)
[Regarding studies out of class (preparation and review)]
Students should read the relevant sections of the textbook before classes to enhance participation and understanding. The instructor will inform students which sections of the book to read for the following week. The mid-term and final examinations will be based upon both lecture material and items covered in the textbook.
[Others (office hour, etc.)]
There are no scheduled office hours for this course, but the instructor is happy to receive emails at any time and meet with students before or after class by appointment.
Students are strongly encouraged to participate in class discussion and ask a lot of questions!


Lecture code: N496001

Course numbering		U-LAS14 20021 LE68					
Course title <English>	Conservation Biology-E2 Conservation Biology-E2			Affiliated department, Job title,Name	Primate Research Institute Associate Professor,Andrew MacIntosh		
Group	Natural Sciences		Field(Classification)	Biology(Issues)			
Language	English		Old group	Group B	Number of credits	2	
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period	2019 • First semester	
Day/period	Mon.5		Target year	All students		Eligible students	For science students
[Outline and Purpose of the Course]							
With the onrushing of human development at the expense of the Earth's natural resources, we have now entered a new geological epoch: the 'Anthropocene'. The human footprint on the Earth has never been greater and it is said that the world's biodiversity is now in the midst of the 'sixth extinction'. This is where the relatively new science of conservation biology comes in. In this course, students learn about threats to biodiversity, loss of ecosystem services, extinction, and the importance of conserving nature, from individual species to entire ecosystems.							
[Course Goals]							
In this course, students will learn to: - assess how human activities contribute to biodiversity loss and what can be done to prevent it - weigh the costs and benefits of exploiting natural resources while considering social, economic, political and ecological factors simultaneously - appreciate the importance of nature and natural reserves to human health and well-being - engage in conservation activities and design 'conservation strategies' to reduce their own footprints on planet Earth							
[Course Schedule and Contents]							
This course will be conducted in 4 parts, as described below. In principle, each topic within each part reflects one class, but the order and spacing of topics may be moved depending on the flow of the course or the occurrence of specific events related to the course material.							
*Note that there will be a midterm exam held during the 8th week of class. Details will be announced in advance during class.							
**Note also that students are expected to find and discuss a conservation-related news story each week to supplement in-class material.							
Part 1 - introducing conservation biology 1. a brief overview of the field of conservation biology 2. biodiversity: how it is measured and why it matters 3. the biodiversity crisis and biological extinctions							
Part 2 - threats to biodiversity 4. habitat loss, degradation and fragmentation 5. over-harvesting and human use of natural products 6. <u>invasive species</u>							
Continue to Conservation Biology-E2(2) ↓ ↓ ↓							

Conservation Biology-E2(2)

- 7. climate change
- 8. infectious disease



- Part 3 - conservation strategies and action
- 9. endangered species protection
- 10. protected and unprotected conservation areas
- 11. sustainable development
- 12. public outreach and education

- Part 4 - the conservation biologist in you
- 13. student presentations of conservation biology term project

***during this course, students will design a project related to any area of conservation biology, which will be submitted and presented during the final class of the year. Some class time each week will be devoted to discussion of project progress.

[Class requirement]

None

[Method, Point of view, and Attainment levels of Evaluation]

attendance and class participation - 10%
student projects - 30%
mid-term - 30%
final exam - 30%

[Textbook]

Richard B. Primack and Anna A. Sher 『An Introduction to Conservation Biology』 (Sinauer Associates, Inc. Publishers, 2016) ISBN:9781605354736 (should be available online at Amazon (or other online book retailer) or directly from publisher's website. Consult with University Co-op for other options)

[Regarding studies out of class (preparation and review)]

Students should read the relevant sections of the textbook before classes to enhance participation and understanding. The instructor will inform students which sections of the book to read for the following week. Also, students must also find at least one conservation-related news item each week during the course to stay up-to-date with current events. Each lecture will include time for student discussion related to these news items. The mid-term and final examinations will be based upon both lecture material and items covered in the textbook. Finally, a term project requires students to develop and complete a project related to any area of conservation biology. Topics and progress will be discussed with the instructor on an ongoing basis throughout the course.

[Others (office hour, etc.)]

This course has no scheduled office hours, but the instructor is happy to receive emails and meet either before or after class by appointment.

Students are strongly encouraged to participate in class discussion, ask a lot of questions, and get involved in conservation activities near you!

Lecture code: N498001

Course numbering		U-LAS14 20022 LE68			
Course title <English>	Animal Behavior-E2 Animal Behavior-E2		Affiliated department, Job title,Name	Primate Research Institute Associate Professor,Andrew MacIntosh	
Group	Natural Sciences		Field(Classification)	Biology(Issues)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Mon.4		Target year	All students	Eligible students For science students
[Outline and Purpose of the Course]					
Why do animals do as they do? Why do we humans do as we do? This course is aimed at answering these questions from the perspective of Darwinian evolution. Using 'Tinbergen's 4 questions', this course leads students to discover what lies at the root of the diversity of animal behavior that we observe today, how we study the mechanisms and functions of behavior, and why studying animals has a lot to teach us about the evolution of behavior in humans.					
[Course Goals]					
In this course, students will learn to: - apply the scientific method to questions about animal behavior and avoid applying humanistic (anthropomorphic) explanations for what they observe - understand comparative data and use it to better answer specific questions about the natural world - understand that animal (including human) behavior, like all products of biology, is shaped by evolution					
[Course Schedule and Contents]					
This course will follow the schedule as follows. In principle, each topic within each part reflects one class, but the order and spacing of topics may be moved depending on the flow of the course or the occurrence of specific events related to the course material.					
*Note that there will be a midterm exam held during the 8th week of class. Details will be announced in advance during class.					
<ol style="list-style-type: none"> 1. introducing animal behavior 2. understanding animal behavior through 4 questions 3. the 'who, what, when, where and why' of behavior 5.'nature via nurture' - behavioral genetics 6. animal learning 7. animal cognition 8. midterm exam 9. communication and signaling 10. 'where are we going?' - movement & navigation 11. 'eat or be eaten' - foraging & self-defense 12. sex & mating systems 13. parental investment 14. social behavior & social systems 					
**Note also that the course includes a practical field course held at Arashiyama's Iwatayama Monkey Park.					
Continue to Animal Behavior-E2(2) ↓ ↓ ↓					

Animal Behavior-E2(2)
Students will be able to apply what they learn in the course and get some practice observing animals and collecting scientific data.
[Class requirement]
None
[Method, Point of view, and Attainment levels of Evaluation]
Attendance and class participation - 10% Mid-term exam - 40% Term Report - 10% Final Exam - 40%
[Textbook]
Michael D. Breed and Janice Moore (2016) 『Animal Behavior, 2nd Edition』 (Elsevier) ISBN:978-0128015322 (can be ordered via the University Coop, Amazon Japan and the publisher's website)
[Reference book, etc.]
(Reference book) students are provided with information to access any additional readings related to course material
[Regarding studies out of class (preparation and review)]
Students should keep up with readings in the textbook each week, preferably before class so they can actively participate in class discussion. Details about the exams and term report will be provided well in advance for students to make the appropriate preparations.
[Others (office hour, etc.)]
This course has no scheduled office hours, but the instructor is happy to receive emails and meet either before or after class by appointment.
In addition to the weekly lectures, this course includes a field practicum at Arashiyama (Iwatayama) Monkey Park where students will learn to study and identify animal behavior. Details, including dates and content, will be discussed with students in class. Students should ensure they have the necessary insurance.
Students are strongly encouraged to participate in class discussion and ask a lot of questions!

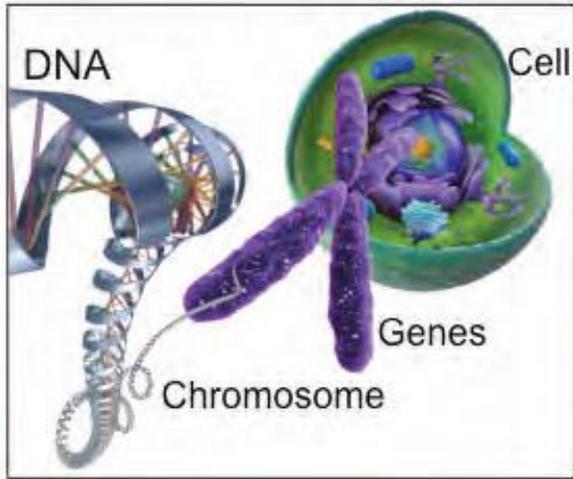

Lecture code: N499001

Course numbering		U-LAS14 20023 LE68			
Course title <English>	Zoo Biology-E2 Zoo Biology-E2		Affiliated department, Job title,Name	Primate Research Institute Associate Professor,Andrew MacIntosh	
Group	Natural Sciences		Field(Classification)	Biology(Issues)	
Language	English		Old group	Group B	Number of credits 2
Hours	30	Class style	Lecture		Course offered year/period 2019 • Intensive, Second semester
Day/period	Intensive November 30- December 1	Target year	All students		Eligible students For science students
[Outline and Purpose of the Course]					
Zoos and aquariums are a window into nature and the exotic lives of animals. Everyone has been to a zoo and wondered at the animals on display, but what are zoos really about? What goes on behind the scenes? What role does a modern zoo play in our society, and how has this changed throughout history? This course is designed to answer just these questions. Along the way, you'll learn about the modern missions of zoos, animal behavior and welfare, public outreach and education, and especially the conservation of endangered species.					
[Course Goals]					
In this course, students will learn to: - appreciate and understand the role of zoos in modern society - think critically about issues concerning zoos and aquariums and balance the costs and benefits of keeping animals in captivity, particularly as they relate to conservation of endangered species - assess the 'quality of life' of the animals they encounter at zoos and aquariums, and appreciate the diverse set of animal care and welfare challenges facing these institutions					
[Course Schedule and Contents]					
This is an intensive lecture tentatively scheduled for November 30 and December 1, 2019, with a one-day practical course held at Kyoto City Zoo on a subsequent weekend in December (exact date to be determined).					
The course is organized into the following units: 1. history, philosophy and the modern missions of zoos 2. science at the zoo: basic research, biodiversity conservation, and environmental education 3. zoo ethics: animal behavior, welfare, enrichment and animal rights 4. zoo practical course: students					
[Class requirement]					
None					
----- Continue to Zoo Biology-E2(2) ↓ ↓ ↓					

Zoo Biology-E2(2)
[Method, Point of view, and Attainment levels of Evaluation]
attendance and class participation - 50% course wrap-up quiz - 25% course report - 25%
[Textbook]
Instructed during class
[Reference book, etc.]
(Reference book) Paul A. Rees 『An introduction to zoo biology and management』 (Wiley-Blackwell) John E. Fa, Stephan M. Funk, Donnamarie O'Connell 『Zoo Conservation Biology』 (Cambridge University Press) Geoff Hosey 『Zoo animals: behaviour, management, and welfare』 (Oxford University Press) Alexandra Zimmermann, Matthew Hatchwell, Lesley A. Dickie, Chris West 『Zoos in the 21st Century: Catalysts for Conservation?』 (Cambridge University Press) While there is no required textbook for this course, students are encouraged to sample from the reference materials listed, which form the basis for the lectures in the course
[Regarding studies out of class (preparation and review)]
the instructor will provide instructions for how to prepare for this course once students have registered. There will be a small amount of preparatory reading to encourage students to engage with the course material.
[Others (office hour, etc.)]
This course has a 25-student maximum registration limit to facilitate group discussion and exercises during the zoo practicum. This course includes a mandatory 1 day practicum conducted at Kyoto City Zoo, in addition to the two day intensive lectures at the main campus. Students must be able to cover their own zoo admission fees and transportation to the site, and should ensure they have the necessary insurance.
Students are strongly encouraged to participate in class discussion and ask a lot of questions!


Lecture code: N492001

Course numbering		U-LAS14 20029 LE68			
Course title <English>		Principles of Genetics-E2 Principles of Genetics-E2		Affiliated department, Job title,Name Graduate School of Medicine Professor,Shohab YOUSSEFIAN	
Group	Natural Sciences		Field(Classification)		Biology(Issues)
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Tue.2		Target year	Mainly 1st & 2nd year students	
[Outline and Purpose of the Course]					
Genetics is the science of heredity that seeks to explain variation between related organisms. All aspects of life are affected by the expression of genes. As our understanding of the genome increases, it is expected that the application of classical and molecular genetic information will become an indispensable tool in the development of microbial, plant, animal and medical studies. The course will begin by considering the basic concepts of inheritance, i.e. how Mendelian traits are passed to the next generation, will then outline our current understanding of chromosomes, DNA and genes and their regulation, and will finally examine how such genes can affect developmental programmes, cancer and behavior of organisms.					
[Course Goals]					
To acquire a basic understanding of the principles of classical and molecular genetics and their relevance and application to modern biological sciences					
[Course Schedule and Contents]					
Main Topics: <ol style="list-style-type: none"> 1. Development of modern genetics 2. Cells and cell division 3. Mendelian inheritance 4. Extensions of Mendelian genetics 5. Chromosomes and chromosome aberrations 6. Genomes, DNA structure and replication 7. Gene expression and regulation 8. DNA mutations and repair 9. Techniques in molecular genetics and genomics 10. Cancer genetics 11. Developmental genetics 12. Behavioral, population and evolutionary genetics 13. Special topics in modern genetics 14. Applications of molecular genetics in microbiology, agriculture and medicine 15. Final Exam 16. Feedback 					
----- Continue to Principles of Genetics-E2(2) ↓ ↓ ↓					

Principles of Genetics-E2(2)	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Evaluation will be based on class attendance and active participation (~20 %), mid-course tests (~30 %) and a final examination (~50 %)	
[Textbook]	
Klug, Cummings, Spencer, Palladino 『Concepts of Genetics 10th Edition 2012』 (Pearson) ISBN:978-0-321-72412-0 (Few copies are available in the Medical School Library)	
[Reference book, etc.]	
(Reference book) Introduced during class	
[Regarding studies out of class (preparation and review)]	
*Full lecture handouts will be provided one week before each lecture, and will also be uploaded on KULASIS. It is expected that students will have read through the handouts at least once before each lecture to familiarize themselves with the contents. During the lecture, active listening and participation (e.g. by asking questions) will ensure a greater understanding of the basic concepts. Finally, and most importantly, a private review of the handout immediately after the lecture will ensure a full and solid understanding of the lecture concepts	
[Others (office hour, etc.)]	
*The course is presented as a series of engaging and active lectures with demonstrations and video presentations. *Questions and discussions during class are highly encouraged. *I run an open door policy; questions and discussions will be happily addressed anytime, even outside the official office hour.	
	

Lecture code: N901001

Course numbering		U-LAS14 20034 LE68			
Course title <English>	Introduction to Genetics and Evolution-E2		Affiliated department, Job title,Name	Graduate School of Biostudies Professor,HEJNA, James	
	Introduction to Genetics and Evolution-E2				
Group	Natural Sciences		Field(Classification)	Biology(Issues)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Mon.3		Target year	Mainly 1st & 2nd year students	Eligible students For science students
[Outline and Purpose of the Course]					
This class will provide a basic introduction to genetics and molecular genetics, starting with familiar topics. What are chromosomes? How do cats get six toes? We will learn some of the basics about DNA, the genetic material; concepts of dominant and recessive modes of inheritance; various model organisms, and then we will progress to more specific topics, such as human genetics, how genes are regulated, how genetic variation is maintained in populations, and evolution.					
[Course Goals]					
Students will become familiar with "classical" genetics, where mutations come from, genetic linkage and gene mapping, population genetics, and a brief introduction to current topics such as human genetics, gene therapy, genetically modified organisms and evolution.					
[Course Schedule and Contents]					
Second Semester, Mondays, 13:00-14:30					
<ol style="list-style-type: none"> 1. The Structure of DNA and chromosomes 2. Heritability and Independent Assortment--how do chromosomes segregate 3. The source of genetic variation: Mutations and Rearrangements 4. Genetics of Bacteria and Bacteriophages 5. Eukaryotic Genetics, Model Organisms: plants, flies, worms, mice, etc. 6. Linkage and Recombination 7. Transposable Elements 8. Organelles: mitochondrial genes; chloroplast genes. 9. Human Genetics: human genetic diseases, and other topics 10. Cancer Genetics: familial colon cancer. Loss of heterozygosity, etc. 11. Imprinting 12. Reverse Genetics, Genetic engineering, and GMOs 13. Gene Therapy 14. Population Genetics and Evolution 15. Final Exam 16. Feedback Class 					
Note: schedule is subject to change					
Continue to Introduction to Genetics and Evolution-E2(2) ↓ ↓ ↓					

Introduction to Genetics and Evolution-E2(2)	
[Class requirement]	
This is an introductory course. There are no requirements, but some basic familiarity with biology will be beneficial. The course will be taught entirely in English. For some students, they will already have some knowledge of Genetics but maybe not in English. For other students, perhaps they will have good English skills, but will have to learn the specialized vocabulary of Genetics.	
[Method, Point of view, and Attainment levels of Evaluation]	
The final grade will be based on mini-quizzes (30 points) to assess comprehension and a final exam (30 points). Attendance and participation (40 points) will also factor into the final grade.	
[Textbook]	
Hartl 『Essential Genetics 6th ed.』 (Jones and Bartlett Learning) ISBN:978-1-4496-8688-8 (Recommended but not strictly required.)	
[Reference book, etc.]	
(Reference book)	
Introduction to Genetic Analysis, Griffiths et al (2000). Old, but good basics, and free on the NCBI Bookshelf. URL: http://www.ncbi.nlm.nih.gov/books/NBK21766	
[Regarding studies out of class (preparation and review)]	
Students may need 2-3 hours per week to review the lecture material and look up any background information as necessary. Some students may know the subject already, but need to learn the English vocabulary; others may need to learn both Biology and English.	
[Others (office hour, etc.)]	
I will provide handouts for each lecture. I will try to post these on Kulasis ahead of time so that you can study before the lecture. Office hours are Mondays from 10:00-12:00, but you may stop by my office any time, if I am there.	

Lecture code: N911001

Course numbering		U-LAS14 20035 LE68			
Course title <English>	Basic Biology-E2 Basic Biology-E2		Affiliated department, Job title,Name	Graduate School of Biostudies Professor,HEJNA, James	
Group	Natural Sciences		Field(Classification)	Biology(Issues)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Mon.3		Target year	Mainly 1st & 2nd year students	Eligible students For science students
[Outline and Purpose of the Course]					
This class will provide a basic introduction to molecular and cell biology, in English. The class is open to 1st and 2nd year students, and will assume some prior familiarity with elementary chemistry and biology, although students from other majors are welcome to attend. The objective for the class is to nurture an intellectual curiosity about molecular and cell biology, which will lead to more in-depth study later on. We will pay attention to some of the similarities in different organisms, as well as some of the obvious differences, not only between organisms but between cell types, and at the molecular level of protein functions.					
[Course Goals]					
Students will gain familiarity with the fundamental components of cells, and begin to learn how cellular function depends on complex interactions between proteins, nucleic acids, lipids, and carbohydrates, acting alone, in complexes, or in larger structures, such as organelles. Students should begin to appreciate how fundamental processes are conserved over evolutionary time, and also how they vary in different species.					
[Course Schedule and Contents]					
First Semester, Mondays, 13:00-14:30					
<ol style="list-style-type: none"> 1. Big and Small: organisms and molecules Weeks 2-9 will introduce the basic parts that build living cells. 2. Carbohydrates 3. Nucleic Acids-DNA, nucleotides, genes, etc. 4. Nucleic Acids-RNA, ribonucleotides, coding RNAs, non-coding RNAs, etc. 5. Proteins: structural proteins, enzymes, machines 6. Information Flow, the central dogma and beyond. 7. Ribonucleoproteins, including ribosomes and protein translation 8. Lipids and membranes: what makes a cell a cell? 9. Membranes: inside, outside, and channels 10. Energy and Metabolism: what is the power source of the cell? 11. Gene Regulation: how are genes turned on and off? 12. Prokaryotic Cells: basic biology and social interactions 13. Eukaryotic Cells: types of cells; cell differentiation; and more 14. Regulation-homeostasis, communication, and signaling 15. Final Exam 16. Feedback class 					
----- Continue to Basic Biology-E2(2) ↓ ↓ ↓					

Basic Biology-E2(2)	
[Class requirement]	
The class is open to all 1st and 2nd year students, but it assumes some basic (high school) knowledge of chemistry and biology.	
[Method, Point of view, and Attainment levels of Evaluation]	
Lectures will encourage student participation. There will be a final exam and some mini-quizzes to assess comprehension. Attendance will also factor into the final grade. Attendance and participation, 50 points; quizzes, 20 points; final exam, 30 points.	
[Textbook]	
Asashima et al, Online textbook: A Comprehensive approach to Life Science (English version). URL: http://csls-text.c.u-tokyo.ac.jp/index.html	
[Reference book, etc.]	
(Reference book)	
Alberts, The Molecular Biology of the Cell. Older editions are freely searchable online on the PubMed/Books website.	
I will also refer to a general biology textbook: Reece, Urry, Cain, Wasserman, Minorsky, and Jackson. "Campbell Biology", 10th edition. Pearson Education, Inc. 2014	
I will provide lecture handouts for each class, hopefully one week in advance.	
[Regarding studies out of class (preparation and review)]	
For some students, the subject will already be familiar, but the English vocabulary will be new. For others, the biological concepts will be new. Thus, outside work may involve a balance of reading about biology and acquisition of specialized biological vocabulary. I may provide some optional homework problems to help you focus on the key concepts.	
[Others (office hour, etc.)]	
Office hours: Mondays, 10:00-12:00. I am often in my office, and you are free to drop in--I can always find 5 or 10 minutes to talk about biology.	

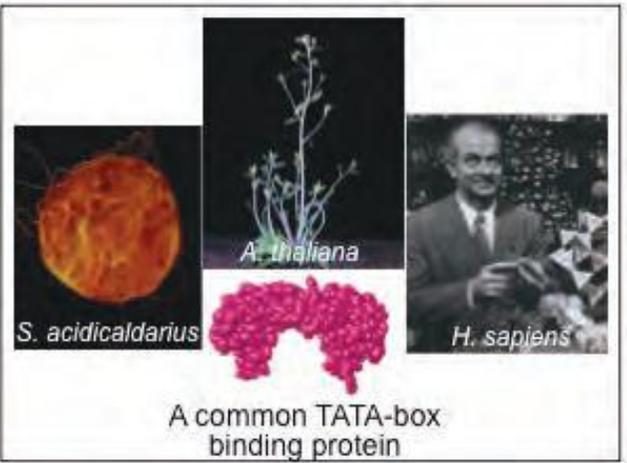
Lecture code: N912001

Course numbering		U-LAS14 20036 LE68			
Course title <English>	Basic Genetic Engineering-E2 Basic Genetic Engineering-E2		Affiliated department, Job title,Name	Graduate School of Biostudies Professor,HEJNA, James	
Group	Natural Sciences		Field(Classification)	Biology(Issues)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Wed.2		Target year	Mainly 1st & 2nd year students	Eligible students For science students
[Outline and Purpose of the Course]					
The objective of this course is to gain a familiarity with the methods, resources, and molecular tools that enable biologists to conduct their research. We will cover basic cloning strategies, expression systems, and applications that are widely used. The course is intended for 1st and 2nd year students, to provide an introduction to genetic engineering, which will serve as a foundation for more advanced courses.					
[Course Goals]					
Students will acquire familiarity with routine subcloning, mutagenesis, reporter constructs, epitope tags, silencing, PCR, and other important techniques. Although this is not a wet lab, we will learn by actually designing genetic engineering projects. Depending on enrollment, we may work in small groups or all together to plan a genetic engineering project, step by step.					
[Course Schedule and Contents]					
Second Semester, Wednesdays, 10:30-12:00					
<ol style="list-style-type: none"> 1. Overview, types of genetic engineering, biosafety 2. Basic Tools: cutting and pasting 3. Bioinformatics tools 4. Propagating DNA constructs 5. PCR, primer design and amplification tips 6. Purification of DNA and RNA 7. DNA libraries 8. The when, where, how, (and why?) of expression 9. Making proteins visible 10. Tools for reverse genetics 11. Editing the genome 12. New approaches to cutting and pasting 13. Knocking down genes 14. Transgenic plants, mice, and gene therapy 15. Final Exam 16. Feedback Class 					
----- Continue to Basic Genetic Engineering-E2(2) ↓ ↓ ↓					

Basic Genetic Engineering-E2(2)	
[Class requirement]	
The course is designed for 1st and 2nd year students, from all backgrounds. Recombineering is conceptually not difficult. The vocabulary will get a bit technical, but with some effort, non-biology students should understand most of the course.	
[Method, Point of view, and Attainment levels of Evaluation]	
Final grades will be based on quizzes (20 points), a final presentation (20 points), and attendance and participation (60 points).	
[Textbook]	
Not used I will teach you how to use many online sources and freeware to work with DNA sequences, vectors, cloning, etc.	
[Reference book, etc.]	
(Reference book) Current Protocols in Molecular Biology (Kyoto University library online subscription). URL: http://onlinelibrary.wiley.com/book/10.1002/0471142727/toc	
[Regarding studies out of class (preparation and review)]	
As we get into individual or team cloning projects, some outside reading or planning may be necessary, roughly 1-2 hours per week.	
[Others (office hour, etc.)]	
I will combine short mini-lectures with in-class work in teams so that you actively learn how to use some of the design tools and strategies for genetic engineering. Office hours: Mondays, 10:00-12:00. I am often in my office, so you may drop by; if I am there, we can talk. Students may need to spend some time working on their independent projects outside of class, although about half of each class will be spent on the group projects. Students should bring a laptop or pad with internet access so that they can work in class.	

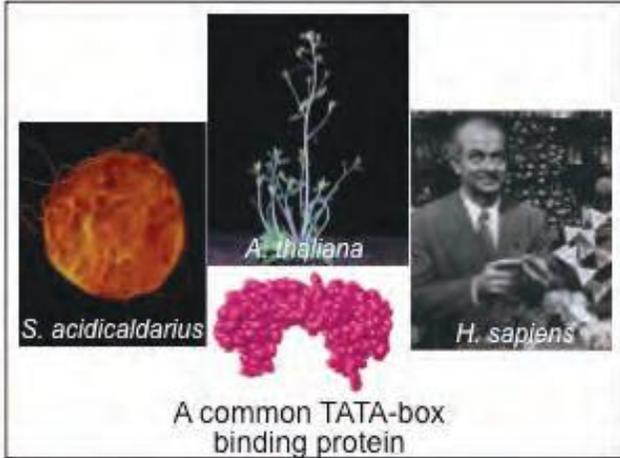
Lecture code: N490001

Course numbering		U-LAS14 20037 LE68			
Course title <English>	Introduction to Biochemistry-E2 Introduction to Biochemistry-E2		Affiliated department, Job title,Name	Graduate School of Medicine Professor,Shohab YOUSSEFIAN	
Group	Natural Sciences		Field(Classification)	Biology(Issues)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Tue.2		Target year	Mainly 1st & 2nd year students	Eligible students For science students
[Outline and Purpose of the Course]					
This introductory course focuses on the basic concepts of biochemistry. It begins from the molecular design of life and considers its major players; nucleic acids as the genetic material, and then proteins, enzymes, carbohydrates, lipids and cell membranes. Based on these preliminary concepts, the course then continues to consider the basic processes involved in metabolism and energy generation in living organisms.					
[Course Goals]					
To appreciate that by understanding some of the underlying concepts and principles of the molecular and biochemical processes that control life, we can more easily comprehend the complexities of diverse biological and physiological systems.					
[Course Schedule and Contents]					
Main Topics:					
<ol style="list-style-type: none"> 1. Introduction to biochemistry, an evolving science 2. Genomes, DNA and DNA replication 3. Genes and gene expression 4. Protein composition and structure 5. Exploring DNA and genes 6. Exploring proteins 7. Introduction to enzymes 8. Carbohydrates 9. Lipids and cell membranes 10. Introduction to metabolism 11. Glycolysis 12. Gluconeogenesis 13. Citric acid cycle 14. Oxidative phosphorylation 15. Final examination 16. Feedback discussions 					
[Class requirement]					
None					
Continue to Introduction to Biochemistry-E2(2) ↓ ↓ ↓					

Introduction to Biochemistry-E2(2)	
[Method, Point of view, and Attainment levels of Evaluation]	
Evaluation will be based on class attendance and active participation (~20 %), mid-course tests (~30 %) and a final examination (~50 %)	
[Textbook]	
Berg, Tymoczko and Stryer 『Biochemistry 7th edition, International 2012』 (W. H. Freeman and Co.) ISBN:978-1-4292-7635-1 (Few copies are available in the Medical School Library)	
[Reference book, etc.]	
(Reference book)	
Introduced during class	
[Regarding studies out of class (preparation and review)]	
*Full lecture handouts will be provided one week before each lecture, and will also be uploaded on KULASIS. It is expected that students will have read through the handouts at least once before each lecture to familiarize themselves with the contents. During the lecture, active listening and participation (e.g. by asking questions) will ensure a greater understanding of the basic concepts. Finally, and most importantly, a private review of the handout immediately after the lecture will ensure a full and solid understanding of the lecture concepts.	
*The course will be associated with a new series of small-group, weekly seminars that will help students obtain a deeper understanding of the basic concepts	
[Others (office hour, etc.)]	
*The course is presented as a series of engaging and active lectures with demonstrations and video presentations.	
*Questions and discussions during class are highly encouraged.	
*We run an open door policy; questions and discussions will be happily addressed anytime, even outside the official office hour.	
 <p>A common TATA-box binding protein</p>	

Lecture code: N490003

Course numbering		U-LAS14 20037 LE68			
Course title <English>		Introduction to Biochemistry-E2 Introduction to Biochemistry-E2		Affiliated department, Job title,Name Graduate School of Medicine Professor,Shohab YOUSSEFIAN	
Group		Natural Sciences		Field(Classification) Biology(Issues)	
Language		English		Old group Group B	
				Number of credits 2	
Number of weekly time blocks		1		Class style Lecture	
				Course offered year/period 2019 • Second semester	
Day/period		Tue.3		Target year Mainly 1st & 2nd year students	
				Eligible students For science students	
[Outline and Purpose of the Course]					
This introductory course focuses on the basic concepts of biochemistry. It begins from the molecular design of life and considers its major players; nucleic acids as the genetic material, and then proteins, enzymes, carbohydrates, lipids and cell membranes. Based on these preliminary concepts, the course then continues to consider the basic processes involved in metabolism and energy generation in living organisms.					
[Course Goals]					
To appreciate that by understanding some of the underlying concepts and principles of the molecular and biochemical processes that control life, we can more easily comprehend the complexities of diverse biological and physiological systems.					
[Course Schedule and Contents]					
Main Topics:					
1. Introduction to biochemistry, an evolving science					
2. Genomes, DNA and DNA replication					
3. Genes and gene expression					
4. Protein composition and structure					
5. Exploring DNA and genes					
6. Exploring proteins					
7. Introduction to enzymes					
8. Carbohydrates					
9. Lipids and cell membranes					
10. Introduction to metabolism					
11. Glycolysis					
12. Gluconeogenesis					
13. Citric acid cycle					
14. Oxidative phosphorylation					
15. Final examination					
16. Feedback discussions					
[Class requirement]					
None					
----- Continue to Introduction to Biochemistry-E2(2) ↓ ↓ ↓					

Introduction to Biochemistry-E2(2)	
[Method, Point of view, and Attainment levels of Evaluation]	
Evaluation will be based on class attendance and active participation (~20 %), mid-course tests (~30 %) and a final examination (~50 %)	
[Textbook]	
Berg, Tymoczko and Stryer 『Biochemistry 7th edition, International 2012』 (W. H. Freeman and Co.) ISBN:978-1-4292-7635-1 (Few copies are available in the Medical School Library)	
[Reference book, etc.]	
(Reference book)	
Introduced during class	
[Regarding studies out of class (preparation and review)]	
*Full lecture handouts will be provided one week before each lecture, and will also be uploaded on KULASIS. It is expected that students will have read through the handouts at least once before each lecture to familiarize themselves with the contents. During the lecture, active listening and participation (e.g. by asking questions) will ensure a greater understanding of the basic concepts. Finally, and most importantly, a private review of the handout immediately after the lecture will ensure a full and solid understanding of the lecture concepts.	
*The course will be associated with a new series of small-group, weekly seminars that will help students obtain a deeper understanding of the basic concepts	
[Others (office hour, etc.)]	
*The course is presented as a series of engaging and active lectures with demonstrations and video presentations.	
*Questions and discussions during class are highly encouraged.	
*We run an open door policy; questions and discussions will be happily addressed anytime, even outside the official office hour.	
 <p>A common TATA-box binding protein</p>	

Lecture code: N490002

Course numbering		U-LAS14 20037 LE68			
Course title <English>	Introduction to Biochemistry-E2 Introduction to Biochemistry-E2		Affiliated department, Job title,Name	Graduate School of Medicine Senior Lecturer,Marco,Marques Candeias	
Group	Natural Sciences		Field(Classification)	Biology(Issues)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Tue.2		Target year	Mainly 1st & 2nd year students	Eligible students For science students
[Outline and Purpose of the Course]					
This introductory course focuses on the basic concepts of biochemistry. It begins from the molecular design of life and considers its major players; nucleic acids as the genetic material, and then proteins, enzymes, carbohydrates, lipids and cell membranes. Based on these preliminary concepts, the course then continues to consider the basic processes involved in metabolism and energy generation in living organisms.					
[Course Goals]					
To appreciate that by understanding some of the underlying concepts and principles of the molecular and biochemical processes that control life, we can more easily comprehend the complexities of diverse biological and physiological systems.					
[Course Schedule and Contents]					
Main Topics:					
<ol style="list-style-type: none"> 1. Introduction to biochemistry, an evolving science 2. Genomes, DNA and DNA replication 3. Genes and gene expression 4. Protein composition and structure 5. Exploring DNA and genes 6. Exploring proteins 7. Introduction to enzymes 8. Carbohydrates 9. Lipids and cell membranes 10. Introduction to metabolism 11. Glycolysis 12. Gluconeogenesis 13. Citric acid cycle 14. Oxidative phosphorylation 15. Final examination 16. Feedback discussions 					
[Class requirement]					
None					
Continue to Introduction to Biochemistry-E2(2) ↓ ↓ ↓					

Introduction to Biochemistry-E2(2)
[Method, Point of view, and Attainment levels of Evaluation]

Evaluation will be based on class attendance and active participation (~20 %), mid-course tests (~30 %) and a final examination (~50 %)

[Textbook]

Berg, Tymoczko and Stryer 『Biochemistry 7th edition, International 2012』 (W. H. Freeman and Co.) ISBN:978-1-4292-7635-1 (Few copies are available in the Medical School Library)

[Reference book, etc.]
(Reference book)

Introduced during class

[Regarding studies out of class (preparation and review)]

*Full lecture handouts will be provided one week before each lecture, and will also be uploaded on KULASIS. It is expected that students will have read through the handouts at least once before each lecture to familiarize themselves with the contents. During the lecture, active listening and participation (e.g. by asking questions) will ensure a greater understanding of the basic concepts. Finally, and most importantly, a private review of the handout immediately after the lecture will ensure a full and solid understanding of the lecture concepts.

*The course will be associated with a new series of small-group, weekly seminars that will help students obtain a deeper understanding of the basic concepts

[Others (office hour, etc.)]

*The course is presented as a series of engaging and active lectures with demonstrations and video presentations.

*Questions and discussions during class are highly encouraged.

*We run an open door policy; questions and discussions will be happily addressed anytime, even outside the official office hour.



Lecture code: N490004

Course numbering		U-LAS14 20037 LE68			
Course title <English>	Introduction to Biochemistry-E2 Introduction to Biochemistry-E2		Affiliated department, Job title,Name	Graduate School of Medicine Senior Lecturer,Marco,Marques Candeias	
Group	Natural Sciences		Field(Classification)	Biology(Issues)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Tue.3		Target year	Mainly 1st & 2nd year students	Eligible students For science students
[Outline and Purpose of the Course]					
This introductory course focuses on the basic concepts of biochemistry. It begins from the molecular design of life and considers its major players; nucleic acids as the genetic material, and then proteins, enzymes, carbohydrates, lipids and cell membranes. Based on these preliminary concepts, the course then continues to consider the basic processes involved in metabolism and energy generation in living organisms.					
[Course Goals]					
To appreciate that by understanding some of the underlying concepts and principles of the molecular and biochemical processes that control life, we can more easily comprehend the complexities of diverse biological and physiological systems.					
[Course Schedule and Contents]					
Main Topics:					
<ol style="list-style-type: none"> 1. Introduction to biochemistry, an evolving science 2. Genomes, DNA and DNA replication 3. Genes and gene expression 4. Protein composition and structure 5. Exploring DNA and genes 6. Exploring proteins 7. Introduction to enzymes 8. Carbohydrates 9. Lipids and cell membranes 10. Introduction to metabolism 11. Glycolysis 12. Gluconeogenesis 13. Citric acid cycle 14. Oxidative phosphorylation 15. Final examination 16. Feedback discussions 					
[Class requirement]					
None					
----- Continue to Introduction to Biochemistry-E2(2) ↓ ↓ ↓					

Introduction to Biochemistry-E2(2)	
[Method, Point of view, and Attainment levels of Evaluation]	
Evaluation will be based on class attendance and active participation (~20 %), mid-course tests (~30 %) and a final examination (~50 %)	
[Textbook]	
Berg, Tymoczko and Stryer 『Biochemistry 7th edition, International 2012』 (W. H. Freeman and Co.) ISBN:978-1-4292-7635-1 (Few copies are available in the Medical School Library)	
[Reference book, etc.]	
(Reference book)	
Introduced during class	
[Regarding studies out of class (preparation and review)]	
*Full lecture handouts will be provided one week before each lecture, and will also be uploaded on KULASIS. It is expected that students will have read through the handouts at least once before each lecture to familiarize themselves with the contents. During the lecture, active listening and participation (e.g. by asking questions) will ensure a greater understanding of the basic concepts. Finally, and most importantly, a private review of the handout immediately after the lecture will ensure a full and solid understanding of the lecture concepts.	
*The course will be associated with a new series of small-group, weekly seminars that will help students obtain a deeper understanding of the basic concepts	
[Others (office hour, etc.)]	
*The course is presented as a series of engaging and active lectures with demonstrations and video presentations.	
*Questions and discussions during class are highly encouraged.	
*We run an open door policy; questions and discussions will be happily addressed anytime, even outside the official office hour.	
	

Lecture code: N491001

Course numbering		U-LAS14 20038 LE68			
Course title <English>	Introduction to Molecular Biotechnology-E2		Affiliated department, Job title, Name	Graduate School of Medicine Professor, Shohab YOUSSEFIAN	
	Introduction to Molecular Biotechnology-E2				
Group	Natural Sciences		Field(Classification)	Biology(Issues)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Tue.3		Target year	Mainly 1st & 2nd year students	Eligible students For science students
[Outline and Purpose of the Course]					
<p>Molecular Biotechnology is an exciting, evolving and interdisciplinary area of science that is expected to impact not only on the way we live but human life itself. It is being used to produce chemicals, medicines and other products in recombinant bacterial, plant and animal cells; to create transgenic plants that synthesize novel products or are resistant to various stresses, and transgenic animals with increased productivity; and is even being applied to modify humans through gene therapy and regenerative medicine.</p> <p>The course will begin by outlining our current understanding of genomes, DNA and genes and their regulation, will then focus on the concepts behind basic techniques routinely used to isolate and analyse DNA and proteins, will examine how these principles and methodologies are used to generate transgenic organisms, and will finally evaluate the pros and cons of such transgenic applications.</p>					
[Course Goals]					
To appreciate the tremendous potential of molecular biotechnology through a solid understanding of its basic principles, techniques and current applications, and thereby be able to address, from a fully informed point of view, the moral and bioethical issues that arise from the use of such breakthrough technologies.					
[Course Schedule and Contents]					
<p>Main Topics:</p> <ol style="list-style-type: none"> 1. Introduction; overview, concepts, development and future 2. Genome organization, DNA and genes 3. Gene expression and regulation 4. Principles and techniques of recombinant DNA technology 5. Molecular techniques for gene identification 6. Molecular techniques of gene analysis 7. Recombinant proteins; synthesis and analysis 8. Methods in microbial molecular biotechnology 9. Applications of microbial molecular biotechnology 10. Methods in plant molecular biotechnology 11. Applications of plant molecular biotechnology 12. Methods in animal, human and medical biotechnology 13. Applications of animal and human molecular genetics 14. Social and ethical issues of molecular biotechnology 15. Final examination 16. Feedback 					
Continue to Introduction to Molecular Biotechnology-E2(2) ↓ ↓ ↓					

Introduction to Molecular Biotechnology-E2(2)	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Evaluation will be based on class attendance and active participation (~20 %), mid-course tests (~30 %) and a final examination (~50 %)	
[Textbook]	
Glick, Pasternak and Patten 『Molecular Biotechnology 4th Edition 2009』 (ASM Press) ISBN:978-1-55581-498-4 (Lectures are partially based on this textbook. Few copies are available in Medical School Library)	
[Reference book, etc.]	
(Reference book)	
Introduced during class	
[Regarding studies out of class (preparation and review)]	
*Full lecture handouts will be provided one week before each lecture, and will also be uploaded on KULASIS. It is expected that students will have read through the handouts at least once before each lecture to familiarize themselves with the contents. During the lecture, active listening and participation (e.g. by asking questions) will ensure a greater understanding of the basic concepts. Finally, and most importantly, a private review of the handout immediately after the lecture will ensure a full and solid understanding of the lecture concepts	
[Others (office hour, etc.)]	
*The course is presented as a series of engaging and active lectures with demonstrations and video presentations.	
*Questions and discussions during class are highly encouraged.	
*I run an open door policy; questions and discussions will be happily addressed anytime, even outside the official office hour.	
	

Lecture code: N913001

Course numbering		U-LAS14 20043 LE68			
Course title <English>	Introduction to Behavioral Neuroscience A-E2		Affiliated department, Job title,Name	Graduate School of Medicine Assistant Professor,VEALE, Richard Edmund	
	Introduction to Behavioral Neuroscience A-E2				
Group	Natural Sciences		Field(Classification)	Biology(Issues)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Fri.5		Target year	All students	Eligible students For all majors
[Outline and Purpose of the Course]					
Behavioral Neuroscience investigates the neural basis of behavior. Part A of this course will provide an introduction to basic neuroanatomy, neural functioning, neuroscience methods, perception, attention, and movement. The course will employ an integrative approach by discussing both research results obtained with brain imaging in humans and experiments in animal models.					
[Course Goals]					
<ul style="list-style-type: none"> - To understand how our brain processes information. - To understand the methods used to investigate the brain and behavior. - To be able to critically evaluate research findings in behavioral neuroscience reported in the public and scientific media. 					
[Course Schedule and Contents]					
<ol style="list-style-type: none"> 1) Introduction to Behavioral Neuroscience 2) Coarse anatomy of the nervous system 3) Cells in the nervous system 4) Neural information processing 5) Neurotransmitters, drugs, and hormones 6) Demonstration of Electroencephalography 7) Methods in Behavioral Neuroscience 8) Vision 9) Audition 10) Touch and pain 11) Integrating the senses 12) Attention 13) Voluntary body movement 14) Movement planning 15) Feedback (Please arrange by email) 					
[Class requirement]					
Basic knowledge of high-school level biology is recommended. The course will continue in the following semester with "Introduction to Behavioral Neuroscience B".					
[Method, Point of view, and Attainment levels of Evaluation]					
Evaluation will be based on class attendance and active participation (30 points), short student presentation or report (15 points), and 5 random in-class open-note quizzes(55 points), the lowest of which is not counted.					
Continue to Introduction to Behavioral Neuroscience A-E2(2) ↓ ↓ ↓					

Introduction to Behavioral Neuroscience A-E2(2)	

Students who are absent more than five times will not be credited.	
[Textbook]	
Bear, Connors, Paradiso 『Neuroscience: Exploring the brain』 (Lippincott) ISBN:1451109547 (textbook not mandatory, lecture notes will be provided)	
[Reference book, etc.]	
(Reference book)	
Kandel, Schwartz, et al. 『Principles of Neural Science』 (McGraw-Hill) ISBN:0071390111 (textbook with more detailed information, not mandatory)	
[Regarding studies out of class (preparation and review)]	
To achieve the course goals students should review the course materials plus optionally the according chapters in the recommended text books after each class. The time necessary for review should be in the range of 2-3 hours per class.	
[Others (office hour, etc.)]	
No fixed office hours, but students are welcome to arrange appointments by email.	

Lecture code: N914001

Course numbering		U-LAS14 20044 LE68			
Course title <English>	Introduction to Behavioral Neuroscience B-E2		Affiliated department, Job title,Name	Graduate School of Medicine Assistant Professor,VEALE, Richard Edmund	
	Introduction to Behavioral Neuroscience B-E2				
Group	Natural Sciences		Field(Classification)	Biology(Issues)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Fri.5		Target year	All students	Eligible students For all majors
[Outline and Purpose of the Course]					
Behavioral Neuroscience investigates the neural basis of behavior. Part B of this course will provide an introduction to higher brain functions, such as motivation, learning, memory, communication and language. The course will employ an integrative approach by discussing both research results obtained with brain imaging in humans and experiments in animal models.					
[Course Goals]					
<ul style="list-style-type: none"> - To understand how our brain generates complex behavior. - To understand how we can apply basic research in behavioral neuroscience to our everyday life. - To be able to critically evaluate research findings in behavioral neuroscience reported in the public and scientific media. 					
[Course Schedule and Contents]					
<ol style="list-style-type: none"> 1) Introduction to higher brain functions 2) Motivation 3) Learning 4) Memory 5) Spatial memory and navigation 6) Executive functions and planning 7) Emotions 8) Reproductive behavior 9) Communication and language 10) Human language and language disorders 11) Social interaction 12) Evolution and development of behavior 13) Neurological and psychiatric disorders 14) Behavioral treatment strategies 15) Feedback (arrange by email) 					
[Class requirement]					
Introduction to Behavioral Neuroscience A is recommended (but not mandatory), because it provides the fundamental knowledge for this course.					
[Method, Point of view, and Attainment levels of Evaluation]					
Evaluation will be based on class attendance and active participation (30 points), short student presentation or report (15 points), and 5 in-class short open-note tests (55 points), the lowest of which will be dropped. The					
Continue to Introduction to Behavioral Neuroscience B-E2(2) ↓ ↓ ↓					

Introduction to Behavioral Neuroscience B-E2(2)
----- short tests and report will test whether students have achieved the course goals. Students who are absent more than five times will not be credited.
[Textbook]
Bear, Connors, Paradiso 『Neuroscience: Exploring the brain』 (Lippincott) ISBN:1451109547 (textbook not mandatory, lecture notes will be provided)
[Reference book, etc.]
(Reference book) Kandel, Schwartz, et al. 『Principles of Neural Science』 (McGraw-Hill) ISBN:0071390111 (textbook with more detailed information, not mandatory)
[Regarding studies out of class (preparation and review)]
To achieve the course goals students should review the course materials plus optionally the according chapters in the recommended text books after each class. The time necessary for review should be in the range of 2-3 hours per class.
[Others (office hour, etc.)]
No fixed office hours, but students are welcome to arrange appointments by email.

Lecture code: N917001

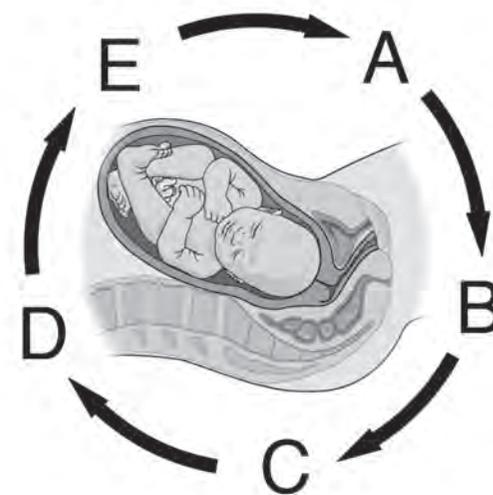
Course numbering		U-LAS14 20045 LE68			
Course title <English>		Fundamentals of Neuroscience-E2 Fundamentals of Neuroscience-E2		Affiliated department, Job title,Name Graduate School of Medicine Senior Lecturer,ZENAS C. CHAO	
Group	Natural Sciences		Field(Classification)		Biology(Issues)
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Mon.2		Target year	All students	Eligible students For all majors
[Outline and Purpose of the Course]					
This course covers the basic background required to understand how networks of neurons could generate complex functions of the brain. You will learn topics ranging from the electrical properties of an individual neuron to higher brain functions, such as memory and consciousness. In this class, I will put more emphasis on big picture concepts, which I believe are more meaningful than memorizing a lot of facts and details that you can easily look up. Students with no biology-related backgrounds are welcome.					
[Course Goals]					
(1) To understand the basic components of the nervous system. (2) To appreciate the complexity of brain functions and to understand their biological basis. (3) To review and share neuroscience topics through presentation and discussion.					
[Course Schedule and Contents]					
(1) Introduction					
PART I. Neurons & Neural Networks					
(2) Neurons & Glia					
(3) The Resting Potential					
(4) The Action Potential & Its Propagation					
(5) Synaptic Transmission					
(6) Computation in Small Circuits					
(7) Synaptic Plasticity					
PART II. Functions of the Brain					
(8) Brain Anatomy					
(9) Sensory System- Vision					
(10) Sensory System- Audition					
(11) Motor System					
(12) Learning & Memory					
(13) Attention & Consciousness					
(14) Self & Society					
(15) Final Exam					
(16) Feedback					
----- Continue to Fundamentals of Neuroscience-E2(2) ↓ ↓ ↓					

Fundamentals of Neuroscience-E2(2)	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Participation (~25%), short presentation (~25%), quizzes (~25%), final exam (~25%).	
[Textbook]	
Instructed during class Lecture notes will be provided.	
[Reference book, etc.]	
(Reference book) UTHealth Neuroscience Online Textbook: https://nba.uth.tmc.edu/neuroscience/	
[Regarding studies out of class (preparation and review)]	
Students are expected to be active participants in class discussions, and to spend 1~2 hours per week to review the course materials.	
[Others (office hour, etc.)]	
	

Lecture code: N918001

Course numbering		U-LAS14 20046 LE68			
Course title <English>		Introduction to Human Physiology-E2 Introduction to Human Physiology-E2		Affiliated department, Job title,Name Graduate School of Medicine Senior Lecturer,ZENAS C. CHAO	
Group	Natural Sciences		Field(Classification)		Biology(Issues)
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Mon.2		Target year	All students	Eligible students For all majors
[Outline and Purpose of the Course]					
This course covers the basic background required to understand how the major organ systems of the human body perform their normal functions and how they work together to maintain our health. You will connect the knowledge learned in the class to your everyday life. This class aims primarily at students who have minimal to no biology background.					
[Course Goals]					
(1) To understand the function of the major organ systems and how they work together. (2) To develop a vocabulary of anatomy and physiology. (3) To review and share physiology topics through presentation and discussion.					
[Course Schedule and Contents]					
(1) Introduction					
PART I. Levels of Organization					
(2) Cells (3) Tissues					
PART II. Support & Movement					
(4) Skeletal System (5) Muscular System					
PART III. Regulation, Integration, & Control					
(6) Nervous System (7) Senses (8) Autonomic Nervous System (9) Endocrine System					
PART IV. Fluids & Transport					
(10) Cardiovascular System (11) Blood					
PART V. Energy, Maintenance, & Environmental Exchange					
(12) Respiratory System (13) Digestive System (14) Urinary System					
Continue to Introduction to Human Physiology-E2(2) ↓ ↓ ↓					

Introduction to Human Physiology-E2(2)	

(15) Final Exam (16) Feedback	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Participation (~25%), short presentation (~25%), quizzes (~25%), final exam (~25%).	
[Textbook]	
OpenStax: Anatomy & Physiology (download from https://openstax.org/details/books/anatomy-and-physiology). Lecture notes will also be provided.	
[Reference book, etc.]	
(Reference book) Introduced during class	
[Regarding studies out of class (preparation and review)]	
Students are expected to be active participants in class discussions, and to spend 1~2 hours per week to review the course materials.	
[Others (office hour, etc.)]	
	

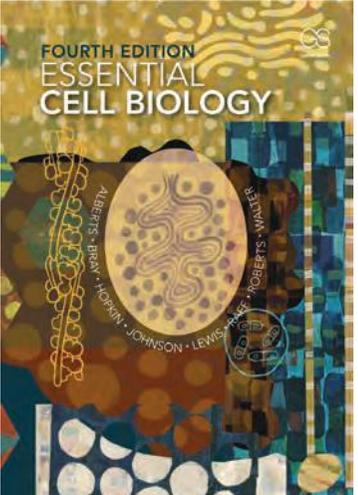
Lecture code: N931001

Course numbering					
Course title <English>	Introduction to Biological Rhythms-E2 Introduction to Biological Rhythms-E2		Affiliated department, Job title, Name	Graduate School of Pharmaceutical Sciences Associate Professor, Fustin, Jean Michel	
Group	Natural Sciences		Field(Classification)	Biology(Issues)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Thu.5		Target year	Mainly 2nd year students	Eligible students For science students
[Outline and Purpose of the Course]					
<p>Since the beginning of Humanity, time and its measurement has always occupied a central position in our minds. Sundials and stone circles are the legacy of early civilizations striving to know the time of day and the time of the seasons.</p> <p>Despite this keen interest in knowing Time, the existence of an internal biological clock keeping track of time in an autonomous manner but synchronized to the environment has only been recognized towards the end of the 20th century. In 2017, the Nobel Prize in Physiology or Medicine was awarded to Jeffrey Hall, Michael Rosbash and Michael Young for their work in understanding how the circadian clock works at the molecular level.</p> <p>The discovery of clock genes regulating their own expression and that of output genes of metabolic significance, leading to pervasive circadian rhythms in physiology and behavior in virtually every organisms studied thus far, has provided a solid base in understanding how our health intimately depends on such harmonious rhythms.</p> <p>This course will dive into the fascinating world of Chronobiology, from the history of the discipline to its latest groundbreaking progresses.</p>					
[Course Goals]					
<p>Students will gain an understanding of how their biological clock works, and why it is important for their performance, behavior and physiology.</p> <p>Students will acquire the knowledge that, in biology, time-of-day can have a dramatic effect on physiology and metabolism, which is important for our daily life, but also when performing experiments with living organisms.</p> <p>Students will learn about state-of-the-art methods employed in circadian biology investigations.</p> <p>As this course is frequently updated, students will acquire up-to-date knowledge in Circadian biology.</p>					
[Course Schedule and Contents]					
<p>WEEK 1: Introduction to Biological Timing in Health and Disease WEEK 2: The Suprachiasmatic Nucleus and the Circadian Timing System WEEK 3: Epigenetic Regulation of the Molecular Clockwork WEEK 4: Diversity of Human Clock Genotypes and Consequences WEEK 5: Peripheral Circadian Oscillators: Time and Food WEEK 6: Circadian Clocks, Food Intake, and Metabolism WEEK 7: Control of Sleep and Wakefulness in Health and Disease WEEK 8: Circadian Rhythms, Sleep Deprivation, and Human Performance</p>					
Continue to Introduction to Biological Rhythms-E2(2) ↓ ↓					

Introduction to Biological Rhythms-E2(2)
<p>WEEK 9: Timing, Sleep, and Respiration in Health and Disease WEEK 10: The Circadian Clock in Cancer Development and Therapy WEEK 11: Health Consequences of Circadian Disruption in Humans and Animal Models WEEK 12: Sleep and Circadian Rhythm Disruption in Social Jetlag and Mental Illness WEEK 13: Recent Advances in Circadian Biology WEEK 14: Seasonal Rhythms and Other Biological Oscillations</p>
[Class requirement]
Basic knowledge on biology and physiology needed.
[Method, Point of view, and Attainment levels of Evaluation]
The final exam of 90 minutes is a 50/50 mix of Multiple Choice Questions and Open Question.
[Textbook]
Martha Gillette 『Chronobiology: Biological Timing in Health and Disease』 (Elsevier) ISBN: 9780123972804 (Ebook available from: https://www.elsevier.com/books/chronobiology-biological-timing-in-health-and-disease/gillette/978-0-12-396971-2)
[Reference book, etc.]
(Reference book) Introduced during class
[Regarding studies out of class (preparation and review)]
After the lecture, students should review the materials given during the lecture. It will be necessary to do so in order to understand the next lecture.
[Others (office hour, etc.)]
Any questions and requests are welcome by prior arrangements via E-mail.


Lecture code: N932001

Course numbering					
Course title <English>	Introduction to Molecular Cell Biology-E2		Affiliated department, Job title, Name	Graduate School of Pharmaceutical Sciences Associate Professor, Fustin, Jean Michel	
	Introduction to Molecular Cell Biology-E2				
Group	Natural Sciences		Field(Classification)	Biology(Issues)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Fri.5		Target year	Mainly 1st year students	Eligible students For science students
[Outline and Purpose of the Course]					
<p>In our world there is no form of matter more astonishing than the living cell: tiny, fragile, marvelously intricate, continually made afresh, yet preserving in its DNA a record of information dating back more than three billion years, to a time when our planet had barely cooled from the hot materials of the nascent solar system. Ceaselessly re-engineered and diversified by evolution, extraordinarily versatile and adaptable, the cell retains a complex core of self-replicating chemical machinery that is shared and endlessly repeated by every living organism on the face of the Earth in every animal, every leaf, every bacterium in a piece of cheese, every yeast in a vat of wine.</p> <p>Curiosity, if nothing else, should drive us to study cell biology; we need to understand cell biology to understand ourselves. But there are practical reasons, too, why cell biology should be a part of everyone's education. We are made of cells, we feed on cells, and our world is made habit-able by cells. The challenge for scientists is to deepen our knowledge of cells and find new ways to apply it. All of us, as citizens, need to know something of the subject to grapple with the modern world, from our own health affairs to the great public issues of environmental change, biomedical technologies, agriculture, and epidemic disease.</p> <p>This course is designed to provide the fundamentals of cell biology that are required by anyone to understand both the biomedical and the broader biological issues that affect our lives.</p> <p>This course is not recommended for students who already have selected specialized life science courses such as biochemistry and genetics. (Essential Cell Biology)</p>					
[Course Goals]					
<p>This course will give a basic understanding of cellular physiology. Students will be able to explain, in English, how the cell is organized and how it functions.</p>					
[Course Schedule and Contents]					
<p>This lecture will describe cellular physiology in continuity with the course titled "Basic Biology and Metabolism".</p> <p>WEEK 1 - WEEK 2. DNA replication, repair and recombination WEEK 3 - WEEK 4. From DNA to protein: How Cells Read the Genome WEEK 5 - WEEK 6. Control of Gene expression</p>					
Continue to Introduction to Molecular Cell Biology-E2(2) ↓ ↓					

Introduction to Molecular Cell Biology-E2(2)
<p>WEEK 7 - WEEK 8. Membrane Structure WEEK 9 - WEEK 10. Transport Across Cell Membranes WEEK 11 - WEEK 12. How Cells Obtain Energy From Food WEEK 13 - WEEK 14. Cell-division cycle</p> <p>This schedule may proceed quicker or more slowly than expected, depending on the level and number of the students.</p>
[Class requirement]
Students who have chosen Basic Biology and Metabolism are encouraged to also follow this course.
[Method, Point of view, and Attainment levels of Evaluation]
A mid-term examination, in English, to assess the students understanding of the content so far (50%).
A final examination, in English, to assess the students global understanding of the course (50%).
[Textbook]
Alberts B et al. 『Essential Cell Biology 4th edition』 (Garland Science) ISBN:815344554 Handouts based various sources specifically tailored for the lecture will be provided.
[Regarding studies out of class (preparation and review)]
Reading the textbook before the lecture will help the students to understand the lecture. Students should review the textbook after the lecture and answer the questions provided.
[Others (office hour, etc.)]
Any questions and requests are welcome by prior arrangements via E-mail.


Lecture code: N904001

Course numbering		U-LAS14 20049 LE68			
Course title <English>	Chromosome Biology-E2 Chromosome Biology-E2		Affiliated department, Job title,Name	Graduate School of Biostudies Associate Professor,CARLTON, Peter	
Group	Natural Sciences		Field(Classification)	Biology(Issues)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Tue.5		Target year	Mainly 1st & 2nd year students	Eligible students For all majors
[Outline and Purpose of the Course]					
DNA contains all the information needed to build complex organisms from a single cell. Inside cells, DNA is packaged into discrete bodies called chromosomes. This class will give students a very basic introduction to the fascinating world of chromosomes. Students will learn what chromosomes are, how DNA is packaged inside them, how they replicate and divide, and how problems with chromosomes can lead to disease. This introductory class is also intended to give students a foundation for further studies of genetics and genomics.					
[Course Goals]					
-To understand the central importance of chromosomes in biology -To understand how chromosomes are transmitted from one generation to the next, i.e., the fundamentals of genetics and heredity -To understand how problems with chromosome maintenance can lead to disease -To understand how researchers can visualize, isolate, and study chromosomes					
[Course Schedule and Contents]					
1. Overview of the course; human chromosomes and chromosome disorders 2. Small-scale structure of chromosomes: DNA and nucleosomes 3. Large-scale structure of chromosomes, chromosome condensation and cohesion 4. How chromosomes behave during cell division 5. Chromosomes and the cell nucleus 6. Sex chromosomes 7. Meiosis introduction: how sex creates diversity 8. Meiotic chromosome pairing 9. Meiotic recombination 10. Chromosome evolution 11. Chromosomes and genome sequence 12. Chromosome structure from sequence data 13. Chromosome diversity: a survey of unusual and fascinating chromosome variations 14. The current frontier of chromosome biology					
[Class requirement]					
The course is open to all students, but a background in biology is highly recommended.					
----- Continue to Chromosome Biology-E2(2) ↓ ↓ ↓					

Chromosome Biology-E2(2)	
[Method, Point of view, and Attainment levels of Evaluation]	
Grading will be based on three areas: active participation, quizzes, and a final exam. Each area will contribute 1/3rd of the total grade.	
[Textbook]	
Not used	
[Regarding studies out of class (preparation and review)]	
For some students, the material will be familiar, but the English vocabulary will be new. For other students, both the content and the vocabulary will be new; for these students, this class may require extensive out-of-class study.	
[Others (office hour, etc.)]	
Office hours will be 1 hour once per week on Fridays. Schedule to be announced on the first day of class.	

Lecture code: N907001

Course numbering		U-LAS14 20050 LE68			
Course title <English>	Practical Computing for Biologists-E2 Practical Computing for Biologists-E2		Affiliated department, Job title,Name	Graduate School of Biostudies Associate Professor,CARLTON, Peter	
Group	Natural Sciences		Field(Classification)	Biology(Issues)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Tue.5		Target year	Mainly 1st & 2nd year students	Eligible students For science students
[Outline and Purpose of the Course]					
This class will introduce students to basic but powerful computational tools that are increasingly becoming an essential part of biological research. We will explore some useful open source software for DNA and protein analysis, and additional programs for analyzing biological images. Each class will start with a background lecture and proceed to hands-on use. The aim of the class is to provide an introduction that will enable further exploration of computational biology.					
[Course Goals]					
<ul style="list-style-type: none"> -To discover current bioinformatics and biological image analysis software -To be able to design analyze DNA sequences using open online software -To learn general principles of programming using the Python language -To develop a foundation for further exploration of the exciting world of bioinformatics 					
[Course Schedule and Contents]					
<ol style="list-style-type: none"> 1. Overview of the course. How are computers used in biology? 2. Getting the computer to do stuff: introduction to the "Shell" (terminal) 3. Introduction to text files and DNA sequence text files 4. The EMBOSS molecular biology suite: Overview of protein and DNA sequence features 5. Searching for sequences within the human genome and proteome 6. Working with DNA sequences: introduction to Benchling 7. DNA cloning (making a new DNA sequence from existing ones) 8. Molecular scissors: introduction to genome engineering with CRISPR/Cas9 9. Beginning programming with Python, a general computer language that can be adapted for biology 10. Searching DNA sequences with Python 11. Introduction to R, a language for statistical computing 12. Imaging for biologists: Image fundamentals (pixels, intensity, scaling) using Fiji 13. Measuring objects in your images 14. Calculating the speed of moving particles using image analysis 					
[Class requirement]					
A laptop computer with a wireless internet connection is highly recommended. Windows users should install the program "putty" (from http://www.putty.org) to connect to the class server; Mac and UNIX users can use the built-in terminal program. Provisions can be made for students who do not have their own laptop.					
----- Continue to Practical Computing for Biologists-E2(2) ↓ ↓ ↓					

Practical Computing for Biologists-E2(2)	
[Method, Point of view, and Attainment levels of Evaluation]	
Grading will be based on three areas: active participation, quizzes (including homework), and a final exam. Each area will contribute 1/3rd of the total grade.	
[Textbook]	
Haddock and Dunn 『Practical Computing for Biologists』 (Sinauer Associates) ISBN:978-0-87893-391-4 (Textbook purchase is suggested but optional. See also the companion website at http://practicalcomputing.org)	
[Regarding studies out of class (preparation and review)]	
Students will have to understand technical vocabulary in English. This may require studying and research outside of class hours.	
[Others (office hour, etc.)]	
Office hours will be 1 hour once per week, schedule to be announced on the first day of class.	

Lecture code: N493001

Course numbering		U-LAS14 20051 LE68			
Course title <English>	Basic Plant Science-E2 Basic Plant Science-E2		Affiliated department, Job title,Name	Graduate School of Agriculture Associate Professor,Garry John PILLER	
Group	Natural Sciences		Field(Classification)	Biology(Issues)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Mon.2		Target year	Mainly 1st & 2nd year students	Eligible students For science students
[Outline and Purpose of the Course]					
The purpose of this course is to provide a fundamental understanding of plant biology with potential applications to the fields of agriculture, horticulture, botany, food, ecology and conservation. In this course basic knowledge of flowering plant structure, function, reproduction, physiology, and genetics will be covered.					
[Course Goals]					
Upon successful completion of this course students will be able to:					
<ul style="list-style-type: none"> * Identify major plant parts and function * Explain the fundamentals of plant physiology and reproduction * Collect, analyze and interpret data related to plant growth and development * Think critically about plant science and research 					
[Course Schedule and Contents]					
Course Schedule					
<ol style="list-style-type: none"> 1. Plants & People 2. Cells, Tissues, & Meristems 3. Stems 4. Leaves & Roots 5. Cell Function 6. Resource Acquisition & Transport Systems 7. Respiration 8. Photosynthesis/ Mid Term exam 9. Life Cycles 10. Flowers & Sexual Reproduction 11. Seeds & Fruits 12. Control of Growth & Development 13. Genetics & Evolution 14. Biotechnology 15. End of Term Exam 16. Feedback 					
Continue to Basic Plant Science-E2(2) ↓ ↓ ↓					

Basic Plant Science-E2(2)
[Class requirement]
None
[Method, Point of view, and Attainment levels of Evaluation]
Grading: Class attendance, active participation & listening quizzes (20%), presentation (20%), weekly quizzes based on assigned pre-class reading materials (30%), and an end of term exam (30%)
[Textbook]
Not used
[Reference book, etc.]
(Reference book)
Handouts and supplemental readings will be distributed electronically and/or as a hard copy in class
[Regarding studies out of class (preparation and review)]
Students should read or listen to the required pre-class materials and submit any required assignment before the class, and come to class ready to participate in class activities. Typically, this will entail listening to a short video or podcast (10 min. or less), as well as reading a 2 or 3 page handout and be prepared to write answers to 1 or 2 questions about the reading material in the following class (15 to 20 minutes provided in class).
[Others (office hour, etc.)]
Open door policy during office hours, and anytime by email.


Lecture code: N494001

Course numbering		U-LAS14 20052 LE68			
Course title <English>	Introductory Plant Ecology-E2		Affiliated department, Job title,Name	Graduate School of Agriculture Associate Professor,Garry John PILLER	
	Introductory Plant Ecology-E2				
Group	Natural Sciences		Field(Classification)	Biology(Issues)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Wed.3		Target year	Mainly 1st & 2nd year students	Eligible students For science students
[Outline and Purpose of the Course]					
Plant ecology underpins many scientific disciplines, including ecosystem rehabilitation, conservation and management biology, and research on climate change impacts. This course will introduce students to the principles of plant ecology. The focus will be on the factors that influence plant distribution and abundance: light, water, nutrients, growth patterns, plant and animal interactions, and disturbances. In addition, current ecological issues such as climate change and exotic species invasions will be examined.					
[Course Goals]					
Upon successful completion of this course students will be able to:					
<ul style="list-style-type: none"> * Explain the fundamental processes that influence species' distribution and abundance * Discuss interactions between plants and the environment, as well as with other organisms * Apply ecological principles to environmental issues * Access and critically analyze basic research pertaining to plant ecology 					
[Course Schedule and Contents]					
Course Schedule					
<ol style="list-style-type: none"> 1. Introduction to Plant Ecology 2. Light 3. Water Relations 4. Soils & Nutrition 5. Evolutionary Processes 6. Population Structure 7. Growth & Reproduction 8. Community Patterns 9. Competition 10. Herbivory & Plant-Pathogen Interactions 11. Disturbance & Fire 12. Succession 13. Communities in Landscapes 14. Global Change: Humans & Plants 15. End of Term Exam 16. Feedback 					
Continue to Introductory Plant Ecology-E2(2) ↓ ↓ ↓					

Introductory Plant Ecology-E2(2)	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Grading: Class attendance and submission of questions related to listening exercise (20%), weekly quizzes based on assigned pre-class reading materials (30%), in-class group presentation (20%) on a topic in the field of plant ecology, and an end of term exam (30%).	
[Textbook]	
Not used	
[Reference book, etc.]	
(Reference book)	
Handouts will be given out in class, as well as emailed to the students.	
[Regarding studies out of class (preparation and review)]	
Students should read or listen to the required pre-class materials and submit any required assignment before the class, and come to class ready to participate in class activities. Typically, this will entail listening to a short video or podcast (10 min. or less), as well as reading a 2 or 3 page handout and be prepared to write answers to 1 or 2 questions about the reading material in the following class (15 to 20 minutes provided in class).	
[Others (office hour, etc.)]	
Open door policy during office hours, and anytime by email.	
	

Lecture code: N495001

Course numbering		U-LAS14 20053 LE68			
Course title <English>	Principles of Horticulture-E2 Principles of Horticulture-E2		Affiliated department, Job title,Name	Graduate School of Agriculture Associate Professor,Garry John PILLER	
Group	Natural Sciences		Field(Classification)	Biology(Issues)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Wed.3		Target year	Mainly 1st & 2nd year students	Eligible students For science students
[Outline and Purpose of the Course]					
This course is a broad introduction to the science and technology underlying the use and production of horticultural crops (fruits, vegetables, flowers, and landscape plants). It includes the structure; growth, development and manipulation of horticultural plants; environmental influences; the basic principles of propagation, outdoor and greenhouse production; and pest control.					
[Course Goals]					
Upon successful completion of this course students will:					
<ul style="list-style-type: none"> • Be able to use basic horticultural vocabulary to describe and define horticultural management activities. • Demonstrate a working knowledge of growth and development patterns of horticultural crops, and responses to environmental variables. • Be able to access and understand basic research on horticultural crops. 					
[Course Schedule and Contents]					
Course Schedule					
<ol style="list-style-type: none"> 1. Introduction/ History 2. Plant Structure & Genotype 3. Flowers & Fruits 4. Propagation 5. Light 6. Temperature 7. Water 8. Soils & Soil Management 9. Mineral Nutrition 10. Plant Hormones 11. Directing Plant Growth 12. Pest & Disease Management 13. Greenhouse Production 14. Post Harvest Handling 15. End Exam 16. Feedback 					
Continue to Principles of Horticulture-E2(2) ↓ ↓ ↓					

Principles of Horticulture-E2(2)	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Grading: Class attendance, active participation and listening quizzes (20%), weekly quizzes based on assigned pre-class reading materials (30%), in-class group presentation (20%), and final exam (30%).	
[Textbook]	
Not used	
[Reference book, etc.]	
(Reference book)	
Handouts and supplemental readings will be distributed electronically and/or as a hard copy in class.	
[Regarding studies out of class (preparation and review)]	
Students should read or listen to the required pre-class materials and submit any required assignment before the class, and come to class ready to participate in class activities. Typically, this will entail listening to a short video or podcast (10 min. or less), as well as reading a 2 or 3 page handout and be prepared to write answers to 1 or 2 questions about the reading material in the following class (15 to 20 minutes provided in class).	
[Others (office hour, etc.)]	
Open door policy during office hours, and anytime by email.	
	

Lecture code: N905001

Course numbering		U-LAS14 20054 LE68			
Course title <English>	Introduction to Ecology-E2 Introduction to Ecology-E2		Affiliated department, Job title,Name	Graduate School of Science Associate Professor,BARNETT, Craig Antony	
Group	Natural Sciences		Field(Classification)	Biology(Issues)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Mon.2	Target year	Mainly 1st & 2nd year students		Eligible students For all majors
[Outline and Purpose of the Course]					
Ecology is the investigation of how living organisms interact with their environment. We will start with the question of how individual organisms handle the difficulties of their environments, and then work up the scale of ecological organization, from looking at individuals to populations, communities, ecosystems, and global and conservation ecology. Beyond description, we will focus on simple but elegant mathematical models that explain patterns we see in the world and processes that may produce them.					
[Course Goals]					
1) To understand the principles of how organisms respond to your environments, populations grow and go extinct, species interact through food webs and mutualisms, communities are structured, and ecosystems work as systems, cycling nutrients and energy. 2) To learn about the environmental challenges that we will encounter in the coming century, and how ecological principles inform our solutions to mitigate and adapt to them. 3) To be able to describe the ideas behind mathematical ecological theories using graphs, and to appreciate their predictions and assumptions. 4) To sharpen listening skills, and interact in a classroom setting in English.					
[Course Schedule and Contents]					
1) Introduction: The Science of Ecology 2) Evolution and Ecology 3) Behavioural Ecology 4) Population Distribution, Abundance, Growth, and Regulation 5) Population Dynamics 6) Competition 7) Assignment: Analysis of Ecological Data 8) Predators and Herbivores 9) Other Species Interactions 10) Species Diversity 11) Applied Problem: Harvesting Populations 12) Applied Problem: Conservation 13) Energy and Nutrient Cycles 14) Landscape and Global Ecology 15) Final Exam 16) Feedback					
----- Continue to Introduction to Ecology-E2(2) ↓ ↓ ↓					

Introduction to Ecology-E2(2)	
[Class requirement]	
Understanding of high school biology is recommended.	
[Method, Point of view, and Attainment levels of Evaluation]	
Assessment will comprise of assignments (50%), and a final examination (50%). The final examination will test whether students have achieved the course goals. Students who are absent more than five times will not be credited.	
[Textbook]	
Not fixed	
[Reference book, etc.]	
(Reference book) Krebs, C.J. 『Ecology: The experimental Analysis of Distribution and Abundance』 (Pearson) ISBN:978-1-29202-627-5	
[Regarding studies out of class (preparation and review)]	
To achieve the course goals students should review the course materials plus optionally the according chapters in the recommended text books after each class. The time necessary for review should be in the range of 2-3 hours per class.	
[Others (office hour, etc.)]	

Lecture code: N906001

Course numbering		U-LAS14 20055 LE68			
Course title <English>	Introduction to Evolution-E2 Introduction to Evolution-E2		Affiliated department, Job title,Name	Graduate School of Science Associate Professor,BARNETT, Craig Antony	
Group	Natural Sciences		Field(Classification)	Biology(Issues)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Mon.2		Target year	Mainly 1st & 2nd year students	Eligible students For all majors
[Outline and Purpose of the Course]					
All living things have evolved from common ancestors. Evolutionary biology studies the relationships within and between groups of organisms and also the process and mechanisms that lead to changes among groups of organisms. These mechanisms include inheritance, development, and natural selection. Organisms inherit traits from their ancestors and they express their traits as they develop into adults. Natural selection causes some of these traits to change over generations. Genetics has shed much light on inheritance while developmental biology has revealed many of the mechanisms by which organisms are built. Evolutionary biology integrates the interactions is genetics and developments in populations of organisms changing over time. In this course, we move from describing the evolutionary processes that contribute to populations and species evolving over time (microevolution) to examining evolution above the species level (macroevolution). We will then integrate the two to give an understanding on the history of life.					
[Course Goals]					
1) To gain an understanding of the processes that lead to evolutionary change within and between populations and species. 2) To be aware of the contemporary criticisms of evolutionary theory and understand why these criticisms are not valid 3) To understand the contemporary debates within the field of evolutionary biology. 4) To learn that there are still many areas of vital and interesting research in evolutionary biology and also to critically think about data in order to derive valid conclusions.					
[Course Schedule and Contents]					
1) Introduction, history of the idea of evolution, and challenges to evolution 2) Microevolutionary concepts: Adaptive and neutral evolution 3) Microevolutionary concepts: The genetic impact of selection on populations 4) Microevolutionary concepts: The importance of development 5) Microevolutionary concepts: The origin, maintenance, and expression of variation 6) Sexual selection 7) The evolution of sex and genomic conflict 8) Macroevolutionary concepts: Speciation 9) Macroevolutionary concepts: Case study of Darwin' s finches 10) Macroevolutionary concepts: Phylogeny, systematics, and the comparative method in evolutionary biology 11) Key events in evolution and the fossil record 12) Coevolution 13) Human evolution 14) Evolutionary medicine 15) Final Exam					
Continue to Introduction to Evolution-E2(2) ↓ ↓ ↓					

Introduction to Evolution-E2(2)
16) Feedback
[Class requirement]
Understanding of high school biology is recommended.
[Method, Point of view, and Attainment levels of Evaluation]
Assessment will comprise of assignments (50%), and a final examination (50%). The final examination will test whether students have achieved the course goals. Students who are absent more than five times will not be credited.
[Textbook]
Not fixed
[Reference book, etc.]
(Reference book) S. C. Stearns and R. F. Hoekstra 『Evolution. 2nd Edition』 (Oxford University Press) P. R. Grant and B.R. Grant 『How and Why Species Multiple: The Radiation of Darwin' s Finches』 (Princeton University Press) D. J. Futuyma 『Evolution. 3rd Edition』 (Sinaeur Associates)
[Regarding studies out of class (preparation and review)]
To achieve the course goals students should review the course materials plus optionally the according chapters in the recommended text books after each class. The time necessary for review should be in the range of 2-3 hours per class.
[Others (office hour, etc.)]

Lecture code: N925001

Course numbering					
Course title <English>	Biological Sciences through Scientific Articles I-E2		Affiliated department, Job title, Name	Graduate School of Science	
	Biological Sciences through Scientific Articles I-E2			Associate Professor, TAKENAKA, Mizuki	
Group	Natural Sciences		Field(Classification)	Biology(Issues)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Seminar		Course offered year/period 2019 • First semester
Day/period	Tue.5		Target year	Mainly 1st & 2nd year students	Eligible students For all majors
[Outline and Purpose of the Course]					
In this seminar course, we will read various biological reviews, articles, and essays in turn in English. Students will be expected to deeply understand their contents. Supporting information like a scientific background, histories or experimental methods will be provided as needed. If necessary, short complementary comments in Japanese will be also available. Lesson materials used for the seminar course will be different from the second term.					
[Course Goals]					
Students will learn how to read scientific reviews, essays, and articles. To grasp the essence of the article and summarize it efficiently. To find interesting points in scientific articles. To find complementary articles if necessary. To read articles critically and purposefully.					
[Course Schedule and Contents]					
1) In the first week, I will give an instruction of the seminar course. I will discuss an article to show the style of presentation. Then each week, several biological articles (especially from plant science) to be prepared for a later week will be presented to one of the students, who can make the choice based on his or her preference.					
2)-14) Each student prepares a presentation about the article with support of me if necessary and presents it at the seminar in turn. Other students are expected actively to join the discussion. Complementary information for the article will be provided as needed.					
15) I will provide a course summary for the feedback session.					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
Class attendance and active participation (70%), presentation following question and answer session (30%).					
----- Continue to Biological Sciences through Scientific Articles I-E2(2) ↓ ↓ ↓					

Biological Sciences through Scientific Articles I-E2(2)	

[Textbook]	
Instructed during class Several recently published biological articles (especially on plant biology and molecular biology) will be provided as candidates at the first lesson. Students will choose one of them and in turn give a presentation on it at the class.	
[Regarding studies out of class (preparation and review)]	
Students should read the provided article in advance.	
[Others (office hour, etc.)]	
Contact: mizuki.takenaka@pmg.bot.kyoto-u.ac.jp Any questions and requests are welcome by prior arrangements via E-mail.	

Lecture code: N926001

Course numbering					
Course title <English>	Biological Sciences through Scientific Articles II-E2		Affiliated department, Job title, Name	Graduate School of Science	
	Biological Sciences through Scientific Articles I-E2			Associate Professor, TAKENAKA, Mizuki	
Group	Natural Sciences		Field(Classification)	Biology(Issues)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Seminar		Course offered year/period 2019 • Second semester
Day/period	Tue.5		Target year	Mainly 1st & 2nd year students	Eligible students For all majors
[Outline and Purpose of the Course]					
In this seminar course, we will read various biological reviews, articles, and essays in turn in English. Students will be expected to deeply understand their contents. Supporting information like a scientific background, histories or experimental methods will be provided as needed. If necessary, short complementary comments in Japanese will be also available. Lesson materials used for the seminar course will be different from the first term.					
[Course Goals]					
Students will learn how to read scientific reviews, essays, and articles. To grasp the essence of the article and summarize it efficiently. To find interesting points in scientific articles. To find complementary articles if necessary. To read articles critically and purposefully.					
[Course Schedule and Contents]					
1) In the first week, I will give an instruction of the seminar course. I will discuss an article to show the style of presentation. Then each week, several biological articles (especially from plant science) to be prepared for a later week will be presented to one of the students, who can make the choice based on his or her preference.					
2)-14) Each student prepares a presentation about the article with support of me if necessary and presents it at the seminar in turn. Other students are expected actively to join the discussion. Complementary information for the article will be provided as needed.					
15) I will provide a course summary for the feedback session.					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
Class attendance and active participation (70%), presentation following question and answer session (30%).					
----- Continue to Biological Sciences through Scientific Articles II-E2(2) ↓ ↓ ↓					

Biological Sciences through Scientific Articles II-E2(2)	

[Textbook]	
Instructed during class Several recently published biological articles (especially on plant biology and molecular biology) will be provided as candidates at the first lesson. Students will choose one of them and in turn give a presentation on it at the class.	
[Regarding studies out of class (preparation and review)]	
Students should read the provided article in advance.	
[Others (office hour, etc.)]	
Contact: mizuki.takenaka@pmg.bot.kyoto-u.ac.jp Any questions and requests are welcome by prior arrangements via E-mail.	

Lecture code: N928001

Course numbering					
Course title <English>	Introduction to Biological Data Analysis -E2		Affiliated department, Job title,Name	Graduate School of Pharmaceutical Sciences Senior Lecturer, RAKERS, Christin	
	Introduction to Biological Data Analysis-E2				
Group	Natural Sciences		Field(Classification)	Biology(Issues)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Seminar		Course offered year/period 2019 • First semester
Day/period	Thu.3		Target year	All students	Eligible students For science students
[Outline and Purpose of the Course]					
This course provides an introduction to basic data analysis techniques that are commonly applied in life science research. The first section of this course covers the theoretical basis of statistics and statistical learning. In the second part of the course, scientific research articles will be presented and discussed in class to assess how data analysis techniques can be applied in a biological research context. Prior knowledge about basic molecular biology is advantageous for scientific article review.					
[Course Goals]					
The goal of this course is to equip students with - an understanding of basic statistics and statistical learning methods - the skills to review and evaluate research articles - the ability to discuss scientific data analysis in English - statistical thinking for study design and evaluation					
[Course Schedule and Contents]					
(The order and depth of covered topics might be subject to change, depending on the number of students, the students' proficiency levels, and feedback)					
[WEEKS 01-08] THEORY The following topics are covered in this theory section: - Experimental design - Descriptive statistics - Power analysis - Probability and distributions - Hypothesis testing - Linear regression - Statistical learning methods and assessment - Clustering, networks					
[WEEKS 09-14] DISCUSSIONS Students will give presentations of research articles from life sciences (e.g. proteomics, gene expression data) that contain data analysis concepts covered in the previous theory section. Presented research articles will be discussed in class with regard to research design and biological data analysis approaches.					
----- Continue to Introduction to Biological Data Analysis-E2(2) ↓ ↓ ↓					

Introduction to Biological Data Analysis-E2(2)	

[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
60 % Attendance and active participation 40 % Presentation	
[Textbook]	
Instructed during class	
[Reference book, etc.]	
(Reference book) Articles and material will be provided in class.	
[Regarding studies out of class (preparation and review)]	
Weekly review of course content is advised. Students will need to prepare a presentation of a scientific research article.	
[Others (office hour, etc.)]	
Announced during class.	

Lecture code: N927001

Course numbering					
Course title <English>	Introduction to Computational Molecular Biology-E2		Affiliated department, Job title,Name	Graduate School of Pharmaceutical Sciences Senior Lecturer,RAKERS, Christin	
	Introduction to Computational Molecular Biology-E2				
Group	Natural Sciences		Field(Classification)	Biology(Issues)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Seminar		Course offered year/period 2019 • Second semester
Day/period	Thu.3		Target year	All students	Eligible students For science students
[Outline and Purpose of the Course]					
<p>Have you ever wondered why aspirin relieves pain or why some pesticides are toxic for insects? This course is designed to teach students how to explore such questions through computational means. Students will investigate molecular structures, functions, and interactions on an atomistic level in a playful way. Prior knowledge about basic molecular biology is advantageous. The lectures provide insights into theoretical biophysics, computer-based approaches, and molecular modelling tools. At the core of this course is a project in which students develop a research hypothesis and apply computational tools to analyze and explore a biological question of their own interest. This project will give students the opportunity to practice scientific writing and presentation skills.</p>					
[Course Goals]					
<p>Students of this course will</p> <ul style="list-style-type: none"> - gain deeper understanding about the structure and function of (macro)molecules and the theoretical basis of molecular interactions - learn how to execute and apply computational workflows for molecular analysis and visualization - become conversant with the theory of molecular modelling - learn how to write scientific reports or present scientific research results 					
[Course Schedule and Contents]					
<p>[01 - 02] Introduction to molecular structures and biological data [03] Biological databases and data formats [04] Computational biology/ molecular modelling basics [05] Proteins and their motion (molecular dynamics simulations) [06] Molecular interactions I (molecular docking simulations) [07] Molecular interactions II (3D pharmacophores) [08] Chemoinformatics/-genomics [09 - 14] Project-based counselling and discussion of questions [15] Project presentations or submission of course reports [16] Feedback</p>					
----- Continue to Introduction to Computational Molecular Biology-E2(2) ↓ ↓ ↓					

Introduction to Computational Molecular Biology-E2(2)	
[Class requirement]	
<p>Access to a computer is essential to conduct the project. The course projects will be executed in groups of 1 to 3 students. Group meetings might have to be scheduled independently and outside of class to design and execute the course projects, and prepare for the final presentation or course report.</p>	
[Method, Point of view, and Attainment levels of Evaluation]	
<p>40 % Class attendance/ participation 40 % Quality of research project 20 % Final presentation/ course report</p>	
[Textbook]	
<p>Not used. Material and articles will be provided in class.</p>	
[Reference book, etc.]	
<p>(Reference book) Material and articles will be provided in class. The following books give deeper insights into presented topics, but are no mandatory prerequisites to successfully complete the course. - Leach, A.R., 2001. Molecular modelling: principles and applications. Pearson education. ISBN: 0582382106, 9780582382107 - Schlick, T., 2010. Molecular modeling and simulation: an interdisciplinary guide: an interdisciplinary guide (Vol. 21). Springer Science & Business Media. ISBN:1441963510, 9781441963512</p>	
[Regarding studies out of class (preparation and review)]	
<p>Weekly review of course content is advised. The design and execution of the course project, as well as the preparation of the final presentation or course report, require additional time investment outside of class.</p>	
[Others (office hour, etc.)]	

Lecture code: N929001

Course numbering					
Course title <English>	Introduction to Plant Physiology-E2 Introduction to Plant Physiology-E2		Affiliated department, Job title,Name	Graduate School of Agriculture Professor, Daniel Epron	
Group	Natural Sciences		Field(Classification)	Biology(Issues)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Mon.3		Target year	Mainly 1st & 2nd year students	Eligible students For all majors
[Outline and Purpose of the Course]					
Land plants adapt to the environment and at the same time have developed distinctive structures and functions that have great influence on the environment as well. In this lecture we outline the physiological, morphological and anatomical characteristics that are the basis of the growth and survival of plants. We will discuss how these attributes are integrated and coordinated at the whole plant level to better understand the ecology of species both in their natural range and when used in agriculture and forestry. This course broadly introduces the physiological functions of plants in an ecological perspective.					
[Course Goals]					
Upon successful completion of this course, students will be able to understand the physiological processes underlying plant growth and development, how environmental factors influence these processes, and how knowledge of plant physiology is useful for crop, grassland and forest management.					
[Course Schedule and Contents]					
Course schedule:					
1. Leaf photosynthesis: adaptation to sun and shade					
2. Carbon assimilation and temperature					
3. C3 and C4 plants in an evolutionary perspective					
4. From leaf to canopy: light interception and optimization					
5. Respiration, growth and carbon use efficiency					
6. Effects of environmental conditions on plant respiration					
7. Long distance transport of carbohydrates					
8. Water in soil, cells and plants					
9. Water acquisition and water movement					
10. Hydraulic efficiency and hydraulic safety, relationship with anatomy					
11. Stomatal control and water-use efficiency					
12. Nutrient uptake and translocation					
13. Growth and allocation					
14. Storage in annual and perennial plants					
15. End of Term Exam					
16. Feedback					
----- Continue to Introduction to Plant Physiology-E2(2) ↓ ↓ ↓					

Introduction to Plant Physiology-E2(2)	
[Class requirement]	
Beneficial but not mandatory: basic knowledges in biology (high school)	
[Method, Point of view, and Attainment levels of Evaluation]	
Grading: Class attendance and participation (10%), quizzes or questions based on assigned pre-class reading materials or on previous class content (two to three in-class 30 min. tests, 30%), end of term exam (60%). In no case will English language proficiency be a criterion for evaluating students. Tests and exams are designed to allow short answers. Class attendance is expected: students who are absent more than three times without sound reasons (documented unavoidable absence) will not be credited.	
[Textbook]	
Lecture notes will be provided after each class (uploaded on KULASIS).	
[Reference book, etc.]	
(Reference book)	
W Larcher 『Physiological Plant Ecology』 (Springer) ISBN:ISBN 978-3-540-43516-7 (Recommended books and website to deepen the course content (not mandatory))	
H Lambers, FS Chapin, TL Pons 『Plant Physiological Ecology』 (Springer) ISBN:ISBN 978-0-387-78340-6 (Recommended books and website to deepen the course content (not mandatory))	
R Munns, S Schmidt, C Beveridge 『Plants in Action: a resource for teachers and students of plant science』 (http://plantsinaction.science.uq.edu.au/) (Recommended books and website to deepen the course content (not mandatory))	
[Regarding studies out of class (preparation and review)]	
Students are expected to review the course materials distributed during previous classes and to read the pre-class materials when applicable (about two hours between two classes).	
[Others (office hour, etc.)]	
Students are encouraged to ask questions and to make comments during the class. Students are welcome to arrange appointments by email, even outside the official office hour, for questions and discussion.	

Lecture code: N533001

Course numbering		U-LAS15 10002 LE58			
Course title <English>	Introduction to Earth Science A Introduction to Earth Science A		Affiliated department, Job title,Name	Graduate School of Engineering Associate Professor,FLORES GIANCARLO	
Group	Natural Sciences		Field(Classification)	Earth Science(Foundations)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Fri.2		Target year	Mainly 1st year students	Eligible students For science students
[Outline and Purpose of the Course]					
Year after year, the effects of climate change (extreme heat waves, rising sea-levels, changes in patterns of precipitation, floods, droughts, intense hurricanes, etc.) are increasingly affecting--directly and indirectly--the physical, social, and psychological health of humans.					
As a student of sciences, you will be responsible--at some point of your future professional career, be it in the public or private sector--to device strategies, methods, and/or techniques to mitigate its effects, either globally or locally. But, in order to do so, you first need to understand how our planet works, how its diverse parts are interrelated, and how changes in the working of some of its elements could disrupt complete systems.					
This lecture will introduce, therefore, the tools needed to study the Earth as a system, and will focus on three of its main subsystems (Atmosphere, Hydrosphere, and Geosphere) and their interactions in different time scales.					
[Course Goals]					
At the end of the semester, you should be able to understand the concept of systems, the basics of our planet's energy balance, and also the principles behind of the behavior--as systems and subsystems--of the Atmosphere, the Hydrosphere, and the Geosphere.					
[Course Schedule and Contents]					
The Earth System is broadly divided into four subsystems: Atmosphere, Hydrosphere, Geosphere, and Biosphere. There is exchange of both matter and energy within those subsystems, in different time scales.					
The main contents of this lecture are:					
<ol style="list-style-type: none"> 1. Introduction to Earth Systems 2. Global Energy Balance 3. Atmosphere 4. Hydrosphere 5. Geosphere 					
The contents of each topic will be delivered in two or three lectures each. At the end of each topic, you will be requested to submit a corresponding report. At the end of the semester we will have one final feedback session (details will be given in class).					
Continue to Introduction to Earth Science A(2) ↓ ↓ ↓					

Introduction to Earth Science A(2)	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Submission of a report will be requested after finishing each of the main five topics. Deadlines will be strictly enforced. No exams will be taken. Details will be explained during the first lecture.	
[Textbook]	
Handouts will be provided for each class.	
[Reference book, etc.]	
(Reference book)	
Lee R. Kump, James F. Kasting, Robert G. Crane 『The Earth System』 ISBN:9780321597793	
Brian J. Skinner, Barbara Murck 『The Blue Planet : An Introduction to Earth System Science』 ISBN: 9780471236436	
Frederick K. Lutgens, Edward J. Tarbuck 『The Atmosphere : An Introduction to Meteorology』 ISBN: 9780321756312	
Edward J. Tarbuck, Frederick K. Lutgens 『Earth : An Introduction to Physical Geology』 ISBN: 9780321814067	
All additional reference books are available at the Library of the School of Global Engineering, in Yoshida Campus, and also at other Kyoto University libraries. Previous editions of the same books can also be used.	
[Regarding studies out of class (preparation and review)]	
Handouts will be provided at the beginning of each session. You are expected to use them to follow the lectures, to take notes, and as a starting point to further your personal self-learning.	
At the end of each one of the five topics in which this class is divided, you will be given one week to submit a report answering four to five questions specific to the topic. Answering them will require doing some additional research on the recommended bibliography or other resources. Full references will be expected.	
[Others (office hour, etc.)]	
Office hours will be provided during the first lecture.	
	

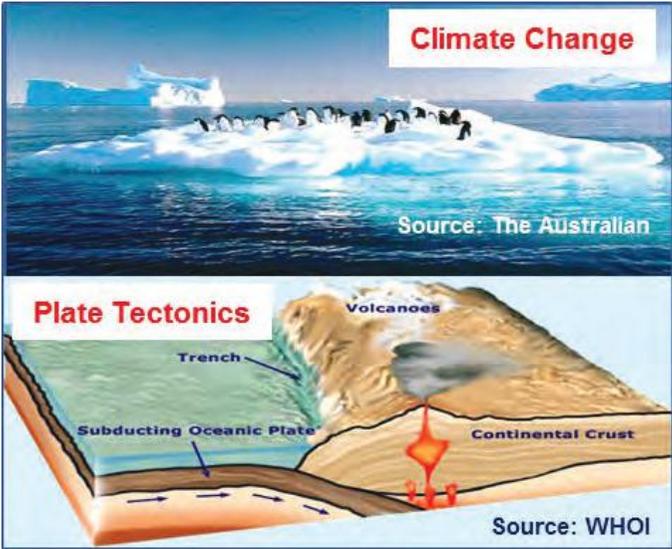
Lecture code: N560001

Course numbering		U-LAS15 10004 LE58			
Course title <English>	Introduction to Earth Science B-E2 Introduction to Earth Science B-E2		Affiliated department, Job title,Name	Graduate School of Science Professor,ZWINGMANN, Horst Friedrich August	
Group	Natural Sciences		Field(Classification)	Earth Science(Foundations)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Wed.1		Target year	Mainly 1st & 2nd year students	Eligible students For science students
[Outline and Purpose of the Course]					
The Earth System is divided into four subsystems: atmosphere, hydrosphere, geosphere and biosphere. This lecture focuses on the first three subsystems and introduces their interactions in the different time scales. In particular, this lecture will be outlined interaction and material circulation between these three subsystems, and transition and change in the global environment over the 4.6 billion year history of the Earth.					
[Course Goals]					
The objective of this course is to develop an understanding of fundamental geological concepts and processes of plate tectonics and its influences on the dynamic Earth. The lectures comprise a general introduction to plate tectonics theory and selected detailed field case studies from Japan and the world.					
At the end of the semester, students should be able to understand fundamental geological concepts and processes, within an Earth System context, and how the application of physical, chemical and biological sciences can be applied to solve geological problems.					
[Course Schedule and Contents]					
The Earth System is broadly divided into four subsystems: atmosphere, hydrosphere, geosphere and biosphere. There is exchange of both matter and energy within those subsystems, in different time scales.					
The main contents of this lecture are:					
<ol style="list-style-type: none"> 1. Interactions and material circulation among these three subsystems of the Earth System 2. Consist of the global environment <ul style="list-style-type: none"> • Formation of the Earth • Environment of the early Earth 3. The climate change in Earth's history <ul style="list-style-type: none"> • Ice Age vs. No Ice Age • Glacial/Interglacial periods fluctuations • Climate change after the last glacial period 					
The contents of each topic will be delivered in three lectures.					
----- Continue to Introduction to Earth Science B-E2(2) ↓ ↓ ↓					

Introduction to Earth Science B-E2(2)	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Students are able to (1) demonstrate understanding of basic geological processes and relationships at global to local scale including how this knowledge can be applied to issues of relevance to Japan; 2) identify and interpret common geological features and processes within the Earth System context and (3) demonstrate an understanding of the complex Earth System and its processes at a regional and global scale now, in the past, and in the future. The evaluation method comprises (1) an in class assignment (40%) and (2) written examination during the official examination term (60%).	
[Textbook]	
Not fixed	
[Reference book, etc.]	
(Reference book) Introduced during class	
[Regarding studies out of class (preparation and review)]	
This course has been designed to allow students to integrate the concepts covered in lectures with own readings. A joint group project is developed by students based on data from a range of sources. Students will be supported throughout the project by discussions with your lecturer and associated students.	
[Others (office hour, etc.)]	
to be confirmed	

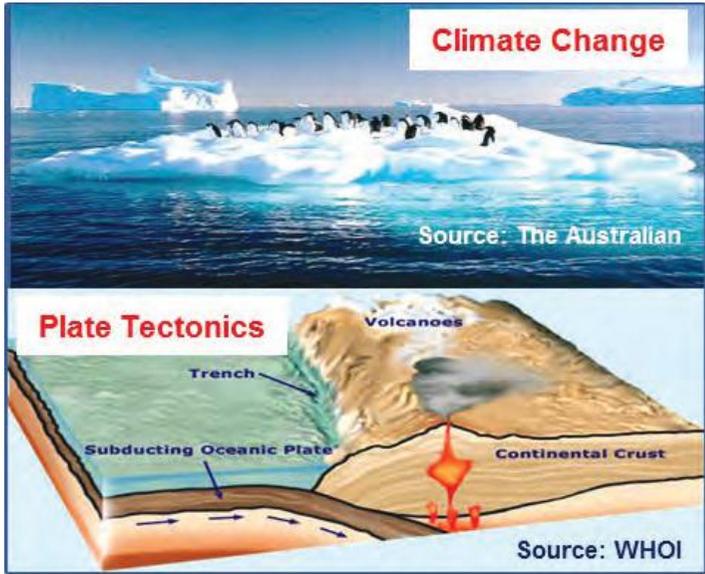
Lecture code: N563001

Course numbering		U-LAS15 10008 LE58			
Course title <English>	How the Earth Works I-E2 :Environmental Change		Affiliated department, Job title,Name	Graduate School of Science Associate Professor,ENESCU, Bogdan Dumitru	
	How the Earth Works I-E2 :Environmental Change				
Group	Natural Sciences		Field(Classification)	Earth Science(Foundations)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Thu.4		Target year	All students	Eligible students For all majors
[Outline and Purpose of the Course]					
I will outline the environmental changes that have occurred during the Earth history, with a special focus on climate change. The lectures will address the main factors that control the climate, as well as their interaction. We will discuss in particular the human impact on environment and its consequences. To facilitate understanding and encourage active participation during the class, some materials and vocabulary in Japanese will be also provided.					
[Course Goals]					
The Earth Climate is the result of complex interactions among the components that make up the Earth: the Atmosphere (layer of gases), the Hydrosphere (water), the Lithosphere (or solid Geosphere), and the Biosphere (all living organisms). By learning about these interactions that take place on a variety of time scales, the students will be able to understand why and how the Earth Climate continuously changes.					
[Course Schedule and Contents]					
During its history of 46 billion years, the Earth climate changed profoundly. At the scale of hundreds of millions of years, the Earth is now during an "Ice Age" period. However, at a 'closer' look, at the scale of hundreds of thousands of years, we are at present in a period of relative warming known as "interglacial period". From the early part of the 19th century, the human activity started having a pronounced impact on climate, being likely responsible for the current "global warming", due to high emission of greenhouse gases.					
Contents (tentative):					
<ul style="list-style-type: none"> - Components of the climate system; - Current global environment: the Earth's energy balance; - Origins and evolution of the Atmosphere, Hydrosphere and Continents; - Climate change factors: the carbon cycle; - Long-term and short-term climate changes from past to present; - 20th century warming: fingerprints of human-related global climate change. 					
There will be 2-3 lectures for each of the topics above.					
[Class requirement]					
None					
Continue to How the Earth Works I-E2 :Environmental Change(2) ↓ ↓ ↓					

How the Earth Works I-E2 :Environmental Change(2)	
[Method, Point of view, and Attainment levels of Evaluation]	
Evaluation will be based on class attendance and active participation (30%), class-room exercises (30%) and a final examination (40%).	
[Textbook]	
A pack of class materials (mainly PowerPoint files) will be provided to students. The following textbook is recommended, but not required: Lee R. Kump, James F. Kasting and Robert G. Crane, The Earth System (3rd edition), Prentice Hall, ISBN: 978-0321597793, 2009.	
[Reference book, etc.]	
(Reference book) John P. Grotzinger and Thomas H. Jordan 『Understanding Earth (7th edition)』 (W.H. Freeman and Company) ISBN:978-1-4641-3874-4	
[Regarding studies out of class (preparation and review)]	
Students will be expected to do readings in preparation for the class. Class-related materials should be downloaded and printed out by students, from a dedicated website, which will be announced at the beginning of the lecture.	
[Others (office hour, etc.)]	
Students can meet me during office hours with prior appointment. The number of students who can take this class will be limited to a maximum of 60 students.	
	

Lecture code: N564001

Course numbering		U-LAS15 10010 LE58			
Course title <English>	How the Earth Works II-E2 :Earth's History		Affiliated department, Job title,Name	Graduate School of Science Associate Professor,ENESCU, Bogdan Dumitru	
	How the Earth Works II-E2 :Earth's History				
Group	Natural Sciences		Field(Classification)	Earth Science(Foundations)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Mon.5		Target year	All students	Eligible students For all majors
[Outline and Purpose of the Course]					
The Earth was born as a "fireball" of mixed molten rock and metal; after subsequent hardening, it was very similar with the other "inner" planets: Mars, Venus and Mercury. However, Life was formed only on planet Earth. Why Earth followed a different destiny from other planets? During this lecture we will follow the history of Earth's evolution, from its formation until present days. To facilitate understanding and encourage active participation during the class, some materials and vocabulary in Japanese will be also provided.					
[Course Goals]					
The student will familiarize with the most important events in the Earth history and will be able to understand the formation and structure of planet Earth.					
[Course Schedule and Contents]					
<ul style="list-style-type: none"> - Formation of the Solar System and the Earth; - Structure of the Earth; - Beginning of Plate Tectonics; - Birth and evolution of Life; - Atmosphere evolution: oxygen and carbon dioxide; - The supercontinent cycle; - Continent fragmentation and magmatic activity; - Macro-evolution of Life and extinction episodes. 					
For each of the topics above, we plan 1-2 classes.					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
Evaluation will be based on class attendance and active participation (30%), class-room exercises (30%) and a final examination (40%).					
Continue to How the Earth Works II-E2 :Earth's History(2) ↓ ↓ ↓					

How the Earth Works II-E2 :Earth's History(2)	
[Textbook]	
A pack of class materials (mainly Power Point files) will be provided to students. The following textbook is recommended, but not required: C.H. Langmuir and W. Broecker, How to Build a Habitable Planet: The Story of Earth from Big Bang to Humankind, Princeton University Press, 2012, ISBN: 9781400841974 (*Japanese edition available).	
[Reference book, etc.]	
(Reference book) John P. Grotzinger and Thomas H. Jordan 『Understanding Earth (7th edition)』 (W.H. Freeman and Company) ISBN:978-1-4641-3874-4	
[Regarding studies out of class (preparation and review)]	
Students will be expected to do readings in preparation for the class. Class-related materials should be downloaded and printed out by students, from a dedicated website, which will be announced at the beginning of the lecture.	
[Others (office hour, etc.)]	
Students can meet me during office hours with prior appointment. The number of students who can take this class will be limited to a maximum of 60 students.	
	

Lecture code: N565001

Course numbering		U-LAS15 10012 LE56			
Course title <English>	Introduction to General Astronomy-E2 Introduction to General Astronomy-E2		Affiliated department, Job title,Name	Graduate School of Science Senior Lecturer,LEE, Shiu Hang	
Group	Natural Sciences		Field(Classification)	Earth Science(Foundations)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Wed.4		Target year	All students	Eligible students For all majors
[Outline and Purpose of the Course]					
The quest to understand our origins, the origins of the universe is probably one of the oldest of human kind. In this course the latest advances in our knowledge of the universe are learned in plain language. The spatial and temporal scales of the universe and the key components (planets, stars, and galaxies, and their structures) are described in detail, and the basic techniques and logic employed in astronomical science are discussed.					
[Course Goals]					
To obtain an overview understanding of the universe currently obtained by humankind, and to learn the basics of astronomical observations and theories employed in discoveries about the cosmos. Through the above, students will cultivate in themselves an scientific attitude which can be applied in their daily life and future career.					
[Course Schedule and Contents]					
The following topics will be introduced (but not necessarily in this order): 1. Overview of modern astronomy and astrophysics 2. Planets, moons and other objects in the Solar System 3. Formation of planetary systems 4. Observation of exo-planets 5. Our Sun 5. Stars 6. Stellar evolution (low-mass stars and massive stars) 7. Supernova explosions 8. Neutron stars and pulsars 9. Blackholes and general relativity 10. Active galaxies 11. Gamma-ray bursts Each item above will be covered in 1 to 1.5 lectures, except stellar evolution which will be covered in 2 lectures.					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
Evaluation based on: 1) Weekly online homework (due every Tuesday), and 2) Class attendance (taken after registration period)					
----- Continue to Introduction to General Astronomy-E2(2) ↓ ↓ ↓					

Introduction to General Astronomy-E2(2)	
(Details are explained during class)	
[Textbook]	
Instructed during class	
[Reference book, etc.]	
(Reference book) Freedman, Geller and Kaufmann 『Universe』 (W. H. Freeman) ISBN:1319042384 (Not necessarily the 10th edition)	
(Related URL) https://sites.google.com/view/kus-astro101e (Lecture notes, homework and announcements can be found here)	
[Regarding studies out of class (preparation and review)]	
Read the lecture notes, online materials and reference book	
[Others (office hour, etc.)]	
Students are encouraged to ask questions during the lectures, and are welcome to contact the professor by email outside of class hours.	

Lecture code: N566001

Course numbering		U-LAS15 10014 LE58			
Course title <English>	Science on Water, Soil and Ecosystems-E2 Science on Water, Soil and Ecosystems-E2		Affiliated department, Job title,Name	Graduate School of Agriculture Assistant Professor, VILAYVONG, Khonesavanh	
Group	Natural Sciences		Field(Classification)	Earth Science(Foundations)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Thu.2		Target year	Mainly 1st & 2nd year students	Eligible students For all majors
[Outline and Purpose of the Course]					
Similar to the acquisition of basic sciences of physics, chemistry, and biology, this course introduces students to basic sciences, concepts, and applications of three primary earth system components: water, soil and ecosystems. Knowledge of interaction among these components is vital for scientific observation and interpretation of environmental problems, which will eventually lead to science-based solutions. The outcome of this course could serve the interest students as a bridge to pursue more complex issues in advanced fields of environmental science.					
[Course Goals]					
1. To introduce students basic science, concepts and applications of soil, water, and ecosystems for solving environmental issues. 2. To develop academic, technical and communication skills of the interested students on particular topics of water, soil, and ecosystems.					
[Course Schedule and Contents]					
1. Introduction 2. Environment and sustainability 3. Water resource and supply 4. Water properties and behavior 5. Water pollution, sources and characteristics 6. Water treatment processes 7. Wastewater and treatment processes 8. Nature and properties of soils (soil physics) 9. Nature and properties of soils (soil chemistry) 10. Nature and properties of soils (soil biology) 11. Soil contamination and waste disposal 12. Ecosystems and ecosystem services 13. Environmental assessment 14. Self study and revision week 15. Examination 16. Feedback					
----- Continue to Science on Water, Soil and Ecosystems-E2(2) ↓ ↓ ↓					

Science on Water, Soil and Ecosystems-E2(2)	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Students' evaluation are conducted on the performance basis on (1) applying knowledge through answering mini-quizzes (20%); (2) developing scientific communication skills through writing summary reports of book chapters, research papers and oral presentation (30%); (3) writing a short essay of a case study using critical & problem-solving skills (10%) (4) final examination (40%)	
[Textbook]	
Instructed during class Students are highly encouraged to develop data collection skills by visiting various sources of study materials such as libraries, online sources, reference books, journals, or articles. The collected materials can enhance students' performance not only on the knowledge of the introduced topics, but also interdisciplinary topics that uses knowledge from this course.	
[Reference book, etc.]	
(Reference book) Daniel D. Chiras 『Environmental Science (10th Ed)』 (Jones and Bartlett Learning) ISBN:978-1-284-05735-5 (Not all chapters are covered in the course (available in library)) Neal S. Eash, Thomas J. Sauer, Deb O'Dell, Evah Odoi, Mary C. Bratz 『Soil Science Simplified (6th Ed)』 (Wiley-Blackwell) ISBN:978-1-118-54069-5 (Not all chapters are covered in the course (available in library)) Frank R. Spellman 『The Science of Water: Concepts and Applications (3rd Ed)』 (CRC Press) ISBN: 9781482242935 (Not all chapters are covered in the course (available in library)) Additional reading materials will occasionally be introduced in some lectures.	
[Regarding studies out of class (preparation and review)]	
Students are expected to be independent in finding online resources to attain relevant issues and to enhance student knowledge and understanding on the subject.	
[Others (office hour, etc.)]	
Prior arrangement is highly necessary, preferably email notice is recommended before any consultation on the subject.	

Lecture code: N562001

Course numbering		U-LAS15 20002 LE58			
Course title <English>		Field Earth Science-E2 Field Earth Science-E2		Affiliated department, Job title,Name Graduate School of Science Professor,ZWINGMANN, Horst Friedrich August	
Group	Natural Sciences		Field(Classification)	Earth Science(Development)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Wed.2		Target year	2nd year students or above	Eligible students For science students
[Outline and Purpose of the Course]					
Understanding the past earth activities and its geological records provides essential information to predict development and environmental change of the earth. Past earth activities can be investigated through geological field studies. This lecture is designed to understand the role of field work studies based on traditional to modern earth scientific methods.					
[Course Goals]					
The objective of this course is to develop an understanding of fundamental geological concepts and processes of plate tectonics and its influences on the dynamic Earth. The lectures comprise a general introduction to plate tectonics theory and selected detailed field case studies from Japan and the world.					
[Course Schedule and Contents]					
This lecture is designed to teach the essence of geological field surveys and studies. The main concept of the developing earth is based on the theory of plate tectonics. This lecture demonstrates how geological information obtained by field studies enables earth scientists to establish the plate tectonics theory.					
1. General introduction of the significance of the field survey correlated with the plate tectonics theory. (2 times)					
2. Understanding time scale which produce various geological phenomenon. (2 times)					
3. Introduction of development the geology around Kyoto, accretional complex. (2 times)					
4. case studies (8 times)					
- Antarctica					
- North polar-region					
- Himalaya					
- Volcanic chains in the circum Pacific region					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
Students are able to (1) demonstrate knowledge of geological techniques relevant to the plate tectonics theory; and(2) identify and interpret common minerals, rocks, fossils and tectonic structures and interpret their formation; and (3) read and interpret basic geological maps. The evaluation method comprises (1) an in class assignment (40%) and (2) written examination during the official examination term (60%).					
----- Continue to Field Earth Science-E2(2) ↓ ↓ ↓					

Field Earth Science-E2(2)	
[Textbook]	
Not fixed	
[Regarding studies out of class (preparation and review)]	
This course has been designed to allow students to integrate the concepts covered in lectures with own readings. A joint group project is developed by students based on data from a range of sources. Students will be supported throughout the project by discussions with your lecturer and associated students.	
[Others (office hour, etc.)]	
to be confirmed	

Lecture code: N537001

Course numbering		U-LAS15 20007 LE58			
Course title <English>	Introduction to Engineering Geology		Affiliated department, Job title,Name	Graduate School of Engineering Associate Professor,FLORES GIANCARLO	
Group	Natural Sciences		Field(Classification)	Earth Science(Development)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Thu.3		Target year	Mainly 2nd year students	Eligible students For science students
[Outline and Purpose of the Course]					
Geology comes from the Greek geo, "Earth", and logos, "discourse". This class provides a basic knowledge of our planet's components (matter, minerals, rocks, etc.) and their main processes (mineral formation, plate tectonics, volcanic activity, earthquakes, etc.) from the viewpoint of engineering.					
The correct understanding of the Earth and its many interacting parts, in different physical and time scales, using the basic knowledge and principles of geology, will help us confirm that all important geological factors are adequately considered when designing, constructing, and operating engineering works.					
[Course Goals]					
By the end of the semester, you should be able to not only understand and have a basic knowledge of geology, but also to think about its application when designing, constructing, and operating engineering works, when using natural Earth resources, and when trying to solve geoenvironmental problems.					
[Course Schedule and Contents]					
The main contents of this lecture are:					
<ol style="list-style-type: none"> 1. Introduction to Engineering Geology (Guidance, Introduction to Engineering Geology, Earth Science, Plate Tectonics) 2. Earth Matter (Matter and Minerals, Igneous Rocks, Volcanic Activity, Weathering, Sedimentary Rocks, Metamorphism, Metamorphic Rocks) 3. Geologic Time (Geologic Time) 4. Plate Tectonics and Mass Wasting (Crustal Deformation and Earthquakes, Earth's Interior, Divergent Boundaries and Ocean Floor, Convergent Boundaries, Mountains) 5. Water and the Geosphere (Running Water, Groundwater, Glaciers and Glaciation, Deserts) 6. Earth Resources (Energy and Mineral Resources) 					
The contents of each topic will be delivered in two or three lectures each.					
[Class requirement]					
None					

Continue to Introduction to Engineering Geology(2) ↓ ↓ ↓					

Introduction to Engineering Geology(2)	
[Method, Point of view, and Attainment levels of Evaluation]	
Grading will be based on weekly quizzes (30%, lowest score is eliminated), a midterm report (30%), and a final exam (40%)	
[Textbook]	
Not used	
[Reference book, etc.]	
(Reference book)	
Edward J. Tarbuck, Frederick K. Lutgens 『Earth - An Introduction to Physical Geology』 ISBN: 9780321814067	
Stephen Marshak 『Essentials of Geology』 ISBN:9780393919394	
Edward A. Keller 『Introduction to Environmental Geology』 ISBN:9780132251501	
Lee R. Kump, James F. Kasting, Robert G. Crane 『The Earth System』 ISBN:9780321597793	
Brian J. Skinner, Barbara Murck 『The Blue Planet : An Introduction to Earth System Science』 ISBN: 9780471236436	
Kent C. Condie 『Earth as an Evolving Planetary System』 ISBN:9780123852274	
All reference books are available at the Library of the School of Global Engineering, at the Main Yoshida Campus Library, and/or at other Kyoto University libraries. Previous editions of the same books can also be used.	
[Regarding studies out of class (preparation and review)]	
During the Guidance (first class of the semester), you will be provided with a list of research topics, minimum questions to answer, and a list of initial resources to find the corresponding information, for all the scheduled sessions of the semester. You are expected to research these topics ON YOUR OWN and come prepared to the corresponding class.	
At the beginning of every class, individual and group quizzes will be given to test the self-acquired knowledge.	
[Others (office hour, etc.)]	
Office hours will be provided during the first lecture.	
	

Lecture code: N561001

Course numbering		U-LAS15 20009 SE58					
Course title <English>		Advanced Practice of Earth Science-E2 Advanced Practice of Earth Science-E2		Affiliated department, Job title,Name		Graduate School of Science Professor,ZWINGMANN, Horst Friedrich August	
Group		Natural Sciences		Field(Classification)		Earth Science(Development)	
Language		English		Old group		Group B	
				Number of credits		4	
Hours		60		Class style		Seminar	
				Course offered year/period		2019・Intensive, Second semester	
Day/period		Intensive March 8-12		Target year		Mainly 2nd year students	
				Eligible students		For science students	
[Outline and Purpose of the Course]							
PLEASE NOTE:Due to ongoing safety issues caused by earthquakes / volcanic eruptions in Kyushu alternative fieldwork areas are explored if required. Depending on the situation, the excursion plan might be changed.							
A series of "observations and exercises" will be conducted for individual groups consisting of several attendees. Each attendee is requested to do the observations and exercises during field work and to analyze the obtained data, together with other students. Additional observations and exercises will be planned and conducted where necessary. The course is designed so that each attendee can experience and participate in geological scientific research.							
[Course Goals]							
PLEASE NOTE: Due to ongoing safety issues caused by earthquakes / volcanic eruptions in Kyushu alternative fieldwork areas are explored if required. Depending on the situation, the excursion plan might be changed.							
Collection and interpretation of geological data in the field are fundamental skills for a professional earth scientist. This course develops and extends field skills through a 5-day field trip to Kyushu March 08-12,2020. The field trip challenges students to collect high quality field data with which to interpret the geological processes over a wide time range in the Beppu and Kuju area, central Kyushu.							
At the end of the class, students should be able to understand fundamental geological concepts and processes, within an Earth System context, and how the application of physical, chemical and biological sciences can be applied to solve geological problems.							
[Course Schedule and Contents]							
PLEASE NOTE: Due to ongoing safety issues caused by earthquakes / volcanic eruptions in Kyushu alternative fieldwork areas are explored if required. Depending on the situation, the excursion plan might be changed.							
Preparation day tbc in 02/2020: 13:00-16:00: Introduction seminar at Kyoto University Yoshida campus (office 376) prior to the excursion to meet students and provide them with a brief background of the course.							
Day 1: Sunday March 08, 2020: ~13:00 meet at Beppu Geothermal Research Laboratory, 3088-176, Noguchibaru, Beppu, Oita, 874-0903, Japan. Excursion start : Beppu Graben: visit active fault scarf, geothermal plant and sources of hot springs.							
Continue to Advanced Practice of Earth Science-E2(2) ↓ ↓							

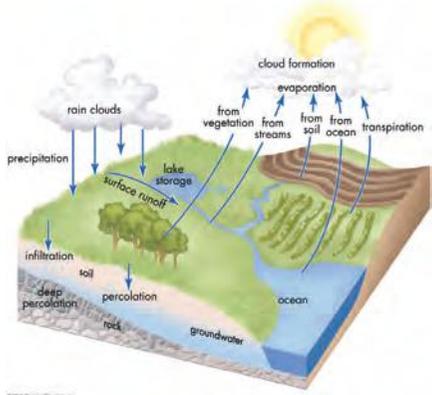
Advanced Practice of Earth Science-E2(2)	

Day 2: Monday March 09, 2020: Aso: visit caldera and erupting volcano, Harajiri waterfall and outcrops of the youngest pyroclastic flow deposits (Aso-4) (Japan Geoparks).	
Day 3: Tuesday March 10, 2020: Travel Beppu to Himeshima Island and return: visit ancient volcano, green obsidian, pyroclastic surge deposits, magmatic soda springs and metamorphic rock xenoliths.	
Day 4: Wednesday March 11, 2020: Radon measurements along the Horita#8211Fault , Beppu.	
Day 5: Thursday March 12, 2020: Reporting and presentation day at Beppu Geothermal centre, summary seminar. Afternoon travel Beppu-Kyoto.	
[Class requirement]	
Open to all students with science background (2 year) and international students. If more than 10 students apply a lottery will conducted to select participants. All travelling cost from Kyoto to Beppu and return should be paid by attendees. Accommodation in Beppu at the Beppu Geothermal Research Laboratory will be organised by Kyoto University teachers at an estimated cost of ca. 3000 Yen for 5 nights. All attendees have to join the necessary insurance; e.g., Personal Accident Insurance for Students Pursuing Education and Research (Gakkensai) [学生教育研究災害傷害保険 (学研災)]	
[Method, Point of view, and Attainment levels of Evaluation]	
Students are able to (1) collect field data and integrate with regional datasets to interpret a complex geological area; (2) critically appraise existing reports with new field data; (3) interpret regional datasets; and (4) present results in a written report and a presentation. The evaluation method comprises (1) a written report (60%) and (2) presentation (40%).	
※なお、単位認定は翌年度となる可能性がある。進級・卒業判定がかかる学生はこのことに注意すること。	
[Textbook]	
Instructed during class	
[Reference book, etc.]	
(Reference book)	
Introduced during class	
[Regarding studies out of class (preparation and review)]	
This course has been designed to allow students to integrate the concepts covered in lectures with own readings. A joint group project is developed by students based on data from a range of sources. Students will be supported throughout the project by discussions with your lecturer and associated students.	
[Others (office hour, etc.)]	
In February 2020 (day tbc in 01/2020 after student list is confirmed) a half day seminar at Kyoto Uni Yoshida campus (office 376) is scheduled prior to the excursion to meet students and provide an introduction of the field course.	

Lecture code: N559001

Course numbering		U-LAS15 20010 LE58			
Course title <English>	Introduction to Hydrology-E2 Introduction to Hydrology-E2		Affiliated department, Job title,Name	Disaster Prevention Research Institute Associate Professor,Sameh Kantoush	
Group	Natural Sciences		Field(Classification)	Earth Science(Development)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Tue.4		Target year	Mainly 1st & 2nd year students	
[Outline and Purpose of the Course]					
The aim of this course is to build basic understandings to study utilization of natural resources and natural disasters in the earth. This lecture explains water availability in the earth, basic hydrological phenomena to create water circulation and water budget. Based on this basic knowledge, all students will study current technical issues to be solved, and create basis for mutual international understandings by comparing Japan and foreign countries case studies.					
[Course Goals]					
The goals are to develop an understanding of how hydrology and hydrological applications can be used to secure water for people, based on a sound scientific understanding of hydrologic and hydraulic processes. This includes protection from excess water and from water shortage, as well as providing sufficient water for a sustainable environment.					
Course Outcomes: The aim of this course is to introduce the basic elements of hydrologic cycle for surface and groundwater systems. At the end of this course the student will be able to: - be aware of water resources issues in national and global scale, - be able to qualitatively and quantitatively describe the main processes in the hydrologic cycle, and surface and ground water hydrology - be able to provide solutions for typical water resources problems found in practice;					
PRACTICAL SKILLS: On completion of this course students should be able to: - Calculate the water budget of a watershed; - Calculate average precipitation stream flow and stage discharge relationship; - Calculate infiltration employing several models; - Estimate evaporation rates and evapotranspiration; - Define the relationship between rainfall and hydrograph analysis; - Measure the flow discharge and velocity in the stream					
[Course Schedule and Contents]					
Week 1: Introduction: Hydrological Cycle and Processes Week 2: Precipitations Forms, Types, and Rainfall Measurements Week 3: Hydrologic Abstractions Week 4: Areal Precipitation and Data Analysis Week 5: Infiltration: Process, Measurement, and Estimation Week 6: Evaporation: Process, Measurement, and Estimation					
Continue to Introduction to Hydrology-E2(2) ↓ ↓					

Introduction to Hydrology-E2(2)
Week 7: Hydrology of Japan and water resources sustainability Week 8: Runoff and Hydrographs Week 9: Groundwater Hydrology Week10: Groundwater Hydrology Week11: Stream Flow Measurements Week12-13: Flooding Week14: Monitoring Techniques Week15: Final Report Week16: Feedback
[Class requirement]
None
[Method, Point of view, and Attainment levels of Evaluation]
Student will be assessed in the course based on quiz during regular lectures, reports, in class assessment and active participation (40%) and a final report (60%).
[Textbook]
Martin R. Hendriks 『Introduction to Physical Hydrology』 (Oxford) ISBN:978-0-19-929684-2 Warren Viessman, Gary Lewis 『Introduction to Hydrology』 (Prentice Hall) ISBN:978-0673993373 P. Jaya Rami Reddy 『A Text Book of Hydrology』 (University Science Press) ISBN:978-9380856049
[Regarding studies out of class (preparation and review)]
Students are requested to read carefully listed textbook and access to case studies on each hydrological process through website and related literatures.
[Others (office hour, etc.)]
Class participation and questions are very welcome during the lectures or at the end of the lecture. The schedule of office hours will be announced later. Moreover, if you have extra question, students may contact me by email.



Lecture code: N558001

Course numbering		U-LAS15 20011 LE58			
Course title <English>	Introduction to Mineral Resources-E2 Introduction to mineral resources-E2		Affiliated department, Job title,Name	Graduate School of Energy Science Associate Professor,MCLELLAN, Benjamin	
Group	Natural Sciences		Field(Classification)	Earth Science(Development)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Thu.2		Target year	Mainly 1st & 2nd year students	
[Outline and Purpose of the Course]					
Minerals are important for society to function, but it is useful to know how they are formed, extracted and converted into useful products. This course will introduce students to earth sciences, with a focus on mineral resources, as well as looking at how these resources are converted into useful materials and what wastes are produced in the process.					
[Course Goals]					
From this course the students will be expected to know how mineral resources are situated geologically, how they are measured, how mining and minerals processing leads to final products that are used in society and what the implications of the extraction of minerals are for the environment.					
[Course Schedule and Contents]					
This course will cover the following topics:					
Week 1 - 4 (Basics of Geology and Earth Sciences with a focus on mineral resources)					
1. Introduction to earth sciences and the importance for minerals resources					
2. Geology and the lithosphere - geological time and formations					
3. Processes of rock and mineral formation					
4. Mineralogy					
Week 5-14 (Minerals resources and their extraction, transformation into mineral products)					
5. Reserves, resources, geological uncertainty and economics					
6. Mineral deposits and mining					
7. Beneficiation of ore and minerals processing - general considerations					
8. Manufacturing mineral products - general considerations					
9. Critical minerals methodologies					
10. Critical minerals case study 1 - Rare earths / rare metals					
11. Critical minerals case study 2 - Base metals					
12. Waste, recycling and environmental impacts					
13. Social impacts of minerals - Dutch disease and conflict					
14. Future mining - what comes next?					
[Class requirement]					
None					
Continue to Introduction to Mineral Resources-E2(2) ↓ ↓					

Introduction to Mineral Resources-E2(2)

[Method, Point of view, and Attainment levels of Evaluation]

The course will be assessed based on participation and in-class exercises (30%); a final presentation (10%); and final assignment (60%).

[Textbook]

W.J. Rankin, 2011 『Minerals, metals and sustainability』 (Textbook is not necessary, but is a very useful reference and will be referred to in class.)

[Reference book, etc.]

(Reference book)

Edward J. Tarbuck, Frederick K. Lutgens, Dennis G Tasa; 2011 『Earth Science (13th Edition)』
 Graham R. Thompson, Jon Turk; 2009 『Earth Science and the Environment (4th edition)』
 Jeremy.P. Richards, 2009 『Mining, society and a sustainable world』

[Regarding studies out of class (preparation and review)]

Class materials will be loaded on PandA and pre-reading may be required.
 Final assessment is typically a report, which will require a number of hours for research and writing.

[Others (office hour, etc.)]

Lecture code: T008001

Course numbering		U-LAS30 10008 SE11			
Course title <English>	Practice of Basic Informatics		Affiliated department, Job title, Name	Graduate School of Engineering Associate Professor, FLORES GIANCARLO	
	Practice of Basic Informatics			Graduate School of Engineering Assistant Professor, KITAOKA TAKAFUMI	
		Not fixed			
Group	Informatics		Field(Classification)	(Foundations)	
Language	English		Old group		Number of credits 2
Number of weekly time blocks	1	Class style	Seminar		Course offered year/period 2019 • First semester
Day/period	Tue.4		Target year	Mainly 1st year students	Eligible students For science students
[Outline and Purpose of the Course]					
The aim of this class is to learn the basic computing skills needed to operate computer software at Kyoto University. A Linux-based OS (Ubuntu) will be used in virtual computers (VDI) administrated by the Institute for Information Management and Communication (IIMC).					
[Course Goals]					
At the end of the semester, you should be able to understand the basics of using virtual computers (VDI) at Kyoto University, Linux operation, file management, how to create documents using Latex, how to create 2D and 3D graphics using Gnuplot, and the principles of programming in Fortran.					
[Course Schedule and Contents]					
The following topics will be covered--each one--in 1-3 weeks:					
<ol style="list-style-type: none"> 1. GUIDANCE. Connecting to VDI. Using a Terminal. Basic operations. 2. LIBRARY. Accessing library resources. Searching. Reference managers. 3. LINUX. Introduction to LINUX commands. File system. Redirections. Pipes. GREP. Shell scripts. 4. LATEX. Introduction to Latex. Typsetting. Mathematical formulas. 5. GNUPLLOT. Creating 2D and 3D graphics with Gnuplot. 6. FORTRAN. Introduction to programming. Intrinsic functions. Iterations. Conditionals. 					
A brief explanation of the main topic will be given at the beginning of each session, and then you will have the rest of the class to practice the acquired skills solving a given problem under the guidance of the instructor.					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
Grading will be based on class participation (20%), weekly exercises (30%), and a final report (50%). This class will have no final exam.					
For class participation you will be evaluated on your comments/answers/discussions with instructors, on your collaborative spirit when working in group with other students, and on your suggesting of new ways to understand the topics discussed in class.					
Continue to Practice of Basic Informatics(2) ↓ ↓ ↓					

Practice of Basic Informatics(2)

For weekly exercises the answers/code/programs you submit will be evaluated. When compilation is necessary, it will be a condition sine qua non to get a passing grade. Comments and commentaries are expected. Particularly interesting solutions to common problems will receive extra credits.

For the final report, your capability of using all tools learned in class to solve the proposed problem will be assessed. Comments and commentaries (within the code and in the report) are expected. Late reports will receive negative points. Details will be further explained at the time.

In general, as a minimum requirement to obtain a passing grade in this class, you should be able to comfortably manage files using Linux terminals, create and format simple documents using Latex, create and format graphics using Gnuplot, and write simple programs in Fortran.

[Textbook]

The textbook "Practice of Basic Informatics" will be provided during the first week of classes. You are expected to read the corresponding chapters ahead of each class.

[Reference book, etc.]
(Reference book)

Stefan Kottwitz 『Latex Beginner's Guide』 ISBN:1847199860

Philipp Janert 『Gnuplot in Action: Understanding Data With Graphs』 ISBN:1933988398

Brian Harn 『Fortran 90 for Scientists & Engineers』 ISBN:0340600349

All additional reference books are available at the Library of the School of Global Engineering, in Yoshida Campus, and also at other Kyoto University libraries.

[Regarding studies out of class (preparation and review)]

You are expected to read the corresponding chapter ahead of each class. A brief explanation of the main topic will be delivered at the beginning of each session, but you are expected to come prepared ahead of time.

You will be given the rest of the class to practice the acquired knowledge by solving a proposed problem under the supervision of the instructor. You will have, however, a full week to submit your answers, so you can keep practicing after the session is over.

[Others (office hour, etc.)]

This class requires the use of virtual computers (VDI) administrated by the Institute for Information Management and Communication (IIMC), for which a valid account for the Educational Computers System of Kyoto University (ECS-ID) is required. You will receive your corresponding username and password as part of the admission procedures. Please, be sure to bring them along from the first session, or you won't be able to participate in class.

Office hours will be provided during the first day of classes.

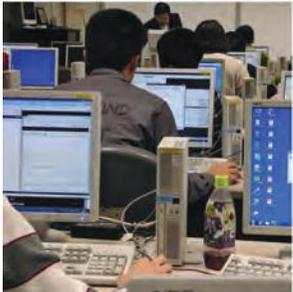
Students who take this class are strongly recommended to take "Basic Informatics" and "Computer Programming in Global Engineering" the following semester.

Students must complete Information Security e-Learning provided by the Institute for Information Management and Communication (IIMC), Kyoto University including the final test of the course, and confirm its feedback. No class hour is assigned to take this e-learning, and

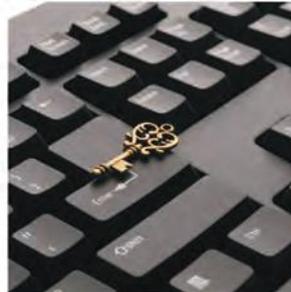
Continue to Practice of Basic Informatics(3) ↓ ↓ ↓

Practice of Basic Informatics(3)

students have to take this e-learning outside the class hours. All the members of the Kyoto University are asked to take this e-learning every year, and hence student in the second grade and above also should complete this e-learning.



```
PROGRAM SUMMATION_3
!!! Add numbers init to last every ninc
IMPLICIT NONE
INTEGER :: init, last, ninc, i, n = 0
WRITE (*,*) 'Initial and last values?'
READ (*,*) init, last
WRITE (*,*) 'Increment?'
READ (*,*) ninc
DO i = init, last, ninc
  n = n + 1
END DO
WRITE (*,*) 'The sum of', init, 'to', &
& last, 'with increments of', ninc, &
& 'is', n, '.'
READ (*,*) init, last
END PROGRAM SUMMATION_3
```



Lecture code: T056003

Course numbering					
Course title <English>		Practice of Basic Informatics-E2 Practice of Basic Informatics-E2		Affiliated department, Job title,Name Graduate School of Engineering Senior Lecturer,ISLAM, A K M Mahfuzul	
Group		Informatics		Field(Classification) (Foundations)	
Language		English		Old group	
Number of weekly time blocks		1		Number of credits 2	
Class style		Seminar		Course offered year/period 2019 • First semester	
Day/period		Fri.2		Target year Mainly 1st year students	
Eligible students		For all majors			
[Outline and Purpose of the Course]					
The objectives of this course are as follows:					
<ul style="list-style-type: none"> - To teach students to acquire the basic ICT skills needed for academic activities. Students will acquire ICT skills so as to be able to fully utilize the information services provided by the university, to search for the information needed during academic activities, to process data, to write papers, and to present their studies. - To guide students to be independent ICT users. Students will learn to manage and operate their personal computers and network properly as independent users. - To help students acquire the capability to learn ICT skills by themselves on an ongoing basis. That is, students will be guided to learn ICT skills not dealt with in this course on their own, as their studies progress. 					
[Course Goals]					
At the end of the semester, students should be able to know the basics of operating systems and in-campus information networks, learn the knowledge of academic information seeking, acquire the skills of data processing, academic writing, and presentation, and understand the basics of programming with practice.					
[Course Schedule and Contents]					
<ol style="list-style-type: none"> 1. Computer basics [2 weeks] <ol style="list-style-type: none"> a) Introduction to this course b) Basics of operating systems 2. Basics of information networks [2 weeks] <ol style="list-style-type: none"> a) In-campus information services and networks b) Information security and information ethics 3. Academic information seeking [2 weeks] <ol style="list-style-type: none"> a) Academic information and libraries b) Skills of information seeking for academic purposes 4. Academic content creation [4 weeks] <ol style="list-style-type: none"> a) Data processing with a Spreadsheet b) Academic report writing c) Presentation 5. Basics of programming [4 weeks] <ol style="list-style-type: none"> a) Overview of programs and programming b) Basic programming exercises c) Advanced programming exercises 6. Review [2 weeks] 					
----- Continue to Practice of Basic Informatics-E2(2) ↓ ↓ ↓					

Practice of Basic Informatics-E2(2)	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Grading will be based on the evaluation of submitted reports.	
[Textbook]	
H. Kita, Y. Kitamura, and H. Hioki 『The Practice of Basic Informatics 2017』 (Kyoto University) (Slide handouts for additional materials will be delivered)	
[Reference book, etc.]	
(Reference book) Introduced during class	
[Regarding studies out of class (preparation and review)]	
Students are expected to read the corresponding materials ahead of each class and practice the acquired knowledge by solving proposed problems during the class. After each class, a student will have a full week to write and submit their reports.	
[Others (office hour, etc.)]	
Students must complete Information Security e-Learning provided by the Institute for Information Management and Communication(IIMC), Kyoto University including the final test of the course, and confirm its feedback. No class hour is assigned to take this e-learning, and students have to take this e-learning outside the class hours. All the members of the Kyoto University are asked to take this e-learning every year, and hence student in the second grade and above also should complete this e-learning.	

Lecture code: T056001

Course numbering					
Course title <English>		Practice of Basic Informatics-E2 Practice of Basic Informatics-E2		Affiliated department, Job title, Name Graduate School of Informatics Program-Specific Associate Professor, L.I.N, Donghui	
Group		Informatics		Field(Classification) (Foundations)	
Language		English		Number of credits 2	
Number of weekly time blocks		1		Class style Seminar	
Day/period		Fri.5		Target year All students	
Eligible students		For all majors			
[Outline and Purpose of the Course]					
The objectives of this course are as follows: - To teach students to acquire the basic ICT skills needed for academic activities. Students will acquire ICT skills so as to be able to fully utilize the information services provided by the university, to search for the information needed during academic activities, to process data, to write papers, and to present their studies. - To guide students to be independent ICT users. Students will learn to manage and operate their personal computers and network properly as independent users. - To help students acquire the capability to learn ICT skills by themselves on an ongoing basis. That is, students will be guided to learn ICT skills not dealt with in this course on their own, as their studies progress.					
[Course Goals]					
At the end of the semester, students should be able to know the basics of operating systems and in-campus information networks, learn the knowledge of academic information seeking, acquire the skills of data processing, academic writing and presentation, and understand the basics of programming with practice.					
[Course Schedule and Contents]					
Computer basics (1 week) - Introduction of this course - Basics of operating systems Basics of information networks (2 weeks) - In-campus information services and networks (1 week) - Information security (1 week) Academic information seeking (1 week) - Academic information and libraries - Skills of information seeking for academic purposes Academic content creation (6 weeks) - Data processing with a Spreadsheet (2 weeks) - Academic report writing (2 weeks) - Presentation (2 weeks) Basics of programming (4 weeks) - Overview of programs and programming (1 week) - Basic programming exercises (1 week) - Advanced programming exercises (2 weeks)					
Continue to Practice of Basic Informatics-E2(2) ↓ ↓ ↓					

Practice of Basic Informatics-E2(2)	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Grading will be based on the evaluation of submitted reports.	
[Textbook]	
H. Kita, Y. Kitamura, and H. Hioki. 『The Practice of Basic Informatics 2017』 (Kyoto University) Slide handouts for additional materials will be delivered.	
[Regarding studies out of class (preparation and review)]	
Students are expected to read the corresponding materials ahead of each class and practice the acquired knowledge by solving proposed problems during the class. After studying each topic, student will have a full week to write and submit their reports.	
[Others (office hour, etc.)]	
No office hours specified. E-mail: lindh@i.kyoto-u.ac.jp	
Students must complete Information Security e-Learning provided by the Institute for Information Management and Communication(IIMC), Kyoto University including the final test of the course, and confirm its feedback. No class hour is assigned to take this e-learning, and students have to take this e-learning outside the class hours. All the members of the Kyoto University are asked to take this e-learning every year, and hence student in the second grade and above also should complete this e-learning.	

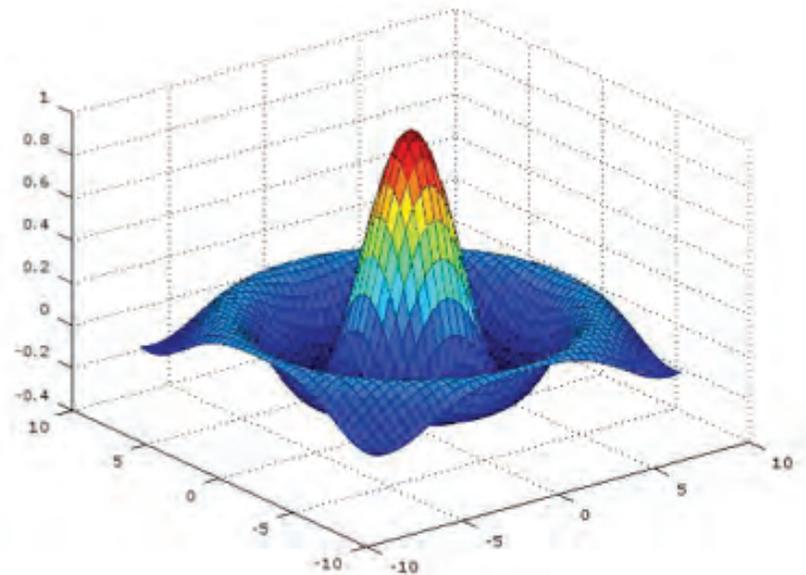
Lecture code: T0056002

Course numbering					
Course title <English>		Practice of Basic Informatics-E2 Practice of Basic Informatics-E2		Affiliated department, Job title,Name	Graduate School of Informatics Program-Specific Associate Professor,CROMIERES, Fabien
Group		Informatics		Field(Classification)	(Foundations)
Language		English		Old group	
				Number of credits	2
Number of weekly time blocks	1	Class style		Seminar	Course offered year/period
					2019 • First semester
Day/period		Fri.5		Target year	All students
				Eligible students	For all majors
[Outline and Purpose of the Course]					
Information Communication Technology (ICT) skill are a necessity for for efficient academic studies.					
This course aims at:					
<ul style="list-style-type: none"> - Teaching students the essentials ICT skills needed for academic activities. Students will acquire ICT skills that will let them fully utilize the information services provided by the university: searching for information needed during academic activities, processing data, programming, writing papers and presenting their studies. - Allowing students to be independent ICT users. Students will learn to manage and operate their personal computers and network properly as independent users. - Helping students acquire the capability to learn ICT skills by themselves on an ongoing basis: students will be guided to learn ICT skills not dealt with in this course on their own, as their studies need it. 					
[Course Goals]					
At the end of the semester, students should have a sufficient understanding of the principles of computers, Operating Systems, Networks (esp. the ones available at the university) and academic information seeking. They should also have acquired practical skills in using softwares such as Spreadsheets, Word Processors, presentation softwares for their academic life. Finally, they will understand and practice the basics of programming.					
[Course Schedule and Contents]					
Computer basics (1 week)					
<ul style="list-style-type: none"> - Introduction of this course - Basics of operating systems 					
Basics of information networks (1 weeks)					
<ul style="list-style-type: none"> - In-campus information services and networks - Information security and information ethics 					
Academic information seeking (1 week)					
<ul style="list-style-type: none"> - Academic information and libraries - Skills of information seeking for academic purposes Academic content creation (6 weeks) - Data processing with a Spreadsheet (2 weeks) - Academic report writing (2 weeks) - Presentation (2 weeks) 					
Basics of programming (5 weeks)					
<ul style="list-style-type: none"> - Overview of programs and programming (2 week) - Basic programming exercises (1 week) - Advanced programming exercises (2 weeks) 					
----- Continue to Practice of Basic Informatics-E2(2) ↓ ↓ ↓					

Practice of Basic Informatics-E2(2)
[Class requirement]
None
[Method, Point of view, and Attainment levels of Evaluation]
Grading will be based on the evaluation of submitted reports.
[Textbook]
H. Kita, Y. Kitamura, and H. Hioki 『The Practice of Basic Informatics』 (Kyoto University) Textbook will be provided in an online version.
[Regarding studies out of class (preparation and review)]
Students are expected to read the corresponding materials ahead of each class and practice the acquired knowledge by solving proposed problems during the class.
[Others (office hour, etc.)]
No office hours specified. But, questions and requests are welcome by email.
Students must complete Infomation Security e-Learning provided by the Institute for Infomation Management and Communication(IIMC), Kyoto University including the final test of the course, and confirm its feedback. No class hour is assigned to take this e-learning, and students have to take this e-learning outside the class hours. All the members of the Kyoto University are asked to take this e-learning every year, and hence student in the second grade and above also should complete this e-learning.

Lecture code: T015001

Course numbering		U-LAS30 10015 LE10 U-LAS30 10015 LE11 U-LAS30 10015 LE12			
Course title <English>		Basic Informatics Basic Informatics		Affiliated department, Job title,Name Graduate School of Engineering Senior Lecturer,Chang, Kai-Chun	
Group	Informatics		Field(Classification) (Foundations)		
Language	English		Old group	Number of credits 2	
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Tue.4		Target year	Mainly 1st year students	Eligible students For science students
[Outline and Purpose of the Course]					
This course discusses basic knowledge of information representation, computer hardware and software, Internet technical background, Internet services, algorithm in information processing, and related issues.					
[Course Goals]					
To understand basic knowledge of information representation, computer hardware and software, Internet technical background, Internet services, algorithm in information processing, and related issues.					
[Course Schedule and Contents]					
0. Introduction [1 week]					
1. Representing information as bit patterns [3 weeks]					
1-1. The binary system					
1-2. Representing integers					
1-3. Representing fractions					
1-4. Representing text and other information					
2. Computers and their peripherals [3 weeks]					
2-1. Computer architecture					
2-2. CPU and main memory					
2-3. Storage devices					
2.4. Input and output devices					
3. Operating system and application software [2 weeks]					
3-1. Operating system architecture					
3-2. Coordinating computer's activities					
3-3. Application software					
4. Networking and the Internet [3 weeks]					
4-1. Network fundamentals					
4-2. The Internet					
4-3. Broadband connections					
4-4. Mobile connections					
5. Optional topics: HTML and web pages, algorithm and programmings, etc. [2 weeks]					
Continue to Basic Informatics(2) ↓ ↓ ↓					

Basic Informatics(2)
[Class requirement] None
[Method, Point of view, and Attainment levels of Evaluation] Quizzes and exercises (40%), final examination (60%)
[Textbook] Instructed during class Handouts distributed in class or uploaded to PandA
[Reference book, etc.] (Reference book) Introduced during class
[Regarding studies out of class (preparation and review)] Students are expected to spend about 1 hour on review. More than half of that time is spent preparing for class and doing assignments.
[Others (office hour, etc.)] Any inquiry to the instructor: chang.kaichun.4z{at}kyoto-u.ac.jp. (replace {at} with @)


Lecture code: T051001

Course numbering	U-LAS30 10016 LE10 U-LAS30 10016 LE11 U-LAS30 10016 LE12				
Course title <English>	Basic Informatics-E2 Basic Informatics-E2		Affiliated department, Job title,Name	Graduate School of Informatics Program-Specific Associate Professor,LIN, Donghui	
Group	Informatics	Field(Classification)	(Foundations)		
Language	English	Old group		Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • First semester
Day/period	Wed.5	Target year	All students	Eligible students	For all majors
[Outline and Purpose of the Course]					
Nowadays, in order to conduct state-of-the-art research or development in various fields including also liberal arts and sciences, one needs to know not only fundamental computer skills but also how to process, utilise and analyse large scale and heterogenous information.					
This lecture covers fundamentals of “information literacy” and "information utilization" including topics related to collecting, organizing, searching, managing and analyzing information as well as topics related to presenting and visualising information.					
The course will provide overview of basic technologies for extracting useful knowledge to perform sophisticated analysis, and will also introduce how to use these technologies in different research fields.					
[Course Goals]					
Students will know fundamentals of information retrieval, processing, analysing and presenting and be able to understand when and how computational techniques should be used for solving diverse problems.					
[Course Schedule and Contents]					
Representation of information (about 2 times) Topics related to acquisition of information by computers (e.g., analog and digital data, multi-media, sampling theorem), and topics related to representation of information (coding, information amount, entropy, Huffman code, mutual information).					
Processing and management of information (about 7 times) This part covers topics related to automatic analysis and processing of information, information retrieval (search engines) and storage (relational databases).					
Analysis of information (about 4 times) This part covers methods used for analyzing the data, such as effective information and data mining techniques (association rules, clustering techniques, decision trees, etc.) and machine learning approaches.					
Information Design (about 1 time) This part will cover data visualization techniques.					
----- Continue to Basic Informatics-E2(2) ↓ ↓ ↓					

Basic Informatics-E2(2)
[Class requirement]
None
[Method, Point of view, and Attainment levels of Evaluation]
Evaluation will be based on final exam.
[Textbook]
Not used Slide handouts will be delivered
[Reference book, etc.]
(Reference book) Introduced during class
[Regarding studies out of class (preparation and review)]
Students will review materials after classes based on the handouts.
[Others (office hour, etc.)]
No office hours specified. E-mail: lindh@i.kyoto-u.ac.jp

Lecture code: T018001

Course numbering		U-LAS30 10019 LE13					
Course title <English>	Information and Society-E2		Affiliated department, Job title,Name	Graduate School of Informatics			
	Information and Society-E2			Program-Specific Associate Professor,LIN, Donghui Graduate School of Informatics Program-Specific Associate Professor,JATOWT, Adam Wladyslaw			
Group	Informatics		Field(Classification)	(Foundations)			
Language	English		Old group	Group B	Number of credits	2	
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period	2019 • First semester	
Day/period	Mon.5	Target year	All students		Eligible students	For all majors	
[Outline and Purpose of the Course]							
<p>In the current society we use variety of information technologies, which have enormous influence on our daily lives, economical activities, industry, public policies, education and so on. In order to get higher perspective and wider view to understand information-based society, we need knowledge of the history of informatics science and technology and their impact on our society.</p> <p>In this lecture students will get fundamental knowledge of information technology and the interrelation between information, technology and society.</p> <p>This lecture course covers topics related to social impacts of ICT and treatment/management of information in our society including information economics, intellectual property, media literacy, social media and so on.</p>							
[Course Goals]							
Students will be able to explain social impacts of ICT and treatment/management of information in our society as well as basic issues related to information economy and information society. They will also be able to formulate their own opinions about information technologies, information ethics and their interplay with society.							
[Course Schedule and Contents]							
1. Introduction to information society: information, information society, Internet, relation of information, society and technology (about 2 weeks)							
2. Intellectual rights and law: freedom of expression, right to know, right to be forgotten, information privacy as well as intellectual and industrial property rights such as patents and copyrights (about 2 weeks)							
3. Information and economy: economic transactions, search/recommendation models for products, information asymmetry, network externality, lock-in phenomenon, path dependence, electronic payments, e-commerce, advertising on the Internet, impact of Internet on economy (about 3 weeks)							
4. Information and education: information education, computer literacy, media literacy, information literacy, e-learning, MOOC, blended learning, digital divide, e-books (about 2 weeks)							
5. Information archiving: digital content archiving, digital libraries, usage of archived contents, information validity over time (about 1 week)							
6. Information design: information systems, search systems for information, information credibility, trust mechanisms (about 1 week)							
----- Continue to Information and Society-E2(2) ↓ ↓ ↓							

Information and Society-E2(2)
7. Digital governance: digital democracy, digital community, social media, cloud computing, information policy (about 1 week)
8. Social computing: human computation, crowdsourcing, collective intelligence (about 2 weeks)
[Class requirement]
None
[Method, Point of view, and Attainment levels of Evaluation]
Students are evaluated by the final exam.
[Textbook]
Not used Lecture slides will be printed and distributed during the lectures.
[Reference book, etc.]
(Reference book) Introduced during class
[Regarding studies out of class (preparation and review)]
Students will review materials after classes based on the slide handouts.
[Others (office hour, etc.)]
No office hours specified. E-mail: adam@dl.kuis.kyoto-u.ac.jp

Lecture code: T018002

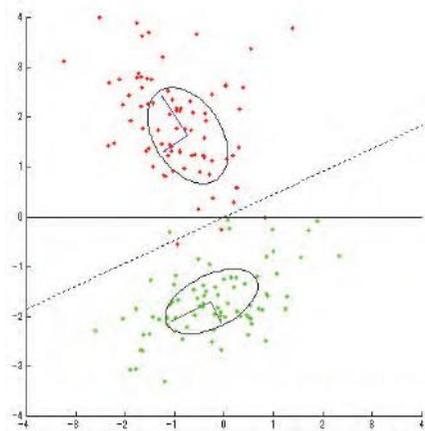
Course numbering		U-LAS30 10019 LE13			
Course title <English>	Information and Society-E2 Information and Society-E2		Affiliated department, Job title,Name	Graduate School of Informatics Program-Specific Associate Professor,LIN, Donghui Graduate School of Informatics Program-Specific Associate Professor,JATOWT, Adam Wladyslaw	
Group	Informatics		Field(Classification)	(Foundations)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Mon.5	Target year	All students		Eligible students For all majors
[Outline and Purpose of the Course]					
<p>In the current society we use variety of information technologies, which have enormous influence on our daily lives, economical activities, industry, public policies, education and so on. In order to get higher perspective and wider view to understand information-based society, we need knowledge of the history of informatics science and technology and their impact on our society.</p> <p>In this lecture students will get fundamental knowledge of information technology and the interrelation between information, technology and society.</p> <p>This lecture course covers topics related to social impacts of ICT and treatment/management of information in our society including information economics, intellectual property, media literacy, social media and so on.</p>					
[Course Goals]					
Students will be able to explain social impacts of ICT and treatment/management of information in our society as well as basic issues related to information economy and information society. They will also be able to formulate their own opinions about information technologies, information ethics and their interplay with society.					
[Course Schedule and Contents]					
1. Introduction to information society: information, information society, Internet, relation of information, society and technology (about 2 times)					
2. Intellectual rights and law: freedom of expression, right to know, right to be forgotten, information privacy as well as intellectual and industrial property rights such as patents and copyrights (about 2 times)					
3. Information and economy: economic transactions, search/recommendation models for products, information asymmetry, network externality, lock-in phenomenon, path dependence, electronic payments, e-commerce, advertising on the Internet, impact of Internet on economy (about 3 times)					
4. Information and education: information education, computer literacy, media literacy, information literacy, e-learning, MOOC, blended learning, digital divide, e-books (about 2 times)					
5. Information archiving: digital content archiving, digital libraries, usage of archived contents, information validity over time (about 1 time)					
6. Information design: information systems, search systems for information, information credibility, trust mechanisms (about 1 time)					
----- Continue to Information and Society-E2(2) ↓ ↓ ↓					

Information and Society-E2(2)

7. Digital governance: digital democracy, digital community, social media, cloud computing, information policy (about 1 time)
8. Social computing: human computation, crowdsourcing, collective intelligence (about 2 times)
[Class requirement]
None
[Method, Point of view, and Attainment levels of Evaluation]
Students are evaluated by the final exam.
[Textbook]
Not used Slide handouts will be distributed.
[Reference book, etc.]
(Reference book) Introduced during class
[Regarding studies out of class (preparation and review)]
Students will review materials after classes based on the handouts.
[Others (office hour, etc.)]
No office hours specified. E-mail: adam@dl.kuis.kyoto-u.ac.jp

Lecture code: T020001

Course numbering		U-LAS30 20032 SE11			
Course title <English>		Programming Practice (Matlab)-E2 Programming Practice (Matlab)-E2		Affiliated department, Job title,Name Graduate School of Human and Environmental Studies Program-Specific Senior Lecturer,DE BRECHT, Matthew	
Group	Informatics	Field(Classification)		(Issues)	
Language	English	Old group		Number of credits	4
Number of weekly time blocks	2	Class style	Seminar	Course offered year/period	2019 • First semester
Day/period	Thu.4 • 5	Target year	All students	Eligible students	For all majors
[Outline and Purpose of the Course]					
Matlab is a programming language widely used by academic and research institutions throughout the world. It has many libraries available and built-in tools for analyzing and visualizing multi-dimensional data. This course will introduce the students to computer programming using Matlab, with an emphasis on data analysis methods. The first half of the course will focus on familiarizing the students with the Matlab environment. In the second half of the course, the students will use Matlab to learn about basic data analysis techniques for multi-dimensional data.					
[Course Goals]					
The students will become proficient in the Matlab programming language, become familiar with basic statistical analysis, and be able to plot and visualize analysis results.					
[Course Schedule and Contents]					
Below is a list of topics we will cover during the course. There may be minor changes depending on the interests and abilities of the students. Each class is three hours long (2コマ連続授業). Lessons will be given during the first half of class, and the second half of class will be for practice tutorials.					
<ol style="list-style-type: none"> 1) Introduction 2) Arrays and vectors 3) Plotting graphs 4) Control statements and built-in functions 5) Script files and functions 6) Debugging 7) Data structures 8) File I/O 9) Graphical user interfaces (GUI) 10) Matrices and 3D plots 11) Data fitting / regression 12) Basic statistics (computing correlations, t-test) 13) Binary classification (linear discriminant analysis) 14) Principal Component Analysis 					
Continue to Programming Practice (Matlab)-E2(2) ↓ ↓ ↓					

Programming Practice (Matlab)-E2(2)	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Class participation (10%), exercises (30%), final programming project and presentation (details given during class) (60%)	
[Textbook]	
No textbook. Relevant materials will be distributed in class.	
[Reference book, etc.]	
(Reference book)	
Matlab tutorials are available online: http://www.mathworks.com/	
There are also several textbooks available for self study, although they will not be required:	
1) "Mastering MATLAB 7" by Duane Hanselman and Bruce Littlefield. Publisher: Prentice Hall (2004), ISBN: 978-0131430181	
2) "MATLAB: An Introduction with Applications" by Amos Gilat. Publisher: Wiley (2008), ISBN: 978-0470108772	
3) "MATLAB for Beginners: A Gentle Approach" by Peter Kattan. Publisher: CreateSpace Independent Publishing Platform (2008), ISBN: 978-1438203096	
Students who wish to use Octave outside of class should see: http://www.octave.org/	
[Regarding studies out of class (preparation and review)]	
Students should review the course material after each class. All students will be given access to Matlab during class hours, but outside of class we recommend the freely available programming language Octave (http://www.octave.org/) for practice outside of class.	
[Others (office hour, etc.)]	
	

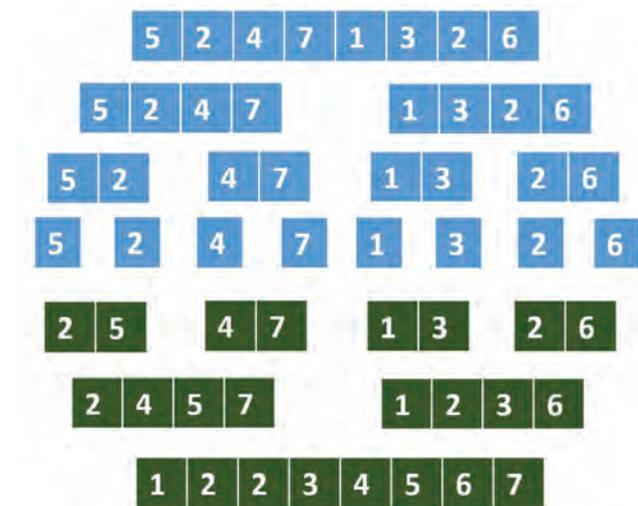
Lecture code: T058001

Course numbering					
Course title <English>	Programming Practice (R)-E2 Programming Practice (R)-E2		Affiliated department, Job title,Name	Graduate School of Agriculture Professor, Daniel Epron	
Group	Informatics		Field(Classification)	(Issues)	
Language	English		Old group		Number of credits 2
Number of weekly time blocks	1	Class style	Seminar		Course offered year/period 2019 • Second semester
Day/period	Mon.5		Target year	Mainly 1st & 2nd year students	Eligible students For all majors
[Outline and Purpose of the Course]					
R is a programming language whose purpose is to be able to process and organize data sets, and to represent these data graphically. Since the two last decades, R is widely used by scientists worldwide for data management and statistical analyses. This course aims to get students to start using R for analysing data and interpreting the output of basic statistical tests. Classes are taught in the form of practical exercises on computers.					
[Course Goals]					
Upon successful completion of this course students will be able (i) to design and statistically analyse a simple experimental plan using R, (ii) to find and perform by themselves an accurate test for solving their scientific question, even if it has not been specifically addressed during the course and (iii) to produce smart graphics for the presentation of analysed data.					
[Course Schedule and Contents]					
The course will simultaneously address how to use the R language to manage data, to implement relevant statistical tests and to generate graphical output Course schedule: 1. Introduction 2. object in R: vectors, matrix, functions 3. data frame -importing data 4. Visualizing data 5. Probability distributions 6. Descriptive statistics 7. Inferential statistics 8. Basic parametric statistical tests 9. Linear model: analysis of variance 10. Linear model: linear regression 11. Testing robustness of the linear model 12. Non-parametric test 13. Improving the quality of graphics for a presentation or report 14. Going further with dedicated packages 15. Analyzing a dataset: building the script and writing a report 16. Feedback					
[Class requirement]					
All students are welcome Students will have to bring their own laptops to use in class that they will also use for homework. Students					
Continue to Programming Practice (R)-E2(2) ↓ ↓ ↓					

Programming Practice (R)-E2(2)
have to download and install R software and R-studio software before starting the course.
[Method, Point of view, and Attainment levels of Evaluation]
Grading: Class attendance and participation (10%), quizzes or questions based on assigned pre-class reading materials or on previous class content (two to three in-class 30 min. tests, 40%), report based on the final exercise (50%). In no case will English language proficiency be a criterion for evaluating students. Tests and exams are designed to allow short answers. Class attendance is expected: students who are absent more than three times without sound reasons (documented unavoidable absence) will not be credited.
[Textbook]
Lecture notes and R script will be provided after each class (uploaded on KULASIS).
[Reference book, etc.]
(Reference book) An Introduction to R (https://cran.r-project.org/manuals.html)
[Regarding studies out of class (preparation and review)]
Work not finished in class time should be finished at home. Self-training is recommended: exercises will be provided.
[Others (office hour, etc.)]
Students are encouraged to ask questions and to make comments during the class. Students are welcome to arrange appointments by email, even outside the official office hour, for questions and discussion

Lecture code: T052001

Course numbering		U-LAS30 20030 LE10			
Course title <English>	Introduction to Algorithms-E2 Introduction to Algorithms-E2		Affiliated department, Job title,Name	Graduate School of Informatics Program-Specific Associate Professor,LE GALL, Francois	
Group	Informatics		Field(Classification)	(Issues)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Thu.2		Target year	All students	
			Eligible students	For all majors	
[Outline and Purpose of the Course]					
This is an introductory non-technical course on algorithms designed for all undergraduate students, including liberal arts students. The goal of this course is to show how computers can solve practical problems, and especially to give the students a basic understanding of the notion of algorithms, their importance and how they work. All the notions will be motivated by real-life applications.					
[Course Goals]					
At the end of the course, students should understand the importance of algorithms and how they work.					
[Course Schedule and Contents]					
1. What are algorithms, and why should you care? (1 week) 2. How to describe and evaluate algorithms (1 week) 3. Sort and search algorithms: how do search engines work? (3 weeks) 4. Constructing algorithms: some simple but powerful techniques (3 weeks) 5. Graphs algorithms: how to represent practical problems on a computer, and solve them (4 weeks) 6. Easy vs. hard problems: what cannot be computed? (2 weeks)					
[Class requirement]					
This is a general non-technical course for all undergraduate students. No specific background from mathematics or computer science is required.					
[Method, Point of view, and Attainment levels of Evaluation]					
Evaluation on submitted reports (three reports during the semester) and class attendance and participation.					
[Textbook]					
Not used					
[Regarding studies out of class (preparation and review)]					
The instructor expects students to spend enough time after each class for review. Additionally, mandatory reading material and assignments (3 reports) will be given during the course.					
[Others (office hour, etc.)]					



Lecture code: T052002

Course numbering		U-LAS30 20030 LE10			
Course title <English>	Introduction to Algorithms-E2 Introduction to Algorithms-E2		Affiliated department, Job title,Name	Graduate School of Informatics Program-Specific Associate Professor,LE GALL, Francois	
Group	Informatics		Field(Classification)	(Issues)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Tue.2	Target year	All students		Eligible students For all majors
[Outline and Purpose of the Course]					
This is an introductory non-technical course on algorithms designed for all undergraduate students, including liberal arts students. The goal of this course is to show how computers can solve practical problems, and especially to give the students a basic understanding of the notion of algorithms, their importance and how they work. All the notions will be motivated by real-life applications.					
[Course Goals]					
At the end of the course, students should understand the importance of algorithms and how they work.					
[Course Schedule and Contents]					
1. What are algorithms, and why should you care? (1 week) 2. How to describe and evaluate algorithms (1 week) 3. Sort and search algorithms: how do search engines work? (3 weeks) 4. Constructing algorithms: some simple but powerful techniques (3 weeks) 5. Graphs algorithms: how to represent practical problems on a computer, and solve them (4 weeks) 6. Easy vs. hard problems: what cannot be computed? (2 weeks)					
[Class requirement]					
This is a general non-technical course for all undergraduate students. No specific background from mathematics or computer science is required.					
[Method, Point of view, and Attainment levels of Evaluation]					
Evaluation on submitted reports (three reports during the semester) and class attendance and participation.					
[Textbook]					
Not used					
[Regarding studies out of class (preparation and review)]					
The instructor expects students to spend enough time after each class for review. Additionally, mandatory reading material and assignments (3 reports) will be given during the course.					
[Others (office hour, etc.)]					

Lecture code: T048001

Course numbering		U-LAS30 20028 LE10			
Course title <English>	Fundamentals of Discrete Optimization-E2 Fundamentals of Discrete Optimization-E2		Affiliated department, Job title,Name	Graduate School of Informatics Program-Specific Associate Professor,LE GALL, Francois	
Group	Informatics		Field(Classification)	(Issues)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Wed.2	Target year	All students		Eligible students For all majors
[Outline and Purpose of the Course]					
The goal of this course is to introduce students to the field of discrete optimization. This is a non-technical course open to all undergraduate students, which does not require any specific background on mathematics or computer science. What is the shortest path between two places on a roadmap? What is the optimal strategy for delivering packages from a seller to clients? Discrete optimization is a methodology to solve such practical problems, in addition to a wide range of problems arising in science, economy or business. This course will show how to model such tasks as optimization problems and how to solve them in practice.					
[Course Goals]					
At the end of the course, students should know how to solve in practice concrete problems using discrete optimization.					
[Course Schedule and Contents]					
1. What is optimization, and why is it important? (1 week) 2. Discrete optimization: how to organize your schedule or pack your bag efficiently? (4 weeks) 3. Heuristics and approximation: practical methods for hard problems (3 weeks) 4. Big data: solving large-scale problems (2 weeks) 5. Pattern recognition: learning from experience (2 weeks) 6. Artificial intelligence: can computers “think” ? (2 weeks)					
[Class requirement]					
This is a general non-technical course for all undergraduate students. No specific background from mathematics or computer science is required.					
[Method, Point of view, and Attainment levels of Evaluation]					
Evaluation on submitted reports (three reports during the semester) and class attendance and participation.					
[Textbook]					
Not used					
[Regarding studies out of class (preparation and review)]					
The instructor expects students to spend enough time after each class for review. Additionally, mandatory reading material and assignments (3 reports) will be given during the course.					
[Others (office hour, etc.)]					

Lecture code: T049001

Course numbering	U-LAS30 20029 LE10				
Course title <English>	Introduction to Coding Theory and Cryptography-E2		Affiliated department, Job title,Name	Graduate School of Informatics Program-Specific Associate Professor,LE GALL, Francois	
Group	Informatics	Field(Classification)	(Issues)		
Language	English	Old group		Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • First semester
Day/period	Fri.2	Target year	All students	Eligible students	For all majors
[Outline and Purpose of the Course]					
<p>Cryptography is the science studying, among other things, how to encode messages such that only the sender and the receiver can understand them. Such techniques have become indispensable, enabling for instance secure wireless networks, ATM or internet banking. Besides their cryptographic applications, codes are also widely used for the purpose of designing efficient and reliable data transmission. This includes data compression codes to efficiently transmit and store information as well error-correcting codes that permit automatic detection and correction of errors in the transmitted data.</p> <p>This course is a non-technical introduction to the field of coding theory and cryptography that will cover the history and importance of codes, the basics of modern cryptography and the design of codes for data compression and error correction.</p>					
[Course Goals]					
At the end of the course, students should understand the basic concepts of coding theory and cryptography, and know how to use simple codes and cryptosystems.					
[Course Schedule and Contents]					
<ol style="list-style-type: none"> 1. What are codes? Encryption, data compression and error correction (1 week) 2. History, importance and social impact of cryptography (2 weeks) 3. Modern encryption schemes: private-key and public-key cryptography (3 weeks) 4. Other applications of cryptography: digital signatures, secret sharing (1 week) 5. Information and coding: how to compress data (3 weeks) 6. Error correcting codes: mistakes that fix themselves (4 weeks) 					
[Class requirement]					
This is a general non-technical course for all undergraduate students. No specific background from mathematics or computer science is required.					
[Method, Point of view, and Attainment levels of Evaluation]					
Evaluation on submitted reports (three reports during the semester) and class attendance and participation.					
[Textbook]					
Not used					
[Regarding studies out of class (preparation and review)]					
The instructor expects students to spend enough time after each class for review. Additionally, mandatory reading material and assignments (3 reports) will be given during the course.					
[Others (office hour, etc.)]					

Lecture code: T019001

Course numbering		U-LAS30 20031 LE11			
Course title <English>	Information Network-E2 Information Network-E2		Affiliated department, Job title,Name	Graduate School of Human and Environmental Studies Program-Specific Senior Lecturer,DE BRECHT, Matthew	
Group	Informatics	Field(Classification)	(Issues)		
Language	English	Old group	Group B	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • Second semester
Day/period	Thu.4	Target year	All students	Eligible students	For all majors
[Outline and Purpose of the Course]					
Using the Internet for gathering information, sending e-mails, and online shopping has become a part of everyday life. In this course, students will learn the basic workings of the Internet and how computers communicate across networks. Students will also learn about information security issues and how to avoid potential problems while using the Internet.					
[Course Goals]					
The students will learn the basics of the Internet and the various protocols used when devices communicate across the network, understand problems involving information security and how to deal with them, and learn the basic rules governing proper use of information networks.					
[Course Schedule and Contents]					
We will cover the following topics during the course, and spend one or two weeks on each topic:					
<ol style="list-style-type: none"> 1) Overview of the Internet 2) Application Layer (World Wide Web, e-mail, etc.) 3) Transport Layer (sockets, TCP and UDP) 4) Network Layer (IP addresses and routing) 5) Link Layer (LANs and Ethernet) 6) Wireless and mobile networks 7) Security 8) Rules of Internet usage 					
[Class requirement]					
No prerequisites are required, but it is recommended that the students take an introductory course such as "Basic Informatics" before this course.					
[Method, Point of view, and Attainment levels of Evaluation]					
Students will be expected to understand the basic workings of the Internet, information security and proper use of information networks. The student's understanding of these topics will mainly be evaluated by a final report at the end of the course. Evaluation will also be influenced by performance on practice exercises given during the course. Approximately: class participation (10%), exercises (30%), final report (60%).					
----- Continue to Information Network-E2(2) ↓ ↓ ↓					

Information Network-E2(2)
[Textbook]
Relevant materials will be distributed in class, so no textbook is required. However, students who wish to study the topics in more detail are recommended to read the book "Computer Networking" by J. Kurose and K. Ross (see below).
[Reference book, etc.]
(Reference book) J. Kurose and K. Ross 『Computer Networking: A top-down approach (7th Edition)』 (Pearson, 2016) ISBN:978-0133594140
[Regarding studies out of class (preparation and review)]
Students should study material related to each topic before class, and review the course material after each class. It is also recommended that students gain first-hand experience of the topics discussed by using computers outside of class.
[Others (office hour, etc.)]

Lecture code: T057002

Course numbering					
Course title <English>	Fundamentals of Artificial Intelligence-E2		Affiliated department, Job title, Name	Graduate School of Informatics Program-Specific Associate Professor, CROMIERES, Fabien	
Group	Informatics	Field(Classification)	(Issues)		
Language	English	Old group		Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • First semester
Day/period	Tue.5	Target year	All students	Eligible students	For all majors
[Outline and Purpose of the Course]					
Recent improvements in Artificial Intelligence techniques, in particular the set of techniques commonly referred to as “Deep Learning”, have largely increased the number of tasks that computers can solve easily. This lead to a current explosion in the use of AI: chatbots helping users on commercial websites, self-driving vehicles, automatic translation, automatic photos tagging, etc. It is of course not possible to introduce all aspects of AI in one semester, but this course will attempt to give a sufficiently detailed explanation of at least a few of the most AI common techniques. We will focus on supervised Machine Learning in general and Deep Learning in particular. One goal will be to give practical and working knowledge to students, so that they can apply what they learned to at least some simple tasks.					
[Course Goals]					
Students will have a good understanding of simple supervised machine learning techniques, and be able to implement and use some for automatic classification tasks.					
[Course Schedule and Contents]					
1- Overview of Artificial Intelligence and its applications (1 week) This will give a “Big Picture” description of the field of AI. We would first discuss some common applications of AI: Image Recognition, Speech Recognition, Text understanding, Chatbots, Machine Translation, Video Games, Automation (self- driving vehicles, robotic), Financial Predictions, Medical Diagnostic. Then we would discuss the general approaches to AI: Logic reasoning, Machine Learning (supervised and unsupervised), ...					
2-Review of Mathematics Concepts (3 weeks) We will review here some of the Mathematics tools that are the most necessary for the understanding of AI methods. In particular, we will review essential notions of probability and statistics (expectation, variance, random variables, estimators) as well as calculus and optimization (derivative, numerical methods for finding a minimum,...)					
3-Basic Principles of Supervised Machine Learning (4 weeks) Focusing on simple tasks such as binary classification or linear regressions, we introduce the terminology and basics of Machine learning: defining a parameterized model, defining a loss, choosing an optimization method. We will also introduce some classic models for binary classification: logistic regression, naive Bayes, perceptron, deep neural networks. Finally, we discuss the theoretical aspects of bias, variance and capacity.					
4-Practical use of Machine Learning (2 weeks) We will learn to use a simple programming language (Python) and some of its libraries (scipy, scikit, chainer) to do practical machine learning. We will see how to load some data in a standard format (such as CSV) and then analyze it. We will consider both using directly library functions or implementing					
----- Continue to Fundamentals of Artificial Intelligence-E2(2) ↓ ↓					

Fundamentals of Artificial Intelligence-E2(2)
----- simple methods (so as to apply the theoretical knowledge of the previous part). 5-Artificial Intelligence and Natural Language Processing (4 weeks) We will discuss several Natural Language Processing tasks. In particular, Parsing, Summarization, Language Models and Machine Translation. We will especially focus on how Deep Learning models can be applied to these tasks. This will be an opportunity to further explain some of the most common Neural Network components used in deep learning, such as word embeddings, Recurrent Neural Networks, Softmax,.... 6-Practical Project (1 week) As a final application, students will be asked to implement and train an end-to-end binary classifier for a specific task (eg. automatically classifying which documents in a set are newspaper articles).
[Class requirement]
None
[Method, Point of view, and Attainment levels of Evaluation]
Evaluation is based on class participation (15 %), mini reports and exercises (50 %) and the implementation of an assigned project (35 %).
[Textbook]
Not used Instructed during class Lecture handouts will be provided in the class.
[Reference book, etc.]
(Reference book) Ian Goodfellow, Yoshua Bengio and Aaron Courville 『Deep Learning』 (The MIT Press) ISBN:978-0262035613
[Regarding studies out of class (preparation and review)]
The instructor expects students to spend over 60 minutes after each class to review the content. Some practical exercises will also be given at the end of some lectures so as to let the students see how much of the content they do understand practically.
[Others (office hour, etc.)]
No office hours specified. But, questions and requests are welcome by email.

Lecture code: T057001

Course numbering					
Course title <English>	Fundamentals of Artificial Intelligence-E2		Affiliated department, Job title, Name	Graduate School of Informatics Program-Specific Associate Professor, CROMIERES, Fabien	
Group	Informatics	Field(Classification)	(Issues)		
Language	English	Old group		Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • Second semester
Day/period	Wed.5	Target year	All students	Eligible students	For all majors
[Outline and Purpose of the Course]					
Recent improvements in Artificial Intelligence techniques, in particular the set of techniques commonly referred to as “Deep Learning”, have largely increased the number of tasks that computers can solve easily. This led to a current explosion in the use of AI: chatbots helping users on commercial websites, self-driving vehicles, automatic translation, automatic photos tagging, etc. It is of course not possible to introduce all aspects of AI in one semester, but this course will attempt to give a sufficiently detailed explanation of at least a few of the most AI common techniques. We will focus on supervised Machine Learning in general and Deep Learning in particular. One goal will be to give practical and working knowledge to students, so that they can apply what they learned to at least some simple tasks.					
[Course Goals]					
Students will have a good understanding of simple supervised machine learning techniques, and be able to implement and use some for automatic classification tasks.					
[Course Schedule and Contents]					
1- Overview of Artificial Intelligence and its applications (1 week) This will give a “Big Picture” description of the field of AI. We would first discuss some common applications of AI: Image Recognition, Speech Recognition, Text understanding, Chatbots, Machine Translation, Video Games, Automation (self-driving vehicles, robotic), Financial Predictions, Medical Diagnostic. Then we would discuss the general approaches to AI: Logic reasoning, Machine Learning (supervised and unsupervised), ...					
2-Review of Mathematics Concepts (3 weeks) We will review here some of the Mathematics tools that are the most necessary for the understanding of AI methods. In particular, we will review essential notions of probability and statistics (expectation, variance, random variables, estimators) as well as calculus and optimization (derivative, numerical methods for finding a minimum, ...)					
3-Basic Principles of Supervised Machine Learning (3 weeks) Focusing on simple tasks such as binary classification or linear regressions, we introduce the terminology and basics of Machine learning: defining a parameterized model, defining a loss, choosing an optimization method. We will also introduce some classic models for binary classification: naive Bayes, perceptron, deep neural networks. Finally, we discuss the theoretical aspects of bias, variance and capacity.					
4-Practical use of Machine Learning (3 weeks)					
Continue to Fundamentals of Artificial Intelligence-E2(2) ↓ ↓					

Fundamentals of Artificial Intelligence-E2(2)
We will learn to use a simple programming language (Python) and some of its libraries (scipy, scikit, chainer) to do practical machine learning. We will see how to load some data in a standard format (such as CSV) and then analyze it. We will consider both using directly library functions or implementing simple methods (so as to apply the theoretical knowledge of the previous part).
5-Artificial Intelligence and Natural Language Processing (4 weeks) We will discuss several Natural Language Processing tasks. In particular, Parsing, Summarization, Language Models and Machine Translation. We will especially focus on how Deep Learning models can be applied to these tasks. This will be an opportunity to further explain some of the most common Neural Network components used in deep learning, such as word embeddings, Recurrent Neural Networks, Softmax, ...
6-Practical Project (1 weeks) As a final application, students will be asked to implement and train an end-to-end binary classifier for a specific task (eg. automatically classifying which documents in a set are newspaper articles).
[Class requirement]
None
[Method, Point of view, and Attainment levels of Evaluation]
Evaluation is based on class participation (15 %), mini reports and exercises (50 %) and the implementation of an assigned project (35 %).
[Textbook]
Instructed during class Lecture handouts will be provided in the class.
[Reference book, etc.]
(Reference book) Ian Goodfellow, Yoshua Bengio and Aaron Courville 『Deep Learning』 (The MIT Press) ISBN:978-0262035613 (2016)
[Regarding studies out of class (preparation and review)]
The instructor expects students to spend over 60 minutes after each class to review the content. Some practical exercises will also be given at the end of some lectures so as to let the students see how much of the content they do understand practically.
[Others (office hour, etc.)]
No office hours specified. But, questions and requests are welcome by email.

Lecture code: T047001

Course numbering		U-LAS30 20027 LE13			
Course title <English>	Information Literacy for Academic Study-E2		Affiliated department, Job title,Name	Graduate School of Informatics Program-Specific Associate Professor,CROMIERES, Fabien	
	Information Literacy for Academic Study-E2				
Group	Informatics		Field(Classification)	(Issues)	
Language	English		Old group		Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Thu.5		Target year	All students	Eligible students For all majors
[Outline and Purpose of the Course]					
Effective and efficient utilization of information is one key point for studying at university. This course introduces various resources and methods that help students find valuable information for study. The practical topics include formulating a study strategy, developing search skills, evaluating sources, and referring sources.					
[Course Goals]					
Students will be able to conduct effective decision making and problem solving in their academic studies by learning the methodologies of identifying, searching, evaluating, using, and presenting information.					
[Course Schedule and Contents]					
1. Introduction of information literacy (about 1 week) This section introduces the fundamental concepts of information literacy, the standards of information literacy for higher education, and the relation between university studies and information literacy.					
2. Study strategies (about 2 weeks) This section discusses how a student sets up an appropriate procedure to complete an assigned study/research task, such as determining the information needed, identifying the topic, developing a search strategy, collecting related information and accomplishing the task.					
3. Searching in Library (about 1 weeks) This section first introduces the general organization of a library, and then provides methods of locating the information needed at library, which include browsing shelves, checking card catalog, and using online catalog.					
4. Searching Databases (about 1 weeks) This section introduces the basic architecture of a database first, then the key items and methodologies for indexing. Afterwards, finding an article from magazines, newspapers, journals, and reference books in full text or reference databases is discussed.					
5. Searching internet (about 2 weeks) This section first introduces the architecture of World Wide Web, then explains the search engines including their foundation, principles, elements, and working flow (crawling, indexing, and query). Through explaining how search engines rank results and how PageRank measures individual web page, we discuss the method of precisely locating information from internet.					
----- Continue to Information Literacy for Academic Study-E2(2) ↓ ↓					

Information Literacy for Academic Study-E2(2)	

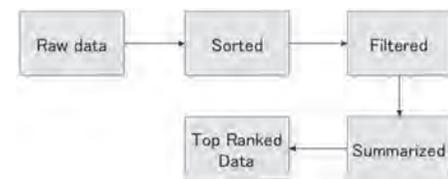
6. Evaluating sources (about 3 week) This section explains the differences of various information materials and their formats, and introduces the evaluation criteria that one need to apply to sources.	
7. Referring sources and academic integrity (about 2 weeks) This section introduces the reasons, rules and types of citing sources. The issues of copyright and plagiarism, and their relation are discussed as well.	
8. Presenting information (1 week) This section provide tips as to how efficiently present the information gathered in a research work	
9. Practice: future study design using problem solving models (1 week)	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Evaluation is based on class participation (20 %) and assignments (80 %).	
[Textbook]	
Instructed during class Lecture handouts will be provided in the class.	
[Reference book, etc.]	
(Reference book) Introduced during class	
[Regarding studies out of class (preparation and review)]	
The instructor expects students to spend over 60 minutes after each class to review the content and build up their own logic.	
[Others (office hour, etc.)]	
No office hours specified. But, questions and requests are welcome by email.	

Lecture code: T050001

Course numbering		U-LAS30 20033 SE11			
Course title <English>	Processing and Analyzing Data I-E2 : Shell-based data processing fundamentals		Affiliated department, Job title,Name	Graduate School of Medicine Senior Lecturer,John BROWN	
	Processing and analyzing data I-E2 :Shell-based data processing fundamentals				
Group	Informatics		Field(Classification)	(Issues)	
Language	English		Old group		Number of credits 2
Number of weekly time blocks	1	Class style	Seminar		Course offered year/period 2019 • First semester
Day/period	Wed.3		Target year	All students	
			Eligible students	For all majors	
[Outline and Purpose of the Course]					
With data in engineering, medicine, law, economics, and other fields all becoming increasingly digitized, it is key to be able to process this data. This course is designed for students of all disciplines to learn the basics for systematic processing of data that they encounter in their studies. Lectures will focus on learning the basic command line tools for automatic processing of data, including sorting, filtering, summarizing, searching, and other related processing. Students will be encouraged to immediately apply each week's lessons to their own data.					
[Course Goals]					
At the end of the course, students will be able to operate a computer to automatically: (1) search for specific entries in large datafiles (2) search for pattern-like entries in large datafiles (3) filter datafiles to desired content (4) perform basic summary and counting statistics on data (5) assemble small processing pipelines from the various tools they will study					
[Course Schedule and Contents]					
(1) Overview, problems and limitations of spreadsheets					
(2~3) Filesystem tree organization: understanding directory structure Listing/copying/moving/deleting data Introduction to the pipe mechanism Standard input/output/error streams, delimiters					
(4~5) Sorting data Trimming data by columns, front, or back Counting data Filename patterns/wildcards Filtering data to unique entries or by patterns					
Continue to Processing and Analyzing Data I-E2 :Shell-based data processing fundamentals(2) ↓ ↓					

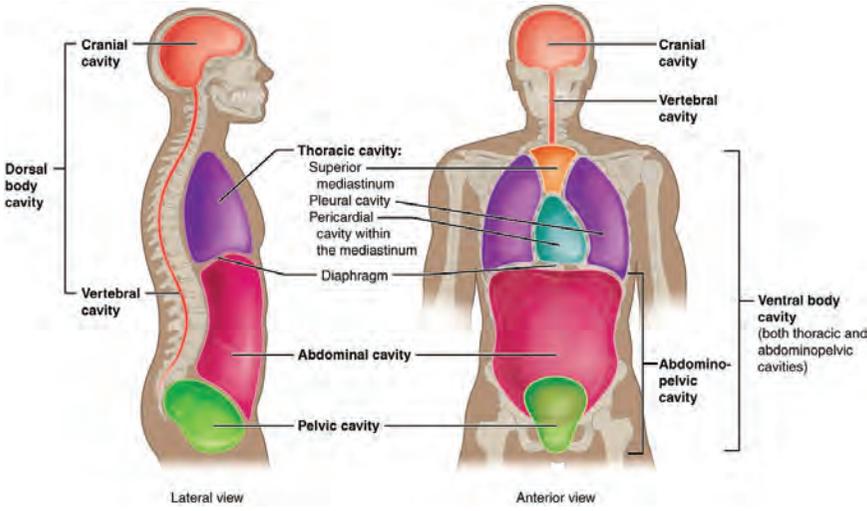
Processing and Analyzing Data I-E2 :Shell-based data processing fundamentals(2)	

(6~7)	More filtering of data by patterns Stream editing Basic loops for processing collections of data
(8~9)	Finding files in collections Conditional filtering and mathematical calculations "on-the-fly" Interactive visualization: gnuplot Shell variables, shell script storage and execution, file editors
(10)	Statistics on data: good and bad statistical thinking
(11~14)	Student questions and answers Student report development time
(15)	Exam
(16)	Feedback (exam answers, student questions and answers)
[Class requirement]	
No prior knowledge of computer programming or data processing is necessary.	
[Method, Point of view, and Attainment levels of Evaluation]	
Class attendance and participation (5%), Quizzes (40%), Report (25%), Final exam/project (30%)	
[Textbook]	
Not used Lecture notes and material will be provided in class. Documentation about processing commands will be explained in class. Students will have a chance to practice data processing during class.	
[Reference book, etc.]	
(Reference book) Introduced during class	
[Regarding studies out of class (preparation and review)]	
Students are strongly recommended to practice class material outside of class and deepen their understanding.	
[Others (office hour, etc.)]	
Each student is recommended, but not required, to own a personal computer (laptop, desktop). Windows / MacOS / Linux environments are acceptable.	



Lecture code: U104001

Course numbering		U-LAS40 10007 LE26			
Course title <English>		Basics of the Human Body-E2 Basics of the Human Body-E2		Affiliated department, Job title,Name Graduate School of Medicine Senior Lecturer,S.Pilar Suguimoto	
Group		Health and Sports		Field(Classification) Health and Sports Sciences(Foundations)	
Language		English		Number of credits 2	
Number of weekly time blocks		1		Class style Lecture	
Day/period		Mon.3		Target year All students	
Eligible students		For all majors			
[Outline and Purpose of the Course]					
Human anatomy and physiology deals with the structure of organs and the functional interrelationship between organ systems. This course presents an overview of the anatomical structure and function of the human body. It introduces students to the basic physiologic concepts as they relate to normal body function and maintenance of health. Students will also learn basic medical terminology. The course is designed for students from all majors.					
[Course Goals]					
* To understand basic concepts of the human body and explain its organization and functions. * To identify the structure and functions of major body systems. * To demonstrate knowledge of basic medical terminology.					
[Course Schedule and Contents]					
The main contents of the course are:					
1. Introduction. Medical terminology 2. The cell and body tissues 3. Body membranes and integumentary system 4. Skeletal System 5. Muscular System 6. Nervous System 7. Endocrine System 8. Blood 9. Cardiovascular System 10. Lymphatic system and body defenses 11. Lymphatic system and body defenses (cont.) 12. Respiratory System 13. Digestive System 14. Urinary System					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
The course is presented in lecture format; includes videos and guest speakers. Evaluation will be based on:					
(a) Quizzes (30%). Questions will be drawn from classes, homework, and course objectives. The lowest score					
Continue to Basics of the Human Body-E2(2) ↓ ↓					

Basics of the Human Body-E2(2)	
will be eliminated. Students who miss a quiz, will get a grade of zero for that quiz. There are NO makeup quizzes.	
(b) Homework (10%). Lectures will be followed by short homework assignments to assist students learn the class material more effectively.	
(c) In-class presentation (20%)	
(d) Final exam (40%)	
More details will be provided in class.	
[Textbook]	
Not fixed	
[Reference book, etc.]	
(Reference book)	
Eliane N. Marieb 『Essentials of Human Anatomy and Physiology』 (Pearson) ISBN:1-292-05720-3 Edith Applegate 『The anatomy and physiology learning system』 (Saunders) ISBN:978-1-4377-0393-1 Lecture handouts will be available for each class.	
[Regarding studies out of class (preparation and review)]	
This course involves a large amount of information presented in a short amount of time. It would be useful for students to preview the class topic and review the material after the lecture to solidify the information. This may take between 1-2 hours per week. It is advisable to attend all lectures.	
[Others (office hour, etc.)]	
*Please visit KULASIS to find out about office hours.	
	

Lecture code: U106001

Course numbering		U-LAS40 10008 LE26			
Course title <English>	Introduction to Lifestyle Related Diseases-E2		Affiliated department, Job title,Name	Graduate School of Medicine Senior Lecturer,S.Pilar Sugumimoto	
	Introduction to Lifestyle Related Diseases-E2				
Group	Health and Sports		Field(Classification)	Health and Sports Sciences(Foundations)	
Language	English		Old group		Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Mon.3		Target year	All students	Eligible students For all majors
[Outline and Purpose of the Course]					
The course provides a global overview of major chronic diseases and their risk factors, providing students with an understanding of the individual and societal disease burden. It also covers concepts of socio-epidemiology, social marketing, and behavioral theories, and their application for health promotion and prevention strategies. The course sessions are a mixture of lectures, guest speakers, small-group discussions, readings, written assignments, and student presentations.					
[Course Goals]					
* To understand the global burden of the most common chronic diseases * To understand the common risk factors * To understand the socioeconomic impact of the most common chronic diseases * To describe approaches for prevention of the most common chronic diseases					
[Course Schedule and Contents]					
In principle, the course will cover the following topics:					
<ol style="list-style-type: none"> 1. Global overview of chronic diseases 2. Determinants of health 3. Cardiovascular diseases. Hypertension 4. Chronic respiratory diseases 5. Cancer 6. Obesity and diabetes 7. Unhealthy diets 8. Physical inactivity 9. Alcohol and tobacco 10. Socio-epidemiology. Behavioral theories 11. Social marketing for health promotion 12. Media and technology 13. Prevention and control 14. Prevention and control (cont.) 					
Continue to Introduction to Lifestyle Related Diseases-E2(2) ↓ ↓ ↓					

Introduction to Lifestyle Related Diseases-E2(2)	
[Class requirement]	
It is NOT a prerequisite, but students are encouraged to take "Sociology of Chronic Diseases" to enhance the understanding of chronic diseases.	
[Method, Point of view, and Attainment levels of Evaluation]	
The course is presented in lecture/group discussion format; include videos and guest speakers.	
Grading will be based on the following factors:	
Class participation/Group discussions (20%) Presentation (20%) Written assignments (60%)	
* Further details will be provided in the first class.	
[Textbook]	
Not used	
[Reference book, etc.]	
(Reference book) Introduced during class The course may use chapters from textbooks and readings from academic literature. Students will be provided with a list of recommended readings. Lecture handouts will be available.	
[Regarding studies out of class (preparation and review)]	
* Students are expected to come to class having completed the assigned reading and writing, and ready to contribute to group discussions.	
[Others (office hour, etc.)]	
* Students are expected to actively participate in class.	
* Please visit KULASIS to find out about office hours.	
	

Lecture code: U144001

Course numbering		U-LAS40 10009 LE26			
Course title <English>	Nutrition and Health-E2 Nutrition and Health-E2		Affiliated department, Job title,Name	Graduate School of Medicine Assistant Professor,POUDYAL, Hemant	
Group	Health and Sports		Field(Classification)	Health and Sports Sciences(Foundations)	
Language	English		Old group		Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Fri.5		Target year	All students	Eligible students For all majors
[Outline and Purpose of the Course]					
<p>This course provides an overview of fundamental knowledge of food and nutrition. We will cover core nutritional concepts and explore special topics in nutrition using locally and internationally relevant examples. We will learn about major nutrients and their role in health and disease. Through this course, we will learn and develop the skills required to understand our diets for healthy living. Students will be required to keep a simple food journal and will apply knowledge gained during the course to estimate energy requirements and assess their diet quality.</p>					
[Course Goals]					
<ol style="list-style-type: none"> 1. To provide an overview of the major nutrients relevant to human health. 2. Present current evidence for the role of key nutrients in the prevention of chronic diseases. 3. To develop a good understanding of the concept of dietary recommendations. 4. Discuss special topics in nutrition. 5. To be able to estimate energy requirements, qualitatively assess the dietary quality of an individual and plan a healthy diet. 					
[Course Schedule and Contents]					
<p>In principle, the course will be offered along the following plan. However, order or the number of times for each theme may change depending on the progression of the course or handling on current topics.</p> <ol style="list-style-type: none"> 1. Nutrient and non-nutrient components of food 2. Role of nutrients in health and disease 3. Tools for healthy eating: Dietary intake recommendations and food labels 4. Tools for healthy eating: Nutritional assessment 5. Tools for healthy eating: Food Journals 6. Designing a healthful diet-Macronutrients 7. Designing a healthful diet-Micronutrients 8. Nutrients involved in body fluid balance (including alcohol) 9. Nutrition-related disorders: Metabolic Syndrome 10. Eating disorders: Anorexia nervosa and bulimia nervosa 11. Special Topics in Nutrition-Pregnancy, lactation and infant formula 12. Special Topics in Nutrition- Geriatric nutrition 13. Special Topics in Nutrition- Sports nutrition 14. Special Topics in Nutrition- Supplementary and functional foods 					
----- Continue to Nutrition and Health-E2(2) ↓ ↓ ↓					

Nutrition and Health-E2(2)	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Active class performance 30% Food journal 40% Food journal analysis 30%	
[Textbook]	
Not used	
[Reference book, etc.]	
<p>(Reference book) Reference materials will be provided during the class.</p>	
[Regarding studies out of class (preparation and review)]	
Students are expected to come to class having completed their food journal.	
[Others (office hour, etc.)]	
Please contact the instructor by email if you have any questions. The instructor will also be available for course-related consultation out of lecture hours is requested by the students. Please make an appointment by email (medsocio.kyodai@gmail.com).	

Lecture code: U145001

Course numbering		U-LAS40 10010 LE26					
Course title <English>	Biology and Sociology of Chronic Diseases-E2			Affiliated department, Job title,Name	Graduate School of Medicine Assistant Professor,POUDYAL, Hemant		
	Biology and Sociology of Chronic Diseases-E2						
Group	Health and Sports		Field(Classification)	Health and Sports Sciences(Foundations)			
Language	English		Old group		Number of credits	2	
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period	2019 • First semester	
Day/period	Fri.5		Target year	All students		Eligible students	For all majors
[Outline and Purpose of the Course]							
<p>In this course, we will explore the social and environmental factors that affect chronic diseases. In each lecture, we will discuss some social factors using specific chronic diseases as examples (in brackets below). Additionally, national policies of various countries, including Japan, for management of chronic diseases will be discussed.</p> <p>The class format includes lectures, short videos and group discussions of case examples.</p>							
[Course Goals]							
<ol style="list-style-type: none"> 1. To understand social and environmental determinants of disease and illness. 2. To understand the impact of health policies and how they affect human health. 3. To critically examine how changing public perception may impact chronic diseases. 							
[Course Schedule and Contents]							
<p>In principle, the course will be offered along the following plan. However, order or the number of times for each theme may change depending on the progression of the course or handling on current topics.</p> <ol style="list-style-type: none"> 1. Course introduction 2. Social class, race/ethnicity and gender as social determinants of health (eg. diabetes and obesity) 3. Ageing as a social determinant of health (eg. Alzheimer' s and Parkinson' s disease) 4. Role of social stress in health (eg. post-traumatic stress disorder) 5. Food as a determinant of health (eg. cardiovascular diseases, cancer and respiratory diseases) 6. Environmental determinants of health (eg. chronic obstructive pulmonary disease) 7. Social factors influencing the decision to seek professional healthcare (eg. Cancer) 8. Impact of medical innovations on health (eg. stroke and age-related diseases) 9. & 10. Impact of government health policy and medical innovation on chronic diseases (eg. cardiovascular diseases) 11. A health policy success story (eg. tobacco and cancer) 12. A health policy failure story (eg. diabetes and obesity) 13. Role of media in social health perception (eg. "health miracles") 14. Role of legal system in social health perception (eg. alcohol, tobacco and marijuana) 							
----- Continue to Biology and Sociology of Chronic Diseases-E2(2) ↓ ↓ ↓							

Biology and Sociology of Chronic Diseases-E2(2)	

[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Active class participation and group discussions 50%	
Written report 50%	
[Textbook]	
Not used	
[Reference book, etc.]	
(Reference book)	
Reference materials will be provided during the class.	
[Regarding studies out of class (preparation and review)]	
Students are expected to come to class having completed the assigned reading and writing, and ready to contribute to discussions.	
[Others (office hour, etc.)]	
Please contact the instructor by email if you have any questions. The instructor will also be available for course-related consultation out of lecture hours is requested by the students. Please make an appointment by email (medsocio.kyodai@gmail.com).	

Lecture code: U149001

Course numbering					
Course title <English>	Introduction to Basic Concepts of Health Psychology-E2 :Communication Issues and Decision-making in Patient Care			Affiliated department, Job title,Name	Graduate School of Medicine Associate Professor,ANAGNOSTOU, Despoina
	Introduction to Basic Concepts of Health Psychology-E2 :Communication Issues and Decision-making in Patient Care				
Group	Health and Sports		Field(Classification)	Health and Sports Sciences(Foundations)	
Language	English		Old group	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • First semester
Day/period	Tue.3		Target year	All students	Eligible students For all majors
[Outline and Purpose of the Course]					
This module will introduce the principle concepts of health psychology and its research basis. Students will develop an understanding of the integration of biomedical and psychosocial models of health care. They will develop knowledge about how health psychology can be incorporated into promotion and maintenance of health. In addition, this module will explore the impact of health psychology on the treatment of chronic illness, pain management and of its role in palliative care. Students will develop knowledge about the impact of health psychology onto the evolution of complex interventions research and its implications for clinical practice.					
[Course Goals]					
To develop understanding of the concept of health psychology To understand key theories of illness and its management within health psychology To explore illness management interventions, communication approaches and decision-making styles in health care To evaluate of complex interventions To understand key theories on pain and pain management in relation to chronic illness					
[Course Schedule and Contents]					
Session 1: Introduction to Health Psychology module Session 2: Defining health psychology Session 3: Models of health and illness; the biopsychosocial model and health psychology Session 4: The concept of wellness- implications for health Session 5: Psychological models of health-behavior change Session 6: Pain management and health psychology Session 7-8: Health psychology of chronic illness Session 9: Response shift as a psychological response to chronic illness Session 10: Challenges in communicating terminal disease: breaking bad news Session 11: The psychological burden of informal/family caregiving Session 12: Health psychology and complex interventions Session 13: Health promotion and health psychology Session 14-15: Presentations- feedback					
<small>Continue to Introduction to Basic Concepts of Health Psychology-E2 :Communication Issues and Decision-making in Patient Care(2) 1</small>					

<small>Introduction to Basic Concepts of Health Psychology-E2 :Communication Issues and Decision-making in Patient Care(2)</small>	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Evaluation via presentations	
[Textbook]	
Instructed during class References will be introduced during the course	
[Reference book, etc.]	
(Reference book) Introduced during class	
[Regarding studies out of class (preparation and review)]	
Preparation is required for the presentations	
[Others (office hour, etc.)]	
Key lectures will be given by the lecturer. Some group work will be introduced to discuss key issues in comparing Japan with the Europe. Students will give presentations during the last sessions of the course. Instructions for the presentations will be given in class. It is advisable to participate actively and share comments and ask questions during the class. Students should make an appointment through e-mail, in the case they need any advice.	

Lecture code: U148001

Course numbering					
Course title <English>	Structures and Mechanisms of Human Movement-E2		Affiliated department, Job title,Name	Graduate School of Medicine Associate Professor,PATAKY, Todd	
	Structures and Mechanisms of Human Movement-E2				
Group	Health and Sports		Field(Classification)	Health and Sports Sciences(Foundations)	
Language	English		Old group		Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Fri.3		Target year	Mainly 1st & 2nd year students	Eligible students For all majors
[Outline and Purpose of the Course]					
This course will apply basic mechanical principles to the study of human movement. Students will learn about the mechanisms that drive human motion, and how our bodies interact with the environment. Analysis of real experimental data and simple physics simulations will be used in assignments to emphasize fundamental and applied biomechanics concepts.					
[Course Goals]					
Students will learn the basics of human movement science, with focus on the concepts needed to describe and analyze human movement. Through assignments they will learn to connect these concepts to real-world problems in human movement.					
[Course Schedule and Contents]					
Over this 15-week lecture the following topics will be covered in each class:					
<ol style="list-style-type: none"> 1) Kinematics I: Linear 2) Kinematics II: Angular 3) Kinematics III: Projectile Motion 4) Dynamics I: Newton's Laws 5) Dynamics II: Impulse & Momentum 6) Dynamics III: Torque & Mass Center 7) Dynamics IV: Angular 8) Dynamics V: Angular Momentum 9) Dynamics VI: Work, Power & Energy 10) Collisions I: Ideal Collisions 11) Collisions II: Coefficient of Restitution 12) Collisions III: Friction 13) Kinematic Chains I: Basics 14) Kinematic Chains II: Dynamics 					
[Class requirement]					
None					
----- Continue to Structures and Mechanisms of Human Movement-E2(2) ↓ ↓ ↓					

Structures and Mechanisms of Human Movement-E2(2)
[Method, Point of view, and Attainment levels of Evaluation]
Students are expected to complete weekly assignments. Evaluation will be based on the following criteria: attendance and participation (10%), assignments (90%).
[Textbook]
Anthony J. Blazevich 『Sports Biomechanics: The Basics: Optimising Human Performance, 3rd Edition』 (Bloomsbury Sport) ISBN:978-1472917225 (2017 Edition)
[Regarding studies out of class (preparation and review)]
Every week there will be assignments based on lecture content. Some content will be directly related to the textbook, and other content will be explained in class; students who do not attend class or miss the assignment explanation may not be able to complete the assignment.
[Others (office hour, etc.)]


Lecture code: U155001

Course numbering					
Course title <English>	Psychopathology I-E2 Psychopathology I-E2		Affiliated department, Job title,Name	Graduate School of Human and Environmental Studies Associate Professor,TAJAN, Nicolas Pierre	
Group	Health and Sports	Field(Classification)	Health and Sports Sciences(Development)		
Language	English	Old group		Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • First semester
Day/period	Mon.4	Target year	All students	Eligible students	For all majors
[Outline and Purpose of the Course]					
This course introduces most common mental disorders (schizophrenia, depression, etc.) and their symptoms using videos and case studies. The approach is integrative: it combines most recent psychiatric definitions (DSM-5), psychopathological and psychoanalytical understanding of human distress. By the end of this course, students will know how to diagnose mental disorders such as schizophrenia and depression.					
[Course Goals]					
To provide you with a general introduction to and understanding of mental disorders. To increase your emotional intelligence through psychopathological knowledge. To help you develop your analytical and critical thinking regarding the diagnosis of mental disorders.					
[Course Schedule and Contents]					
1) Introduction 2) Developmental disorders: Autism spectrum disorder (ASD) 3) Schizophrenia I 4) Schizophrenia II 5) Paranoia: Paranoid personality disorder I 6) Paranoia: Paranoid personality disorder II 7) Hysteria: Histrionic personality disorder, conversion disorder, somatic symptom disorder 8) Obsessional neurosis: Obsessive Compulsive Disorder (OCD) 9) Depression I 10) Depression II 11) Trauma & psychopathology: Post Traumatic Stress Disorder (PTSD) 12) Culture & psychopathology: hikikomori I 13) Culture & psychopathology: hikikomori II 14) Conclusion 15) Final test 16) feedback					
[Class requirement]					
None					
----- Continue to Psychopathology I-E2(2) ↓ ↓ ↓					

Psychopathology I-E2(2)
[Method, Point of view, and Attainment levels of Evaluation]
Students are expected to actively participate to discussion and read material during class. Evaluation is based on the following: Attendance and participation (30%), 2 written responses at beginning of class 5 and 10 (30%), final test (40%).
[Textbook]
Relevant material is distributed in class.
[Reference book, etc.]
(Reference book) American Psychiatric Association. (2013) 『Diagnostic and statistical manual of mental disorders (5th ed.)』 (Washington, DC: American Psychiatric Publishing, Inc.) Barnhill, J. W. (Ed.). (2014) 『DSM-5 clinical cases』 (Arlington, VA, US: American Psychiatric Publishing, Inc.)
[Regarding studies out of class (preparation and review)]
Students do not have homework assignments. However, they are advised to take notes during class and to review the course material before written responses and final test.
[Others (office hour, etc.)]

Lecture code: U135001

Course numbering		U-LAS40 20031 LE26			
Course title <English>	Introduction to Medical Psychology-E2 Introduction to Medical Psychology-E2		Affiliated department, Job title,Name	Graduate School of Medicine Assistant Professor,VEALE, Richard Edmund	
Group	Health and Sports		Field(Classification)	Health and Sports Sciences(Development)	
Language	English		Old group	Group A	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Fri.3		Target year	All students	Eligible students For all majors
[Outline and Purpose of the Course]					
Mind and body cannot be separated from each other: psychological factors have a huge impact on our physical health. Our physical health also has a huge impact on our psychological health. This course aims at introducing students to basic psychological concepts that are most relevant for our health. It will discuss how sleep, emotions, personality, and stress influence our well-being and it will demonstrate how psychological factors affect physiological parameters.					
[Course Goals]					
- To understand the connection between psychological well-being and our physical health. - To get a basic understanding of how we can treat psychological and psychosomatic illness.					
[Course Schedule and Contents]					
1) Introduction to Medical Psychology 2) Measuring the human mind: psychological tests and psychophysiology 3) Intelligence and learning 4) Personality 5) Sleep 6) Emotions 7) Psychological stress and its role in health and disease 8) Experience of extreme conditions, post-traumatic stress-disorders, anxiety and phobia 9) Chronic pain 10) Depression and suicide 11) Substance abuse and dependence 12) Placebo and nocebo 13) Behavioral intervention strategies for improving health 14) Neurofeedback and brain-machine-interfaces 15) Feedback (Arrange by email) 16) Feedback (Arrange by email)					
[Class requirement]					
None					
----- Continue to Introduction to Medical Psychology-E2(2) ↓ ↓ ↓					

Introduction to Medical Psychology-E2(2)	
[Method, Point of view, and Attainment levels of Evaluation]	
Evaluation will be based on class attendance and active participation (30 points), short student presentation or report (15 points), and a 5 short in-class open-note tests (55 points), the lowest of which will be dropped. The in-class tests and report will test whether students have achieved the course goals. Students who are absent more than five times will not be credited.	
[Textbook]	
Not used Lecture notes will be provided during the course.	
[Regarding studies out of class (preparation and review)]	
To achieve the course goals students should review the course materials after each class. The time necessary for review should be in the range of 2 hours per class.	
[Others (office hour, etc.)]	
No fixed office hours, but students are welcome to arrange appointments by email.	

Lecture code: U154001

Course numbering					
Course title <English>		Cultural Aspects of Health Care-E2 Cultural Aspects of Health Care-E2		Affiliated department, Job title,Name Graduate School of Medicine Associate Professor,ANAGNOSTOU, Despoina	
Group		Health and Sports		Field(Classification) Health and Sports Sciences(Development)	
Language		English		Old group	
Number of weekly time blocks		1		Number of credits 2	
Class style		Lecture		Course offered year/period 2019 • Second semester	
Day/period		Tue.3		Target year All students	
Eligible students		For all majors			
[Outline and Purpose of the Course]					
This module will enable students to develop understanding of how cultures have different systems of health beliefs to explain what causes illness, how it can be cured or treated, and who should be involved in the process. This module will explore the influence of different religions, cultures, beliefs, and ethnic customs on how patients understand health concepts, how they take care of their health, and how they make decisions related to their health. Concepts of medical authority, treatment compliance, decision-making, communication of disease diagnosis and prognosis, communication between health care professionals and patients will be examined within different cultural contexts. This module will enable students to enhance their knowledge about the interplay between culture and health care and of their consequences in clinical practice.					
[Course Goals]					
To understand the concept of culture To understand the interplay of culture with health care To explore different cultural contexts and their impact onto health care To understand the importance of culture in organizing and delivering end of life care					
[Course Schedule and Contents]					
Session 1: Introduction to the module Session 2: Definition and different approaches to culture Session 3: Cultural beliefs in health care Session 4: The body: cultural definitions and approaches in health Session 5: Migration, globalization and health Session 6: Health care communication in different cultural contexts Session 7: Medical authority and treatment compliance Session 8: Families and social networks in health care Session 9: Pain and culture Session 10: Cultural aspects of stress and suffering Session 11: Chronic illness Session 12: Death and dying in different cultural contexts Session 13: The ethical debates of Euthanasia in different cultural contexts Session 14-15: Presentations- feedback					
----- Continue to Cultural Aspects of Health Care-E2(2) ↓ ↓ ↓					

Cultural Aspects of Health Care-E2(2)	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Students will be evaluated via presentations	
[Textbook]	
Instructed during class Material will be introduced during the course	
[Reference book, etc.]	
(Reference book) Introduced during class References will be provided during the course	
[Regarding studies out of class (preparation and review)]	
Preparation is required for the presentations	
[Others (office hour, etc.)]	
Key lectures will be given by the teacher. Some group work will be introduced to discuss key issues in comparing Japan with the Europe. Students will give presentations during the last sessions of the course. Instructions for the presentations will be given in class. It is advisable to participate actively and share views during the class. Students should make an appointment through e-mail, in the case they need any advice.	

Lecture code: U136001

Course numbering		U-LAS40 20029 LE26			
Course title <English>	Basic Biology and Metabolism-E2 Basic Biology and Metabolism-E2		Affiliated department, Job title,Name	Graduate School of Pharmaceutical Sciences Associate Professor,Fustin, Jean Michel	
Group	Health and Sports		Field(Classification)	Health and Sports Sciences(Development)	
Language	English		Old group	Group B	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Thu.4		Target year	Mainly 1st year students	Eligible students For science students
[Outline and Purpose of the Course]					
<p>In our world there is no form of matter more astonishing than the living cell: tiny, fragile, marvelously intricate, continually made afresh, yet preserving in its DNA a record of information dating back more than three billion years, to a time when our planet had barely cooled from the hot materials of the nascent solar system. Ceaselessly re-engineered and diversified by evolution, extraordinarily versatile and adaptable, the cell retains a complex core of self-replicating chemical machinery that is shared and endlessly repeated by every living organism on the face of the Earth in every animal, every leaf, every bacterium in a piece of cheese, every yeast in a vat of wine.</p> <p>Curiosity, if nothing else, should drive us to study cell biology; we need to understand cell biology to understand ourselves. But there are practical reasons, too, why cell biology should be a part of everyone's education. We are made of cells, we feed on cells, and our world is made habit-able by cells. The challenge for scientists is to deepen our knowledge of cells and find new ways to apply it. All of us, as citizens, need to know something of the subject to grapple with the modern world, from our own health affairs to the great public issues of environmental change, biomedical technologies, agriculture, and epidemic disease.</p> <p>This course is designed to provide the fundamentals of cell biology that are required by anyone to understand both the biomedical and the broader biological issues that affect our lives.</p> <p>This course is not recommended for students who already have selected specialized life science courses such as biochemistry and genetics. (Essential Cell Biology)</p>					
[Course Goals]					
Students will receive a basic understanding of the organisation and components of the cell.					
Knowing how a cell works will make the students aware of how our body works.					
By learning cellular biology and metabolism in English, students will acquire the ability to think and explain scientific concepts in English.					
[Course Schedule and Contents]					
WEEK 1-WEEK 2, Cells: The Fundamental Units of Life					
WEEK 3-WEEK 4, Chemical Components of Cells					
WEEK 5-WEEK 6, Energy, Catalysis, Enzymes and Biosynthesis					
WEEK 7-WEEK 9, Protein Structure and Function					
WEEK 10-WEEK 11, DNA and chromosomes					
Continue to Basic Biology and Metabolism-E2(2) ↓ ↓ ↓					

Basic Biology and Metabolism-E2(2)	

WEEK 12-WEEK 14, DNA replication, repair and recombination	
[Class requirement]	
There are no requirements, since the lecture will start from the basics!	
[Method, Point of view, and Attainment levels of Evaluation]	
Frequent problems presented orally to the students, in English, to assess their ability to formulate ideas and concepts (20%).	
One written mid-term examination, in English, will take place to assess the student's comprehension of the lecture (40%).	
A written final examination, in English, to assess the student's global understanding of the course (40%).	
[Textbook]	
Alberts B et al. 『Essential Cell Biology 4th edition』 (Garland Science) ISBN:81534455	
[Regarding studies out of class (preparation and review)]	
Students should review the textbook after the lecture by answering the questions provided. Reading the textbook in advance may facilitate the comprehension during the lecture.	
[Others (office hour, etc.)]	
Any questions and requests are welcome by prior arrangements via E-mail.	

Lecture code: W226001

Course numbering		U-LAS51 10016 SE48			
Course title <English>	Scientific English II-E3 (Presentation & Discussion)		Affiliated department, Job title,Name	Graduate School of Engineering Associate Professor,FLORES GIANCARLO	
	Scientific English II-E3 (Presentation & Discussion)				
Group	Career Development		Field(Classification)	International Communication	
Language	English		Old group	Group C	Number of credits 4
Number of weekly time blocks	1	Class style	Seminar		Course offered year/period 2019 • Year-round
Day/period	Fri.3		Target year	2nd year students or above	Eligible students For science students
[Outline and Purpose of the Course]					
Forbes magazine reports that "seventy percent of employed Americans who give presentations agree that presentation skills are critical to their success at work (...) The other 30% don't know it yet."					
In this new global and interconnected world, being able to clearly and succinctly communicate ideas is becoming more and more a basic requirement for success at work. Presentation skills are to the XXI century what English skills were to the XX century: a necessity, rather than a luxury.					
The aim of this class is to help you improve your communication proficiency, focusing on presentation and discussion skills in English.					
[Course Goals]					
At the end of the year, you should be able to present ideas in a concise and orderly manner, in both small and large settings, either individually or as part of a group. The principles behind the use of slideware, slidedocs, color and presentation theory, graphic creation, data delivery, etc., will be introduced during this two semester-long practical class.					
[Course Schedule and Contents]					
This practical class will divide the learning of presentation skills in the following building blocks:					
FIRST SEMESTER					
1. Guidance					
2. Individual Presentations					
3. Presentations					
4. Preparation					
5. Design					
6. Delivery					
7. Group Preparations					
8. Individual Presentations					
SECOND SEMESTER					
1. Exercise					
2. Technical Graphics					
3. Using slideware					
4. Slidedocs/Other Media					
Continue to Scientific English II-E3 (Presentation & Discussion)(2) ↓ ↓ ↓					

Scientific English II-E3 (Presentation & Discussion)(2)	

5. Technical Presentations	
6. Final Presentations	
These topics will take between one to four weeks each one, will be delivered throughout the two semesters assigned to this class, and will be built in conjunction with regular practice and discussion. You will have to prepare and present several individual and group presentations during the whole year.	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Evaluation will be based on class participation (20%), feedback from other students (10%), and feedback and scores from the instructor (70%). Details will be explained in class.	
To pass this class, you need to be able to proficiently prepare, design, and deliver general and technical presentations in English.	
[Textbook]	
Handouts will be provided at the beginning of each section.	
[Reference book, etc.]	
(Reference book)	
Garr Reynolds 『Presentation Zen: Simple Ideas on Presentation Design and Delivery』 ISBN: 9780321525659	
Nancy Duarte 『Slide:ology: The Art and Science of Creating Great Presentations』 ISBN:9780596522346	
Dan Roam 『Show and Tell: How Everybody Can Make Extraordinary Presentations』 ISBN: 9781591846857	
Dona Wong 『The Wall Street Journal Guide to Information Graphics』 ISBN:9780393072952	
Stephen Few 『Show Me the Numbers: Designing Tables and Graphs to Enlighten』 ISBN:9780970601971	
Edward Tufte 『The Visual Display of Quantitative Information』 ISBN:9780961392147	
[Regarding studies out of class (preparation and review)]	
As an eminently practical class, you will be expected to work on your own time, preparing and honing the ideas and presentations that you will deliver during class.	
Additional time to watch notable presentations online (TED, PechaKucha, Toastmasters, etc., as recommended by the instructor during classes) will be required.	
[Others (office hour, etc.)]	
Office hours will be provided during the first class.	

Lecture code: W227001

Course numbering		U-LAS51 10017 SE48			
Course title <English>	Advanced Scientific English-E3 (Debate)		Affiliated department, Job title,Name	Graduate School of Engineering Associate Professor,AN RIN	
	Advanced Scientific English-E3 (Debate)			Graduate School of Engineering Associate Professor,KHAYYER, Abbas	
				Graduate School of Engineering Associate Professor,KIM SUNMIN	
				Graduate School of Engineering Associate Professor,PIPATPONGSA, Thirapong	
				Graduate School of Engineering Associate Professor,QURESHI, Ali Gul	
				Graduate School of Engineering Senior Lecturer,Chang, Kai-Chun	
				Graduate School of Engineering Associate Professor,SCHMOECKER, Jan-Dirk	
Group	Career Development		Field(Classification)	International Communication	
Language	English		Old group	Group C	Number of credits 4
Number of weekly time blocks	1	Class style	Seminar		Course offered year/period 2019 • Year-round
Day/period	Wed.2	Target year	2nd year students or above		Eligible students For science students
[Outline and Purpose of the Course]					
This course aims at improving students' expressiveness and their ability to negotiate with others. Debating and negotiating are skills needed in most professions students will enter after graduation. The course aims to improve critical thinking and general abilities to discuss scientific issues.					
[Course Goals]					
1) To improve students ability to discuss scientific issues in a set format. Students will learn to defend their opinions and to react to counter-arguments. 2) Students will be introduced to a number of current issues in Civil Engineering through the debate topics.					
[Course Schedule and Contents]					
The first lectures will give an introduction to the course and to debating: What makes a good debate, introduction to how to prepare for a debate, some helpful tools for organizing the debate, etc. The following 28 lectures over the duration of the academic year are then grouped into seven units of 4 lectures, each unit is taught by a different faculty member and discusses different debate topics, often related to the teacher's research interest. Each unit has following outline. In Lecture 1 of a unit the topic will be introduced and students choose a role (pro or contra the debate motion). Then in Lecture 2 students collect some information and arguments on the topic by reading articles or collecting information from the internet. In the third class of each unit students are given presentation time to prepare their debate talk and to prepare for potential counter-arguments. In the final classes of each unit students are then performing the actual debate. Debate topics are chosen by teachers from engineering issues as well as current issues. Following topics are included in the course (the order might change).					
Weeks 1-4: Introduction, debate exercises					
Weeks 5-8: Debating on topics related to transport planning.					
Weeks 9-12: Debating on topics related to sustainable vs efficient technology.					
Weeks 13-14 and 16-17: Debating on topics related to current affairs.					
Continue to Advanced Scientific English-E3 (Debate)(2) ↓ ↓ ↓					

Advanced Scientific English-E3 (Debate)(2)
Weeks 18-21: Debating on topics related to large civil engineering projects.
Weeks 22-25: Debating on topics related to education and cultural issues.
Weeks 26-29: Debating on topics related to energy management.
Note: Weeks 15 and 30 are reserved for feedback classes.
[Class requirement]
None
[Method, Point of view, and Attainment levels of Evaluation]
The grade will be based mainly on the presentations about the debate topics (70%). In addition active participation in the class (20%) and reports (10%) are evaluated.
[Textbook]
No textbook is required for this course. Handouts will be distributed by the instructors as needed.
[Regarding studies out of class (preparation and review)]
Occasionally students will be asked to collect information material for the debates.
[Others (office hour, etc.)]

Lecture code: W228001

Course numbering		U-LAS51 10018 SE48			
Course title <English>	Business English-E3 Business English-E3		Affiliated department, Job title,Name	Graduate School of Management Associate Professor,WILLIAM BABER	
Group	Career Development		Field(Classification)	International Communication	
Language	English		Old group		Number of credits 2
Number of weekly time blocks	1	Class style	Seminar		Course offered year/period 2019 • First semester
Day/period	Tue.2		Target year	2nd year students or above	Eligible students For all majors
[Outline and Purpose of the Course]					
This course is for students with Intermediate to Low-Advanced English skills. Students with higher English skills may not take the course. The course practices English skills that are necessary for business.					
[Course Goals]					
Students will learn about - Formal business email - Informal business email - Summarizing (verbal and written) - Short written reports - Short verbal repesentations to small groups - Understanding and communicating precise rules					
[Course Schedule and Contents]					
Week 1: Informal work email, speaking skills Week 2: Formal and "bad news" email Week 3: Summarizing Week 4: Summarizing Week 5-14: Above skills, presenting, writing, and more.					
[Class requirement]					
Students with English skills below "Intermediate" or above "Low Advanced" will not be accepted. The course is targeted for students with middle level skills.					
[Method, Point of view, and Attainment levels of Evaluation]					
Students are graded based on the number and level of tasks completed. Tasks increase with difficulty as each level is cleared. The grading is explained further in class and in handouts.					
[Textbook]					
Students will receive materials from the professor.					
[Reference book, etc.]					
(Reference book) Students will receive materials from the professor.					
----- Continue to Business English-E3(2) ↓ ↓ ↓					

Business English-E3(2)
[Regarding studies out of class (preparation and review)]
Students are expected to complete tasks outside of class and in class. Class time is mainly for support, questionasking, and skills review with the professor.
[Others (office hour, etc.)]
In class meetings. Size limit: 20 students Size is limited in order to allow time for frequent interaction with the professor.

Lecture code: W228002

Course numbering		U-LAS51 10018 SE48			
Course title <English>	Business English-E3 Business English-E3		Affiliated department, Job title,Name	Graduate School of Management Program-Specific Associate Professor,HAN, Hyun Jeong	
Group	Career Development	Field(Classification)	International Communication		
Language	English	Old group		Number of credits	2
Number of weekly time blocks	1	Class style	Seminar	Course offered year/period	2019 • Second semester
Day/period	Tue.3	Target year	2nd year students or above	Eligible students	For all majors
[Outline and Purpose of the Course]					
This course is for students with Intermediate to Low-Advanced English skills. Students with higher English skills may not take the course. The course practices English skills that are necessary for business.					
[Course Goals]					
Students will learn about - Formal business email - Informal business email - Summarizing (verbal and written) - Short written reports - Short verbal presentations to small groups - Understanding and communicating precise rules					
[Course Schedule and Contents]					
Course Schedule and Contents Week 1: Informal work email, speaking skills Week 2: Formal and "bad news" email Week 3: Summarizing Week 4: Summarizing Week 5-14: Above skills, presenting, writing, and more.					
[Class requirement]					
Students with English skills below "Intermediate" or above "Low Advanced" will not be accepted. The course is targeted for students with middle level skills.					
[Method, Point of view, and Attainment levels of Evaluation]					
Students are graded based on the number and level of tasks completed.					
[Textbook]					
Students will receive materials from the professor.					
[Reference book, etc.]					
(Reference book) Students will receive materials from the professor.					
----- Continue to Business English-E3(2) ↓ ↓ ↓					

Business English-E3(2)
[Regarding studies out of class (preparation and review)]
Students are expected to complete tasks outside of class and in class. Class time is mainly for support, question asking, and skills review with the professor.
[Others (office hour, etc.)]
In class meetings. Size limit: 20 students Size is limited in order to allow time for frequent interaction with the professor. Office hours: Monday and Friday afternoons by appointment.

Lecture code: W229001

Course numbering		U-LAS51 10019 SE48			
Course title <English>	Business Thinking-E3 Business Thinking-E3		Affiliated department, Job title,Name	Graduate School of Management Associate Professor,WILLIAM BABER	
Group	Career Development		Field(Classification)	International Communication	
Language	English		Old group		Number of credits 2
Number of weekly time blocks	1	Class style	Seminar		Course offered year/period 2019 • First semester
Day/period	Wed.2	Target year	2nd year students or above		Eligible students For all majors
[Outline and Purpose of the Course]					
This course teaches some core approaches to thinking about business: understanding quality; understanding user reactions to products; understanding business models; and so on.					
[Course Goals]					
Students will learn about these basic concepts - they will be discussed and handled at a level appropriate to the knowledge and language skills of the class. - defining and communicating quality - understanding business processes - understanding business models with Business Model Canvas					
[Course Schedule and Contents]					
Week 1-3: Criteria for evaluating and communicating about quality Week 4-6: Business Process Mapping Week 7-10: Business Model Canvas Week 11-13: Business structures Week 14: In class presentations and course summary					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
Strong English speaking skills will be necessary. Students are expected to work in small groups in English weekly, and to make presentations to the class at least three times in the semester.					
[Textbook]					
Materials will be provided by the professor.					
[Reference book, etc.]					
(Reference book) Materials will be provided by the professor.					
[Regarding studies out of class (preparation and review)]					
Some projects will require work at home or outside of the classroom to collect information about businesses and products in Kyoto.					
[Others (office hour, etc.)]					
office hours: Monday and Friday afternoons by appointment.					

Lecture code: W230001

Course numbering		U-LAS51 10020 SE48			
Course title <English>	Negotiation-E3 Negotiation-E3		Affiliated department, Job title,Name	Graduate School of Management Associate Professor,WILLIAM BABER	
Group	Career Development		Field(Classification)	International Communication	
Language	English		Old group		Number of credits 2
Number of weekly time blocks	1	Class style	Seminar		Course offered year/period 2019 • First semester
Day/period	Tue.4		Target year	2nd year students or above	
			Eligible students	For all majors	
[Outline and Purpose of the Course]					
Tools and practical experience for conducting negotiations from pre-planning to agreement, so-called Harvard Method or Mutual Gains Negotiation. The course is conducted entirely in English and requires strong speaking and listening skills. The focus is generally on business, however the skills are applicable to other kinds of negotiation, such as politics. Practices may include remote negotiations with students in overseas universities.					
[Course Goals]					
Students will understand basic concepts such as alternative, zone of agreement, reserve points, planning, creating new value, problem solving, satisfaction, relationship building, and the overall process of negotiation.					
[Course Schedule and Contents]					
Lecture 1: Basic negotiation skills 1 Lecture 2: Basic negotiation skills 2 Lecture 3: Basic negotiation skills 3 Lecture 4-13: Case practices and skills Lecture 14: Overview					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
Ongoing evaluation of skills in class including verbal and written assignments.					
[Textbook]					
Baber, Chen 『Practical Business Negotiation』 (Routledge) ISBN:9781138781481					
[Regarding studies out of class (preparation and review)]					
Readings from the textbook may be assigned for preparation before class. Additional materials (cases) will be given to students for preparation before a practice negotiation.					
[Others (office hour, etc.)]					
Office hours: Monday and Friday afternoons by appointment					



Lecture code: W231001

Course numbering		U-LAS51 10021 SE48			
Course title <English>	Digesting Scientific English-E3 Digesting Scientific English-E3		Affiliated department, Job title,Name	Graduate School of Letters Professor,Anderson, James Russell	
Group	Career Development	Field(Classification)	International Communication		
Language	English	Old group		Number of credits	2
Number of weekly time blocks	1	Class style	Seminar	Course offered year/period	2019 • First semester
Day/period	Thu.1	Target year	2nd year students or above	Eligible students	For all majors
[Outline and Purpose of the Course]					
Students will be tutored in how to improve their English reading skills, using a variety of texts and exercises. Passages or terms identified as difficult will be analyzed and explained in simpler language, and possible alternatives presented. The structure and content of scientific reports will be examined. Short texts on a range of scientific topics followed by multiple-choice questions will be used to build confidence and understanding. The overall aim is to foster students' abilities to extract the most important content from scientific texts, find specific information, and draw appropriate conclusions.					
[Course Goals]					
Students will gain experience in reading scientific texts and extracting the most important information from them. They will also learn to identify good and poor scientific writing.					
[Course Schedule and Contents]					
<ol style="list-style-type: none"> 1. Introduction. Basic grammar and punctuation games 2. Issues in spelling, including American vs. British style 3. Identifying grammatically correct and incorrect statements 4. How to ask, and how not to ask questions in writing 5. Comprehension: extracting important information from texts 6. Comprehension: further exercises in extracting information from texts 7. Comprehension: identifying and retaining facts and concepts 8. Resolving ambiguities in texts 9. Informal in-class exercises 10. Common errors in scientific writing 11. Detecting errors in texts 12. Comparing texts: poor writing and good writing 13. Getting the message across: English on signs and packaging 14. Overview of issues 					
Note: The contents of specific classes may change.					
[Class requirement]					
None					
----- Continue to Digesting Scientific English-E3(2) ↓ ↓ ↓					

Digesting Scientific English-E3(2)
[Method, Point of view, and Attainment levels of Evaluation]
Evaluation will be based on class participation (20%) and a final, multi-component exam (80%).
[Textbook]
Not used Lecture notes/slides will be distributed and posted on KULASIS.
[Reference book, etc.]
(Reference book) Introduced during class.
[Regarding studies out of class (preparation and review)]
No special preparations are required before or after classes, other than revising the material covered.
[Others (office hour, etc.)]
There are no specific office hours. My e-mail address is: j.r.anderson@psy.bun.kyoto-u.ac.jp


Lecture code: W232001

Course numbering		U-LAS51 10022 SE48			
Course title <English>	Scientific Writing and Presenting in English-E3		Affiliated department, Job title,Name	Graduate School of Letters Professor,Anderson, James Russell	
	Scientific Writing and Presenting in English-E3				
Group	Career Development		Field(Classification)	International Communication	
Language	English		Old group		Number of credits 2
Number of weekly time blocks	1	Class style	Seminar		Course offered year/period 2019 • Second semester
Day/period	Thu.1		Target year	2nd year students or above	
			Eligible students	For all majors	
[Outline and Purpose of the Course]					
Students will be introduced to issues surrounding scientific writing and presenting. Topics will include how to avoid some of the most common errors of expression (both written and oral), through the use of examples and opportunities to practice. Focus will be on how to structure a scientific report and to write concisely in English, again with help from real-life examples. Teaching will include open discussions and opportunities for students to participate in “mini-symposia” as both presenters and discussants.					
[Course Goals]					
Students completing the course will have improved knowledge of the structure of scientific papers and presentations, as well as clearer ideas of what to do and what not to do to write or present successfully in English.					
[Course Schedule and Contents]					
<ol style="list-style-type: none"> 1. Introduction. Aims of scientific writing 2. Common errors to avoid when writing 3. Basic structure of psychology research papers 4. Writing in concise English 5. In-class construction of a report 6. Critical analysis of sample manuscripts 7. In-class exercises 8. Introduction to presenting in English 9. Some presentation hints 10. Visual aids: good and not so good 11. Asking questions, and responding orally in English 12. Student mini-symposium 1 (presentations, questions in English) 13. Student mini-symposium 2 (presentations, questions in English) 14. Overview of course 					
Note: The contents of specific lectures may change.					
[Class requirement]					
None					
----- Continue to Scientific Writing and Presenting in English-E3(2) ↓ ↓ ↓					

Scientific Writing and Presenting in English-E3(2)
[Method, Point of view, and Attainment levels of Evaluation]
Evaluation will be based on class participation (20%), a short oral presentation (10%) and a final written exam (70%).
[Textbook]
Not used Class notes/slides will be distributed.
[Regarding studies out of class (preparation and review)]
Students are expected to review the class hand-outs after each class.
[Others (office hour, etc.)]
There are no specific office hours. My e-mail address is: j.r.anderson@psy.bun.kyoto-u.ac.jp
<h1>Scientific Writing and Presenting in English</h1> <div style="display: flex; justify-content: space-around; align-items: center;">   </div> <p style="font-size: small; text-align: center;">*Please, I would appreciate your participation in class. I will do my best to answer your questions during the weekly presentations.</p>

Lecture code: Y212001

Course numbering		U-LAS61 10013 LE78			
Course title <English>	Introduction to Food Sustainability-E2 Introduction to Food Sustainability-E2		Affiliated department, Job title,Name	Graduate School of Agriculture Associate Professor,Garry John PILLER	
Group	Interdisciplinary Sciences		Field(Classification)	Environmental Sciences	
Language	English		Old group		Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Thu.2		Target year	Mainly 1st & 2nd year students	Eligible students For all majors
[Outline and Purpose of the Course]					
In this course an interdisciplinary, systems approach is taken to gain a working knowledge of the historical, social and ecological foundations of sustainability. In addition, we will explore emerging challenges presented by climate change, resource depletion, and the constraints imposed on modern food systems from an Asian perspective.					
[Course Goals]					
The expectations and goals for the students taking this course are as follows:					
<ol style="list-style-type: none"> 1. Be able to define and explain key issues in sustainable food systems from multiple perspectives. 2. Develop their critical and reflective thinking skills related to food, environmental, economical and social interactions. 3. Develop effective communication skills and be able to engage in thoughtful discussion of current food security issues 					
[Course Schedule and Contents]					
Class Schedule					
<ol style="list-style-type: none"> 1. Introduction 2. Origins of Sustainability 3. Tragedy of the Commons 4. Population Growth & Urbanization 5. Economic Development— Changes in Dietary Patterns 6. Food Security/ Sovereignty 7. Climate Change & its Impacts 8. Food: Biodiversity 9. Food: Water 10. Food: Energy 11. Food: Fertilizers 12. Food: Land & Soils 13. Food: Environmental Impacts/ Waste 14. Emerging Issues: Biotechnology, Biofuels 					
Feedback					
Continue to Introduction to Food Sustainability-E2(2) ↓ ↓ ↓					

Introduction to Food Sustainability-E2(2)	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Grading: Class attendance, active participation and listening quizzes (20%), weekly quizzes based on assigned pre-class reading materials (30%), mid-term essay (30%), and an in-class group presentation (20%).	
[Textbook]	
Not used	
[Reference book, etc.]	
(Reference book)	
Handouts and supplemental readings will be distributed electronically and/or as a hard copy in class	
[Regarding studies out of class (preparation and review)]	
Students should read or listen to the required pre-class materials and submit any required assignment before the class, and come to class ready to participate in class activities. Typically, this will entail listening to a short video or podcast (10 min. or less), as well as reading a 2 or 3 page handout and be prepared to write answers to 1 or 2 questions about the reading material in the following class (15 to 20 minutes provided in class).	
[Others (office hour, etc.)]	
Open door policy during office hours, and anytime by email.	
	

Lecture code: Y221001

Course numbering		U-LAS61 10016 LE80			
Course title <English>	Sustainable Forest Environment-E2 Sustainable Forest Environment-E2		Affiliated department, Job title,Name	Graduate School of Agriculture Assistant Professor,VILAYVONG, Khonesavanh	
Group	Interdisciplinary Sciences		Field(Classification)	Environmental Sciences	
Language	English		Old group		Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Thu.2		Target year	Mainly 1st & 2nd year students	Eligible students For all majors
[Outline and Purpose of the Course]					
This course introduces the basic forest environmental issues and concepts concerning the forest sustainability. The course is focused on (1) the basic physical science of climate change, climate models, and the impacts of climate change; (2) basic science on forest environment and ecosystems; (3) roles of forests and forest environmental issues; and (4) Sustainable approach of managing forests by the concept of "Reducing emissions from deforestation and forest degradation and the role of conservation, sustainable management of forests, and enhancement of carbon stocks in developing countries (REDD+).					
[Course Goals]					
1. To introduce students with knowledge and background on environmental issues related to climate change 2. To introduce students with underlying scientific theories, principles, practices, and measures for sustainable forest management 3. To help students acquire and apply technical knowledge and development practices on management practices for mitigation and adaptation to climate change in forest environment					
[Course Schedule and Contents]					
1. Global warming 2. Modelling the climate 3. Climate change and its impacts 4. Forests and forest ecosystems 5. Forest environment and its environmental values 6. Forest ecosystem functions - Basic forest hydrology 7. Forest ecosystem functions - Forest soils and nutrient cycles 8. Forest biodiversity 9. Forest hazard and disaster 10. Forest degradation and deforestation 11. Forests and sustainable development 12. Forest products and social values 13. Sustainable forest management 14. Revision and self-learning week 15. Examination 16. Feedback					
----- Continue to Sustainable Forest Environment-E2(2) ↓ ↓ ↓					

Sustainable Forest Environment-E2(2)	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Students' evaluation are conducted on the performance basis on (1) applying knowledge through answering mini-quizzes (20%); (2) developing scientific communication skills through writing summary reports of book chapters, research papers and oral presentation (30%); (3) writing a short academic styled essay of a case study using critical & problem-solving skills (10%); (4) final examination (40%)	
[Textbook]	
There is no official textbook for this course. The content of the course is an assembly of selected topics from various textbooks, references, online sources and libraries. It is students' duty to acquire the skill of collecting the topics as an supplementary class reading.	
[Reference book, etc.]	
(Reference book) John Houghton 『Global Warming: The Complete Briefing (5th Ed)』 (Cambridge University Press) ISBN:978-1-107-46379-0 (Only some chapters are covered) IPCC 『Climate Change 2013: The Physical Science Basis』 (IPCC) (Available online and in library)	
[Regarding studies out of class (preparation and review)]	
Students are encouraged to read and review reading materials before classes. Outcome of the reading will be assigned as a class performance, which accounts for the final grade.	
[Others (office hour, etc.)]	
After class, student consultation will be arranged with prior notice.	

Lecture code: Y225001

Course numbering					
Course title <English>	Introduction to Biogeochemistry-E2 Introduction to Biogeochemistry-E2		Affiliated department, Job title,Name	Graduate School of Agriculture Professor, Daniel Epron	
Group	Interdisciplinary Sciences		Field(Classification)	Environmental Sciences	
Language	English		Old group		Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Mon.3		Target year	Mainly 1st & 2nd year students	Eligible students For all majors
[Outline and Purpose of the Course]					
Biogeochemistry studies the physical, chemical and biological processes that govern the exchanges of energy and matter between the biosphere, the atmosphere and the lithosphere. The course presents the main terrestrial biogeochemical cycles and discusses how natural processes influence them and how they are altered by anthropogenic disturbances. Particular attention will be paid to the global carbon cycle and the importance of soil organic matter in this cycle. This subject is on the border of physics, chemistry, biology, and earth science. It brings important concepts that form the basis of environmental science.					
[Course Goals]					
Upon successful completion of this course, students will be able (i) to understand the role of biological, chemical and physical processes in determining the fate of the major elements ecosystems and in the terrestrial biosphere, and (ii) to anticipate the effects of management practices on soil organic matter and inherent site fertility.					
[Course Schedule and Contents]					
Course schedule: 1. Introduction to biogeochemistry: element reservoirs and fluxes 2. Biomass, primary production and net ecosystem production 3. Decomposition and mineralisation of organic matter under oxic condition. 4. Decomposition and mineralisation of organic matter under anoxic conditions. 5. Land use, land use change and soil organic matter 6. Methane oxidation by upland soils 7. Anthropogenic disturbances of major biogeochemical cycles: the global carbon cycle 8. Nutrient cycles and budget in terrestrial ecosystems 9. The biological cycle of nitrogen 10. Weathering and mineral alteration 11. Nutrient limitations and ecosystem fertility 12. Nutrients in aquatic ecosystems: oligotrophy and eutrophication 13. Anthropogenic disturbances of major biogeochemical cycles: the global N and P cycles 14. The hydrological cycle 15. End of Term Exam 16. Feedback					
----- Continue to Introduction to Biogeochemistry-E2(2) ↓ ↓ ↓					

Introduction to Biogeochemistry-E2(2)	
[Class requirement]	
Beneficial but not mandatory: basic knowledges in biology and chemistry (high school)	
[Method, Point of view, and Attainment levels of Evaluation]	
Grading: Class attendance and participation (10%), quizzes or questions based on assigned pre-class reading materials or on previous class content (two to three in-class 30 min. tests, 30%), end of term exam (60%). In no case will English language proficiency be a criterion for evaluating students. Tests and exams are designed to allow short answers. Class attendance is expected: students who are absent more than three times without sound reasons (documented unavoidable absence) will not be credited.	
[Textbook]	
Lecture notes will be provided after each class (uploaded on KULASIS).	
[Reference book, etc.]	
(Reference book) Chapin III FS, PA Matson, P Vitousek, P I. 『Principles of Terrestrial Ecosystem Ecology』 (Springer) ISBN:ISBN 978-1-4419-9503-2 (Recommended books to deepen the course content (not mandatory)) Schlesinger WH, Bernhardt ES 『Biogeochemistry: An Analysis of Global Change』 (Academic Press) ISBN:ISBN 978-0123858740 (Recommended books to deepen the course content (not mandatory))	
[Regarding studies out of class (preparation and review)]	
Students are expected to review the course materials distributed during previous classes and to read the pre-class materials when applicable (about two hours between two classes).	
[Others (office hour, etc.)]	
Students are encouraged to ask questions and to make comments during the class. Students are welcome to arrange appointments by email, even outside the official office hour, for questions and discussion	

Lecture code: Y208001

Course numbering		U-LAS61 10009 LE61			
Course title <English>	Chemistry, Society and Environment-E2 Chemistry, Society and Environment-E2	Affiliated department, Job title, Name	Graduate School of Energy Science Associate Professor, MCLELLAN, Benjamin		
Group	Interdisciplinary Sciences	Field(Classification)	Environmental Sciences		
Language	English	Old group	Group B	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture	Course offered year/period	2019 • First semester
Day/period	Wed.2	Target year	Mainly 1st & 2nd year students	Eligible students	For science students
[Outline and Purpose of the Course]					
Chemistry and chemical processes are very important in both the natural environment and in human society. It is important to understand how chemistry helps to develop the products and services that we utilise, as well as how chemical products from society impact the environment, and how we can mitigate such impacts.					
This class will introduce some of the important chemical processes and products that shape modern society, as well as examining the influence that they have on the environment. It will cover basic, important chemical processes that occur in nature as well.					
The course is aimed at those who are not specialists in chemistry, but are interested in chemistry and its application, history and influence.					
[Course Goals]					
Students will understand the importance of chemistry and its role in the modern world. Students will understand the importance of chemistry in relation to societal goals and environmental issues.					
[Course Schedule and Contents]					
The following topics will be covered (each numbered item is expected to be one week of class unless otherwise highlighted).					
Chemistry introduction					
1. The history of chemistry and its influence on society					
2. The scale of chemical industries and the comparison with global flows					
Introduction to the basics of important chemical processes:					
3. Energy chemistry (2 weeks)					
4. Water chemistry (2 weeks)					
5. Petrochemistry					
6. Pharmaceuticals / health chemistry					
7. Mineral chemistry					
Environmental issues and chemistry					
8. Global warming impacts					
9. Local chemical pollution					
Continue to Chemistry, Society and Environment-E2(2) ↓ ↓					

Chemistry, Society and Environment-E2(2)
10. Chemical solutions to environmental problems (2 weeks)
11. Summary and capstone class
[Class requirement]
No specific chemical background is needed Some basic chemical processes will be introduced, but chemistry knowledge will only be assessed in the context of the issues discussed.
[Method, Point of view, and Attainment levels of Evaluation]
Participation and small exercises (50%) Final exam or assignment (50%)
[Textbook]
Not fixed
[Reference book, etc.]
(Reference book) Introduced during class
[Regarding studies out of class (preparation and review)]
Small exercises out of class may be expected. Class slides will be provided for pre-reading.
[Others (office hour, etc.)]
Typically lectures will be given in class on campus. Consultation is available by prior arrangement.

Lecture code: Y213001

Course numbering		U-LAS61 10014 LE17			
Course title <English>	Introduction to Sustainable Development-E2		Affiliated department, Job title,Name	Graduate School of Energy Science Associate Professor,MCLELLAN, Benjamin	
	Introduction to Sustainable Development-E2			Graduate School of Global Environmental Studies Associate Professor,SINGER JANE	
Group	Interdisciplinary Sciences		Field(Classification)	Environmental Sciences	
Language	English		Old group		Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019・First semester
Day/period	Thu.4		Target year	Mainly 1st & 2nd year students	Eligible students For all majors
[Outline and Purpose of the Course]					
Sustainable development tries to satisfy people's present needs while maintaining the ability of future generations to meet their own needs. In this course we will explore how nations can try to balance growth with environmental health.					
[Course Goals]					
Students will gain an understanding of the core principles of sustainable development and their application through global and local case studies. At the conclusion of the course students will present their own development project proposals to the class.					
[Course Schedule and Contents]					
This course will cover the following topics:					
1. Introduction: Definition and principles of sustainable development (Singer)					
2. Identifying developed/developing countries and the goals of development (Singer)					
3. History of development and ODA, why some countries succeed (Singer)					
4. Population, migration and urbanization (Singer)					
5. Food, agriculture and rural issues (Singer)					
6. Natural capital (water and other resources, ecosystem services) (McLellan)					
7. Social capital (stakeholders, cultural sustainability) (McLellan)					
8. Energy issues (McLellan)					
9. Business, trade and globalization (McLellan)					
10. Global treaties, climate change and fair trade (McLellan)					
11. Case studies from Japan and the world (McLellan)					
12. Proposal preparation (Singer)					
13. Student development proposals (Singer/McLellan)					
14. Student development proposals and conclusion (Singer/McLellan)					
[Class requirement]					
Enthusiasm about the topic and willingness to share ideas in class.					
[Method, Point of view, and Attainment levels of Evaluation]					
1. Attendance and participation: 30%					
2. In-class exercises and short assignments: 25%					
3. Project outline: 5%					
4. Final presentations and report: 40%					
----- Continue to Introduction to Sustainable Development-E2(2) ↓ ↓					

Introduction to Sustainable Development-E2(2)	

Standard scoring scale will be applied	
[Textbook]	
Not used	
[Reference book, etc.]	
(Reference book)	
Richard Heinberg, Daniel Lerch 『The Post Carbon Reader: Managing the 21st Century's Sustainability Crises』 (Watershed Media) ISBN:978-0-9709500-6-2 (Not compulsory, but highly recommended.)	
R. Potter, D. Conway, R. Evans, and S. Lloyd-Evans 『Key Concepts in Development Geography』 (Sage) ISBN:978-0857025845 (Not compulsory, but highly recommended.)	
[Regarding studies out of class (preparation and review)]	
Final presentation requires students to spend time out of class hours in preparation.	
[Others (office hour, etc.)]	
	

Lecture code: Y209001

Course numbering		U-LAS61 10010 LE17			
Course title <English>	Human-environmental Interactions-E2 Human-environmental Interactions-E2		Affiliated department, Job title,Name	Graduate School of Global Environmental Studies Associate Professor,SINGER JANE	
Group	Interdisciplinary Sciences		Field(Classification)	Environmental Sciences	
Language	English		Old group	Group A	Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Thu.3		Target year	Mainly 1st & 2nd year students	Eligible students For all majors
[Outline and Purpose of the Course]					
This lecture-discussion course will introduce students to environmental studies with a focus on human-environmental interactions. We will apply an ecosystem framework to understand the drivers of environmental change, their natural and human impacts, and some possible approaches to ensure long-term sustainability.					
[Course Goals]					
Students will be encouraged to look critically at the environmental impacts of their own behavior as well as practices on the local, regional, national and international scale.They will consider such concepts as environmental ethics and environmental justice in relation to our obligations to each other and the natural world. Students will be expected to contribute their ideas and express themselves in small group discussions and classroom exercises.					
[Course Schedule and Contents]					
Each ecosystem will be the focus of study for approximately two weeks:					
Week 1: Course introduction. Environmental ethics					
Week 2: The state of ecosystems today: Defining ecosystem tradeoffs, products and services					
Week 3-4: Agroecosystems: Food supplies and food security, food production and livelihoods					
Week 5: Freshwater and coastal ecosystems: Impacts of pollution, dams					
Week 6: Natural disasters and environmental justice					
Week 7-8: Midterm exam. Forest ecosystems: Impacts of deforestation and forest neglect					
Week 9: Grasslands and arid lands: Overuse of natural resources					
Week 10: ESD: Transforming environmental knowledge, awareness and behavior					
Week 11: The global ecosystem: Climate changeissues					
Week 12: Presentation preparation					
Week 13: Presentation preparation					
Week 14: Group or individual presentations					
Note:The schedule may change slightly depending on class requirements					
[Class requirement]					
None					
----- Continue to Human-environmental Interactions-E2(2) ↓ ↓					

Human-environmental Interactions-E2(2)	
[Method, Point of view, and Attainment levels of Evaluation]	
Evaluation will be based on class attendance and active participation (30%), short assignments and classroom exercises (35%), mid-term test (10%) and group presentations (25%).	
[Textbook]	
No text; required readings and lecture notes will be distributed in class.	
[Reference book, etc.]	
(Reference book)	
E.F. Moran 『Environmental Social Science: Human-Environment Interactions and Sustainability』 (Wiley-Blackwell) ISBN:1405105747	
[Regarding studies out of class (preparation and review)]	
Students should download the Powerpoint file for the next class from the KULASIS site before class. All students will be expected to participate in classroom discussions and complete assignments. Please ask for clarification if necessary.If you miss a class, contact the instructor concerning assignments.	
[Others (office hour, etc.)]	
Please email the instructor to set up an office appointment. You will be informed of the instructor's email address in class.	
	

Lecture code: Y213002

Course numbering		U-LAS61 10014 LE17			
Course title <English>	Introduction to Sustainable Development-E2		Affiliated department, Job title,Name	Graduate School of Global Environmental Studies Associate Professor,SINGER JANE	
	Introduction to Sustainable Development-E2			Graduate School of Energy Science Associate Professor,MCLELLAN, Benjamin	
Group	Interdisciplinary Sciences		Field(Classification)	Environmental Sciences	
Language	English		Old group		Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Thu.4		Target year	Mainly 1st & 2nd year students	Eligible students For all majors
[Outline and Purpose of the Course]					
Sustainable development tries to satisfy people's present needs while maintaining the ability of future generations to meet their own needs. In this course we will explore how nations can try to balance growth with environmental health.					
[Course Goals]					
Students will gain an understanding of the core principles of sustainable development and their application through global and local case studies. At the conclusion of the course students will present their own sustainable development project proposals to the class, applying a Sustainable Development Goals (SDG) approach to determine the best approach for addressing specific societal and environmental problems.					
[Course Schedule and Contents]					
This course will cover the following topics: 1. Introduction: Definition and principles of sustainable development (Singer) 2. Identifying developed/developing countries and the goals of development (Singer) 3. History of development and ODA, why some countries succeed (Singer) 4. Population, migration and urbanization (Singer) 5. Food, agriculture and rural issues (Singer) 6. Natural capital (water and other resources, ecosystem services) (McLellan) 7. Social capital (stakeholders, cultural sustainability) (McLellan) 8. Energy issues, business, trade and globalization (McLellan) 9. Guest presentations on sustainable development issues (McLellan) 10. Global treaties, climate change and fair trade (McLellan) 11. Guest presentations on sustainable development issues (Singer) 12. Proposal preparation (Singer and McLellan) 13. Student development proposals (Singer/McLellan) 14. Student development proposals and conclusion (Singer/McLellan)					
[Class requirement]					
Enthusiasm about the topic and willingness to share ideas in class.					
----- Continue to Introduction to Sustainable Development-E2(2) ↓ ↓ ↓					

Introduction to Sustainable Development-E2(2)	
[Method, Point of view, and Attainment levels of Evaluation]	
1. Attendance and participation: 30% 2. In-class exercises and short assignments: 30% 3. Final presentations: 40%	
[Textbook]	
Not used	
[Reference book, etc.]	
(Reference book) Richard Heinberg, Daniel Lerch 『The Post Carbon Reader: Managing the 21st Century's Sustainability Crises』 (Watershed Media) ISBN:978-0-9709500-6-2 (Not compulsory, but highly recommended.) R. Potter, D. Conway, R. Evans, and S. Lloyd-Evans 『Key Concepts in Development Geography』 (Sage) ISBN:978-0857025845 (Not compulsory, but highly recommended.)	
[Regarding studies out of class (preparation and review)]	
Final presentation requires students to spend time out of class hours in preparation.	
[Others (office hour, etc.)]	
Please contact the instructor to set up an office meeting. You will be informed of the instructor's email address in class.	
	
----- Continue to Introduction to Sustainable Development-E2(2) ↓ ↓ ↓	

Lecture code: Y211001

Course numbering		U-LAS61 10012 LE68			
Course title <English>	Introduction to Biological Invasion-E2 Introduction to Biological Invasion-E2		Affiliated department, Job title,Name	Research Institute for Sustainable Humansphere Senior Lecturer, YANG, Chin-Cheng	
Group	Interdisciplinary Sciences		Field(Classification)	Environmental Sciences	
Language	English		Old group		Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • Second semester
Day/period	Thu.4		Target year	Mainly 1st & 2nd year students	Eligible students For all majors
[Outline and Purpose of the Course]					
The purpose of this introductory course is to provide students a fundamental understanding of biological invasions as invasive alien species represent the 2nd severest threat on Earth's ecosystems. This lecture will introduce various red-flag invasive species (from virus to vertebrate) that have been introduced into Japan and other parts of the world and focus on how these species impact the ecosystem. In addition to lectures, students will have opportunities to explore the invasive species through a diverse set of practices including field trip (campus or national park), movie and hands-on section.					
[Course Goals]					
Students will gain an understanding of the core principles of biology and management of invasive species from infamous examples (ex. fire ants, cane toad...). The ultimate goal is to have students confront the problems that we human beings have been ignoring and thus facilitate the global attention on this costly issue.					
[Course Schedule and Contents]					
In principal, the course will be offered as the following plan. However, the order or time for each theme may change depending on the progressive of the course or handling on current topics. Note that students may have to pay their own transportation fee for the proposed field trips.					
Week 01: Course introduction					
Week 02: Introduction to biological invasion I -General introduction of invasive species					
Week 03: Introduction to biological invasion II -How to become a successful invasive species					
Week 04: World worst invasive insect -Introduce world's worst invasive insects					
Week 05: World worst invasive arthropod -Introduce world's worst invasive non-insect arthropods					
Week 06: World worst invasive plant/fungus -Introduce world's worst invasive plants and fungi					
Week 07: Field trip* (see Others for more details)					
Continue to Introduction to Biological Invasion-E2(2) ↓ ↓ ↓					

Introduction to Biological Invasion-E2(2)	

Week 08: Movie for invasive disease/discussion -Watch a movie themed with invasive pathogen and discussion	
Week 09: World worst invasive mammals -Introduce world's worst invasive mammals	
Week 10: How invasive species related to global change/Discussion -How are invasive species benefited by global change	
Week 11: How invasive species threaten our Humansphere/Case study -Class discussion on various threats of invasive species on our society	
Week 12: How to control invasive species -Class activity to understand how to control invasive species in general	
Week 13: Student Oral presentation 01 -Group presentation	
Week 14: Student Oral presentation 02 -Group presentation	
Week 15: Term papers	
Week 16: Feedback	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
50% in-class discussion; 30% term paper; 20% presentation	
[Textbook]	
MA Davis 『Invasion biology』 (Oxford University Press, 2009)	
[Reference book, etc.]	
(Reference book) MN Clout, PA Williams 『Invasive species management: a handbook of principles and techniques』 (Oxford University Press, 2009)	
[Regarding studies out of class (preparation and review)]	
Students are encouraged to preview lecture materials and participate in class discussion, as lecture materials and most of the supplementary readings will be posted on KULASIS and Panda at least 1 day in advance.	
[Others (office hour, etc.)]	
Lecturer: Chin - Cheng Yang (ccyang@rish.kyoto - u.ac.jp) Office: HW 412, Research Building No. 1, Uji Campus Office hours: to be announced Note: There is a possibility that the instructor may organize a field trip that normally is a one-day event on the	
Continue to Introduction to Biological Invasion-E2(3) ↓ ↓ ↓	

Introduction to Biological Invasion-E2(3)

weekend, instead of the regular slot of this lecture. The lecturer will discuss date and time with students for the field trip at the beginning of the semester. Students are advised to pay the travel expense. Also, be advised to obtain the insurance for study and research “Personal Accident Insurance for Students Pursuing Ed. & Rsch.(学生教育研究災害傷害保険)” if you decide to take the class

Lecture code: Y210001

Course numbering		U-LAS61 10011 LE68			
Course title <English>	Insect-human Interactions-E2 Insect-human Interactions-E2		Affiliated department, Job title,Name	Research Institute for Sustainable Humansphere Senior Lecturer, YANG, Chin-Cheng	
Group	Interdisciplinary Sciences		Field(Classification)	Environmental Sciences	
Language	English		Old group		Number of credits 2
Number of weekly time blocks	1	Class style	Lecture		Course offered year/period 2019 • First semester
Day/period	Thu.4		Target year	Mainly 1st & 2nd year students	Eligible students For all majors
[Outline and Purpose of the Course]					
<p>The purpose of this course is to promote students' understanding of insects in our surroundings. The lecture will start with fundamentals of insects, followed by an introduction to "bad" or "good" insects from the human perspectives. The course will focus student's attention on</p> <ol style="list-style-type: none"> 1. how important insects are in our daily life; 2. how insects threaten our life quality; 3. how human manipulate insect populations to restore the balance between the two parties. <p>Examples from classic case studies will be utilized to bridge non-biology background students with the course content. Hands-on sections and possibly a field trip will be conducted to facilitate students' awareness and knowledge of the common insects in the daily life.</p>					
[Course Goals]					
<p>The expectations and goals for the students taking this course are</p> <ol style="list-style-type: none"> 1. students can get to understand "benefits" and "threats" of insects to mankind; 2. to understand how insects are related to human and our society; 3. eventually pay more attention/respect on this group of creatures. 					
[Course Schedule and Contents]					
<p>In principal, the course will be offered as the following plan. However, the order or time for each theme may change depending on the progressive of the course or handling on current topics. Note that students may have to pay their own transportation fee for the proposed field trips.</p> <p>Week 01: Course introduction</p> <p>Week 02: What are insects? -Introduce what insects look like and general insect biology</p> <p>Week 03: Insect vs. human -The relationship between insect and human in general</p> <p>Week 04: Good insects: Let's eat insects, shall we? -Edible insects and human beings</p> <p>Week 05: Good insects: Insect-inspired products in our daily life -How human society is benefited by insect-related inspiration</p>					
Continue to Insect-human Interactions-E2(2) ↓ ↓ ↓					

Insect-human Interactions-E2(2)	

<p>Week 06: Good insects: Insects as ecosystem service providers -The role of insect in our ecosystem</p> <p>Week 07: Good insects: Biological control using insects -Insects that serve in our agriculture</p> <p>Week 08: Insect collection trip (@ Yoshida campus) -Collect insects at Yoshida campus</p> <p>Week 09: Bad insects: Insects that vector disease -Vector-borne disease</p> <p>Week 10: Bad insects: Insects as nuisance pest/entomophobia 01 -Household pest insects including cockroach, ant and others</p> <p>Week 11: Bad insects: Insects as nuisance pest/entomophobia 02 -Household pest insects including cockroach, ant and others</p> <p>Week 12: Bad insects: Venomous & poisonous insects -Insects that are poisonous and possess a venomous sting</p> <p>Week 13: Student oral presentation 01 -group presentation</p> <p>Week 14: Student oral presentation 02 -group presentation</p> <p>Week 15: Term paper</p> <p>Week 16: Feedback</p>	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
50% in - class discussion, 30% term paper, 20% presentation	
[Textbook]	
MR Berenbaum 『Bugs in the system: insects and their impact on human affairs』 (Perseus Publishing, 1995)	
[Reference book, etc.]	
<p>(Reference book) Introduced during class to be announced according to the content of a given class each week</p>	

Continue to Insect-human Interactions-E2(3) ↓ ↓ ↓	

Insect-human Interactions-E2(3)

[Regarding studies out of class (preparation and review)]

Students are encouraged to preview lecture materials and participate in class discussion, as lecture materials and most of the supplementary readings will be posted on KULASIS and PandA at least 1 day in advance.

[Others (office hour, etc.)]

Lecturer: Chin - Cheng Yang (ccyang@rishi.kyoto-u.ac.jp)

Office: HW 412, Research Building No. 1, Uji Campus

Office hours: to be announced

Note: There is a possibility that the instructor may organize a field trip that normally is a one-day event on the weekend, instead of the regular slot of this lecture. The lecturer will discuss date and time with students for the field trip at the beginning of the semester. Students are advised to pay the travel expense. Also, be advised to obtain the insurance for study and research “Personal Accident Insurance for Students Pursuing Ed. & Rsch.(学生教育研究災害傷害保険)” if you decide to take the class

Lecture code: Y214001

Course numbering		U-LAS61 10015 LE14			
Course title <English>		Natural Disaster Science-E2 Natural Disaster Science-E2		Affiliated department, Job title,Name Disaster Prevention Research Institute Associate Professor,Sameh Kantoush	
Group		Interdisciplinary Sciences		Field(Classification) Environmental Sciences	
Language		English		Old group Group B	
				Number of credits 2	
Number of weekly time blocks		1		Class style Lecture	
				Course offered year/period 2019 • Second semester	
Day/period		Tue.4		Target year All students	
				Eligible students For all majors	
[Outline and Purpose of the Course]					
<p>This course will give students an introduction to the utilization of natural resources and natural disasters in the earth that impact humanity and life in general. The aim of this course will emphasize the fundamental scientific principles to explain current technical issues and impacts of climate change on water related disasters in the world such as flood, high tide, tsunami, landslides, severe weather, and sediment related disasters. Historic catastrophes will be emphasized. Based on these understandings, all students will study causes, effects, and options available to predict, control, and mitigate natural disasters and social scientific approaches. Examples from recent and ancient history will be used and, whenever possible, Japanese examples will be identified. Knowledge gained in this course will allow for a better understand the world around us and a greater appreciation of the potential issues moving forward for humans.</p>					
[Course Goals]					
<p>By the end of this course student will:</p> <ul style="list-style-type: none"> -Understanding of the world around us and a greater appreciation of the potential issues moving forward for humans. -Be able to distinguish and analyze various types of natural disasters -Be able to identify causes and assess significance of natural disasters for human -Be able to gain analytical skills for how to develop strategies for prediction, mitigation of flooding, climate change impacts and sedimentation disasters 					
[Course Schedule and Contents]					
<p>Week1: Introduction to Natural Disasters and Hazards Week2: Disaster Risk Reduction, Management and Risk Assessment Week3-4: Geological Hazards: Earthquakes Causes, Measurements, Mitigation and Risks Week5: Climate Change and Global Warming Week6: Understanding Natural Disasters : Focus on Tropical Cyclones Week7: Report and Group Presentations Week8-9: Flooding as a Hazard: Monitoring, Predication, and Mitigation Measures Week10: Tsunamis: Physics, Modelling, and Engineering Solutions for Hazard Mitigation Week11: Coastal Hazards Week12-13: Landslides and Debris Flow Disaster: Monitoring, Predication, and Mitigation Week14: Warning and Evacuation Week15: Revision and Summary (group presentation) ※Feedback</p>					
Continue to Natural Disaster Science-E2(2) ↓ ↓ ↓					

Natural Disaster Science-E2(2)	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
<p>Grades will be based on participation and collaboration in group work discussions and cooperative activities, writing reports associated with each topic of natural disasters that have occurred during the course. Evaluation will be based on class attendance, active participation (30%) and reports and group presentations on major natural disasters occur during the time period of the course (70%).</p>	
[Textbook]	
E.A. Keller and D.E. DeVecchio 『Natural Hazards, Earth's Processes as Hazards, Disasters, and Catastrophes, 』 (Pearson) ISBN:10 0-321-93996-4	
[Regarding studies out of class (preparation and review)]	
Students are requested to read carefully listed textbook and access to historical case studies on each natural disaster through website and related literatures.	
[Others (office hour, etc.)]	
Class participation and questions are very welcome during the lectures or at the end of the lecture. The schedule of office hours will be announced later. Moreover, if you have extra question, students may contact me by email.	

Lecture code: Z002075

Course numbering		U-LAS70 10002 SE50			
Course title <English>	ILAS Seminar-E2 :Global Environmental Issues (地球環境問題)		Affiliated department, Job title,Name	Graduate School of Agriculture Professor,Daniel Epron	
	ILAS Seminar-E2 :Global Environmental Issues				
Group	Seminars in Liberal Arts and Sciences		Number of credits	2	Number of weekly time blocks
					1
Class style	Seminar		Course offered year/period	2019・First semester	
				Quota (Freshman)	15 (15)
Target year	Mainly 1st year students	Eligible students	For all majors		Day/period
					Mon.5
Classroom	04, Yoshida-South Campus Bldg. No. 1			Language	English
Keyword	Climate change / Land degradation / Pollution / Resource depletion / Biodiversity				
[Outline and Purpose of the Course]					
Several environmental problems preoccupy peoples around the world. They result from conflicts between natural and human systems, affect our daily life and compromise our future. This seminar will explore how several environmental issues are addressed at the regional, national or international level, and how ecology and environmental science are used as a basis for addressing and tackling these issues.					
[Course Goals]					
Upon successful completion of this seminar, students will (i) have a basic scientific understanding of the major environmental issues, and will be able (ii) to critically assess these issues and (iii) to develop decision-making skills for proposing sustainable options for the future.					
[Course Schedule and Contents]					
The course will be based on in-depth analyses of several case studies that will be related to either: - Climate change: vulnerability, adaptation and mitigation - Heat waves and urban heat islands - Air pollution: ozone in the troposphere - Water pollution: eutrophication of aquatic ecosystems and scarcity of fresh water resources - Nitrogen deposition: vegetation shifts - Land degradation and restoration - Pesticides and endocrine disruptor - Resource depletion: overfishing and fishing allowance - Habitat fragmentation and endangered species The first class will be an introduction and overview of course content. We will review the major environmental issues through reading a scientific paper. Students will work as small teams (optimally five teams) on one of these subjects they will select. Each team will have to read in depth relevant scientific papers, first provided by the instructor and then find by the student that that will present to the group during the next class as a starting point of a discussion. For all subjects that will be analyzed simultaneously, the guideline of the course will be (i) problem definition, (ii) quantification of impacts, (iii) vulnerability assessment and (iv) identification of appropriate solutions to solve it.					
(1) Introduction and selection of case studies [1 week] (2) Problem definition [2-3 weeks] (3) Quantification of impacts [3-4 weeks]					
----- Continue to ILAS Seminar-E2 :Global Environmental Issues (地球環境問題)(2) ↓ ↓ ↓					

ILAS Seminar-E2 :Global Environmental Issues (地球環境問題)(2)	

(4) Vulnerability assessment[3-4 weeks] (5) Identification of appropriate solutions [3-4 weeks] (6) Final restitution [1week] (7) Feedback [1week]	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Grading: Class attendance and participation (20%, students are expected to actively participate in discussion), oral presentation (40% during the class hours), written report (40%). In no case will English language proficiency be a criterion for evaluating students. Class attendance is expected: students who are absent more than three times without sound reasons (documented unavoidable absence) will not be credited.	
[Textbook]	
No textbooks; reading materials will be distributed during the class or after the class (uploaded on KULASIS).	
[Reference book, etc.]	
(Reference book)	
None	
[Regarding studies out of class (preparation and review)]	
Students are expected to read the distributed scientific papers, to find additional ones and to prepare oral presentations. Works on team project outside of class hours is expected (about three hours between two classes).	
[Others (office hour, etc.)]	
Students are encouraged to ask questions and to make comments during the class. Students are welcome to arrange appointments by email, even outside the official office hour, for questions and discussion	

Lecture code: Z002002

Course numbering		U-LAS70 10002 SE50			
Course title <English>	ILAS Seminar-E2 :Introduction to Computation and Logic (計算と論理への入門)		Affiliated department, Job title,Name	Graduate School of Human and Environmental Studies Program-Specific Senior Lecturer,DE BRECHT, Matthew	
	ILAS Seminar-E2 :Introduction to Computation and Logic				
Group	Seminars in Liberal Arts and Sciences	Number of credits	2	Number of weekly time blocks	1
Class style	Seminar	Course offered year/period	2019・First semester	Quota (Freshman)	5 (5)
Target year	Mainly 1st year students	Eligible students	For all majors	Day/period	Mon.5
Classroom	1306, Faculty of Integrated Human Studies			Language	English
Keyword	computation / logic				
(Students of Faculty of Integrated Human Studies cannot take this course as liberal arts and general education course. Please register the course with your department.)					
[Outline and Purpose of the Course]					
Computers are a relatively recent invention, but they have drastically changed how modern humans live and think. However, few people really know what it means to "compute" something, or how we discovered the basic principles of computation. It turns out that the discovery of computation has its roots in the development of formal logic and a determination to find a rigorous foundations for mathematics about a century ago. In this course, we will introduce the students to formal logic and its relationship with computation. We will also introduce some of the main people involved with the various discoveries, and emphasize the historical background and motivations. The aim of the course is for students to not only gain a deeper understanding of computation, but also understand how it was discovered.					
[Course Goals]					
The students will become familiar with logical reasoning, formal proofs, and the theory of computability. This will help the student develop skills that are important in any field of research, such as critical thinking and the ability to construct rigorous arguments. Students will also become familiar with the historical background and motivations that led to the development of formal logic and computation.					
[Course Schedule and Contents]					
Below are some possible topics that we will cover during the course. The topics we cover will depend on the interests and abilities of the students.					
<ol style="list-style-type: none"> 1) Propositional logic 2) First-order Predicate logic (Frege) 3) First-order Arithmetic (Peano) 4) Set theory (Cantor) 5) Paradoxes, foundations & Hilbert's program (Russell, Hilbert) 6) Intuitionism & constructive mathematics (Brouwer) 7) Incompleteness theorem (Godel) 8) Lambda calculus, Church numerals, and arithmetic (Church) 9) Turing machines and Turing completeness (Turing) 10) Further topics (Curry-Howard correspondence) 					
Continue to ILAS Seminar-E2 :Introduction to Computation and Logic (計算と論理への入門) (2) ↓ ↓ ↓					

ILAS Seminar-E2 :Introduction to Computation and Logic (計算と論理への入門) (2)	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Students are expected to actively participate in discussion, read material, and solve exercises in class. Evaluation will approximately be based on the following: class participation (30%), written and oral assignments (30%), final (40%)	
[Textbook]	
No textbook. Relevant materials will be distributed in class.	
[Reference book, etc.]	
(Reference book)	
The following books might be useful as references and background reading, but are not required. We will also look at some original papers, which will be handed out in class.	
1) "Logic in Computer Science" by Michael Huth and Mark Ryan Publisher: Cambridge University Press (2004), ISBN: 978-0521543101	
2) "A profile of mathematical logic" by Howard DeLong. Publisher: Dover Publications (2004), ISBN: 978-0486434759	
3) "A Beginner's Guide to Mathematical Logic" by Raymond Smullyan. Publisher: Dover Publications (2014), ISBN: 978-0486492377	
4) "Introduction to Mathematical Logic" by Elliott Mendelson. Publisher: Chapman and Hall (2015), ISBN: 978-1482237726	
5) "Godel, Escher, Bach" by Douglas Hofstadter. Publisher: Basic Books (1999), ISBN: 978-0465026562	
[Regarding studies out of class (preparation and review)]	
Students should review the course material after each class, and will have homework assignments.	
[Others (office hour, etc.)]	
	

Lecture code: Z002048

Course numbering		U-LAS70 10002 SE50					
Course title <English>	ILAS Seminar-E2 :Introduction to Engineering in Biology and Medicine (医工学の基礎)		Affiliated department, Job title,Name	Institute for Frontier Life and Medical Sciences Senior Lecturer,OKEYO, Kennedy Omondi			
	ILAS Seminar-E2 :Introduction to Engineering in Biology and Medicine						
Group	Seminars in Liberal Arts and Sciences		Number of credits	2	Number of weekly time blocks	1	
Class style	Seminar		Course offered year/period	2019・First semester		Quota (Freshman)	10 (10)
Target year	Mainly 1st year students	Eligible students	For all majors		Day/period	Mon.5	
Classroom	21, Yoshida-South Campus Bldg. No. 1				Language	English	
Keyword	Biomedical engineering / Medicine / Biological systems / Biomanipulation						
[Outline and Purpose of the Course]							
With increasing integration of science and engineering, more and more focus is being placed on multidisciplinary research. Against this background, this seminar will aim at introducing students, in particular first year students, to on-going engineering approaches aimed at understanding and/or solving biological and clinical problems. Discussions will be centered on (biological/clinical) problem identification, hypothesis setting around the problem, discussions on potential engineering solutions and, as may be necessary, experimental verification of the discussed solution(s).							
[Course Goals]							
This seminar is intended to help students develop interest in knowledge integration across different scientific disciplines, and to be able to formulate and apply concepts learnt to problem-solving in biology, medicine and health sciences.							
[Course Schedule and Contents]							
This seminar will tackle selected topics related to application of engineering principles and knowledge to solving clinical problems, and/or elucidating known and unknown biological phenomena. Although the topics listed below are wide and varied, discussions will center on problem setting and solving with focus on understanding current multidisciplinary research areas expected to revolutionize the future of medicine.							
1) Engineering in biology at the micro and nano scale and their clinical applications (3 weeks) We will discuss the convergence of biology with micro/nano technology that have enabled the manipulation, analysis and detailed study of living systems including single cells, DNA molecules and other biological materials. Engineering principles behind micro/nano technology will be highlighted and potential clinical applications discussed.							
2) Introduction to point-of-care diagnostics (3 weeks) Provision of medical care at the bedside of a patient or at home (at the comfort of a patient) is increasingly becoming important in the face of a rapidly aging society. Here we will identify and discuss emerging technologies such as microfluidics/wearable clinical devices that are enabling the realization of point-of-care or personalized medicine.							
3) Introduction to emerging trends in engineering artificial organs/tissues (3 weeks)							
Continue to ILAS Seminar-E2 :Introduction to Engineering in Biology and Medicine (医工学の基礎) (2) ↓ ↓ ↓							

ILAS Seminar-E2 :Introduction to Engineering in Biology and Medicine (医工学の基礎) (2)

Fusion of engineering and biology has made it possible to realize constructs of organs or tissues which mimic the functions of native organs/tissues. One such technology is "organ-on-a-chip" which borrows from the semiconductor technology to fabricate organ or tissues models on a chip for disease modeling and drug development. Here, we will discuss emerging trends in fabricating on-chip body organs/tissues, and highlight the potential applications of this technology in disease modeling, drug development and basic biology.

4) Advances in biomedical engineering and applications (2 weeks)

Rapid progress in micro/nano engineering have yielded small devices which are increasingly finding application in cell, DNA and protein analyses for disease diagnosis and drug screening. In this seminar, we will look at specific examples of new trends in biomedical engineering and specific application in areas such as cancer immunotherapy, detection of circulating tumor cells, DNA analysis, among others.

5) Discussions on the future role of engineering in biology and medicine (3 weeks)

We will discuss the importance of multidisciplinary research and highlight emerging technologies such as brainchips, wearable diagnostic devices that are promising to revolutionize traditional medicine, drug discovery, cancer research and personal disease management. On a rotational basis, students will each pick a topic of interest for discussion and presentation. Grading will be based on how well a topic is researched, presented and discussed.

6) Lecture review and student presentations (2 week)
[Class requirement]

None in particular. The seminar will be discussion-based, so prior preparation by way of reading about the above topics will be helpful in making the discussions lively.

[Method, Point of view, and Attainment levels of Evaluation]

Attendance and active class participation 60%, Discussions and Presentations: 40%

[Textbook]

Handouts

[Reference book, etc.]
(Reference book)

Yoshihiro Ito 『Biochip Technologies-Principles and Applications』 (CMC Books) ISBN:9784781310794
(Biodesign: The Process of Innovating Medical Technologies 2nd Edition by Paul G. Yock and others, ISBN-13: 978-1107087354)

[Regarding studies out of class (preparation and review)]

Prior reading of scientific papers on topics to be discussed is recommended to enhance understanding.

[Others (office hour, etc.)]

To be announced during class. However, questions, suggestions and comments can be posted by email anytime.



<http://www.shmoop.com/biotechnology/>

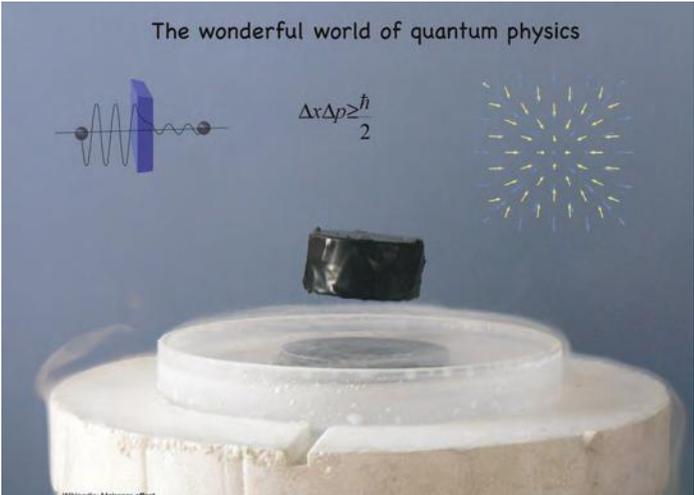
Lecture code: Z002026

Course numbering		U-LAS70 10002 SE50			
Course title <English>	ILAS Seminar-E2 :Methods in Ecology and Natural History (生態学・自然史学の手法)		Affiliated department, Job title, Name	Graduate School of Science Associate Professor, BARNETT, Craig Antony	
	ILAS Seminar-E2 :Methods in Ecology and Natural History				
Group	Seminars in Liberal Arts and Sciences	Number of credits	2	Number of weekly time blocks	1
Class style	Seminar	Course offered year/period	2019・First semester	Quota (Freshman)	10 (10)
Target year	Mainly 1st year students	Eligible students	For all majors	Day/period	Mon.5
Classroom	22, Yoshida-South Campus Bldg. No. 1			Language	English
Keyword	野外研究 / 鳥類 / 都市環境				
[Outline and Purpose of the Course]					
Field research is an essential component of ecology because without it we could not compile models and test hypotheses. In this course we will use field techniques such as point counts to obtain a data set from different parts of the urban environment in Kyoto make comparisons among them in order to understand what species live in these different areas and how the environment can be related to their natural history. Students will work in teams and collect data and then data will be pooled and analyzed in class. Students will work as teams for their presentations, but will submit their own written report.					
[Course Goals]					
1) Learn to identify birds in Kyoto and surrounding areas 2) Learn how to conduct a scientific experiment 3) Learn some facets of avian natural history 4) Data analysis and presentation 5) How to write a scientific report in English using the data we collected					
[Course Schedule and Contents]					
1) Course introduction, designing an experiment 2) How to design a field experiment. 3) Identifying birds 4) Identifying birds 5) Collecting data 6) Collecting data 7) Collecting data 8) Collecting data 9) Collation and data exploration 10) Data analysis 11) Writing an abstract and introduction 12) Methods and results 13) Discussion and conclusions 14) Peer review 15) Group presentations 16) Feedback					
<small>Continue to ILAS Seminar-E2: Methods in Ecology and Natural History (生態学・自然史学の手法) (2) ↓ ↓ ↓</small>					

<small>ILAS Seminar-E2: Methods in Ecology and Natural History (生態学・自然史学の手法) (2)</small>	
[Class requirement]	
Understanding of high school biology is recommended.	
[Method, Point of view, and Attainment levels of Evaluation]	
Assessment will comprise of participation in data collection and in-class activities (50%), and a final presentation and report (50%).	
[Textbook]	
Reading materials distributed during classes.	
[Reference book, etc.]	
(Reference book)	
C. J. Bibby, N. D. Burgess, D. A. Hill, and S. H. Mustoe 『Bird Census Techniques 2nd Edition』 (Academic Press)	
W. J. Sutherland, I Newton, and R. E. Green 『Bird Ecology and Conservation: A Handbook of Techniques』 (Oxford University Press)	
M. Brazil 『Birds of East Asia』 (Princeton University Press)	
[Regarding studies out of class (preparation and review)]	
To achieve the course goals students should review the course materials plus optionally the recommended readings after each class. The time necessary for review should be in the range of 2-3 hours per class.	
[Others (office hour, etc.)]	
Take out accident insurance. (Partial Refund of Premium Paid for Personal Accident Insurance for Students Pursuing Education and Research (Gakkensai))	
	
Two Japanese Great Tit nestlings from the same nest show the differences in size that can occur through individuals hatching at different times.	(c) Craig Barnett
A free-living South Island Robin being used in research	

Lecture code: Z002003

Course numbering		U-LAS70 10002 SE50			
Course title <English>	ILAS Seminar-E2 :The wonderful world of quantum physics (素晴らしい量子物理の世界)		Affiliated department, Job title,Name	Graduate School of Science Senior Lecturer,PETERS,Robert	
	ILAS Seminar-E2 :The wonderful world of quantum physics				
Group	Seminars in Liberal Arts and Sciences	Number of credits	2	Number of weekly time blocks	1
Class style	Seminar	Course offered year/period	2019・First semester	Quota (Freshman)	15 (15)
Target year	Mainly 1st year students	Eligible students	For all majors	Day/period	Mon.5
Classroom	23, Yoshida-South Campus Bldg. No. 1			Language	English
Keyword	quantum mechanics / particles and wave / quantum phenomena / superconductivity				
[Outline and Purpose of the Course]					
We will start with an introduction to crucial experiments 100 years ago, which have changed the beliefs of the physicists about small particles and atoms. From there, we will understand the differences between macroscopic and microscopic world and the basic concepts of modern quantum theory. In the second part of the course, we will look at quantum phenomena and applications of them such as quantum teleportation, quantum computing, entanglement, magnetism, and superconductivity.					
[Course Goals]					
<ul style="list-style-type: none"> - Catching a glimpse of the bizarre behavior of the quantum world. - Seeing the differences between macroscopic and microscopic world - Becoming familiar with the basic concepts of quantum physics - Revealing the mysteries behind quantum phenomena such as magnetism, superconductivity, and entanglement. 					
[Course Schedule and Contents]					
The course will be adapted to the level of the students. Therefore, the number of weeks may change.					
<ul style="list-style-type: none"> - Introduction to experiments on atoms and quantum-particles which have changed the beliefs of physicists 100 years ago (4-6 weeks) <ul style="list-style-type: none"> - light as wave and particle - electrons as waves - double slit experiment for electrons - the development of modern quantum mechanics - Heisenberg uncertainty-principle - why quantum mechanics is weird - Applications of quantum phenomena (3-4 weeks) <ul style="list-style-type: none"> - quantum tunneling - quantum teleportation - quantum computing - Quantum phenomena in atoms, molecules, larger bodies (5-7 weeks) 					
Continue to ILAS Seminar-E2 :The wonderful world of quantum physics (素晴らしい量子物理の世界) (2) ↓ ↓ ↓					

ILAS Seminar-E2 :The wonderful world of quantum physics (素晴らしい量子物理の世界) (2)
<ul style="list-style-type: none"> - atoms - why more is different (many body physics) - molecules - superconductivity - magnetism
[Class requirement]
None
[Method, Point of view, and Attainment levels of Evaluation]
Attendance, participation (50%) and assignment (50%)
[Textbook]
Not used
[Reference book, etc.]
(Reference book) Introduced during class
[Regarding studies out of class (preparation and review)]
The students will be asked to prepare short talks, which will be given during the course.
[Others (office hour, etc.)]
Office hour: After the course


Lecture code: Z002039

Course numbering		U-LAS70 10002 SE50					
Course title <English>	ILAS Seminar-E2 :Topics in Frontier Physics (現代物理学の最先端)		Affiliated department, Job title,Name	Graduate School of Science Associate Professor,WENDELL,Roger			
	ILAS Seminar-E2 :Topics in Frontier Physics						
Group	Seminars in Liberal Arts and Sciences		Number of credits	2	Number of weekly time blocks	1	
Class style	Seminar		Course offered year/period	2019・First semester		Quota (Freshman)	12 (12)
Target year	Mainly 1st year students	Eligible students	For all majors		Day/period	Mon.5	
Classroom	36, Yoshida-South Campus Academic Center Bldg. North Wing				Language	English	
Keyword	Modern Physics / Nobel Prize / Physics Discoveries						
[Outline and Purpose of the Course]							
This class will introduce students to new and exciting topics in modern physics. Recent discoveries and Nobel prize-winning research will be discussed in straight-forward terms so every one can understand and enjoy modern science. Lectures and discussions will be held in English and will cover a wide variety of topics in recent research. Even students with no previous physics experience are encouraged to join this class and learn about how we understand the world today.							
[Course Goals]							
Students in this course will learn about the fundamental physics behind recent topics in modern research as well as how they are applied in the real world. In addition, students will be introduced to and practice speaking in scientific English.							
[Course Schedule and Contents]							
Each week a different topic in modern physics and cosmology will be presented. The following week will provide a review of material with discussion. Topics will include some of the following:							
<ul style="list-style-type: none"> -) Discovery of the Higgs boson -) Observation of gravitational waves -) Neutrinos and their oscillations -) Radiation in the modern world -) The history and accelerating expansion of the universe -) Quarks and CP symmetry -) Lasers for trapping atoms -) From the birth of stars to supernovae 							
In addition to the above, students may request lectures on a few topics of their choice.							
[Class requirement]							
None							
----- Continue to ILAS Seminar-E2 :Topics in Frontier Physics (現代物理学の最先端) (2) ↓ ↓ ↓							

ILAS Seminar-E2 :Topics in Frontier Physics (現代物理学の最先端) (2)	
[Method, Point of view, and Attainment levels of Evaluation]	
This is a seminar course and the grade will be based on in-class participation only. Coming to each class with questions and an open mind is all that is needed.	
[Textbook]	
Not used	
[Reference book, etc.]	
(Reference book)	
Introduced during class	
[Regarding studies out of class (preparation and review)]	
Instructions on material to review ahead of lectures and supplementary reading will be presented in class.	
[Others (office hour, etc.)]	
Students curious about recent discoveries in physics are encouraged to attend this course.	

Lecture code: Z002071

Course numbering		U-LAS70 10002 SE50					
Course title <English>	ILAS Seminar-E2 :Clinical and ethical issues within palliative care- the European Context (ヨーロッパにおける緩和ケア)		Affiliated department, Job title,Name	Graduate School of Medicine Associate Professor,ANAGOSTOU, Despoina			
	ILAS Seminar-E2 :Clinical and ethical issues within palliative care- the European Context						
Group	Seminars in Liberal Arts and Sciences		Number of credits	2	Number of weekly time blocks	1	
Class style	Seminar		Course offered year/period	2019・First semester		Quota (Freshman)	15 (15)
Target year	Mainly 1st year students	Eligible students	For all majors		Day/period	Tue.5	
Classroom	21, Yoshida-South Campus Bldg. No. 1				Language	English	
Keyword	palliative care / end of life / ethics / clinical issues / Europe						
[Outline and Purpose of the Course]							
The overall aim of the seminar is to develop understanding of the key current clinical and ethical issues in palliative care within the European context							
We will use a combination of short lectures, interactive group work problem based activities and personal reflection throughout the course to address aspects of shared decision-making in palliative care, communication challenges in end of life care, ethical issues as viewed within EUROPE, holistic needs assessment and management of complex family interactions.							
[Course Goals]							
To understand the concepts of palliative and end of life care							
To understand the different models of palliative care within Europe							
To develop awareness of the different disease groups relevant to palliative care							
To develop awareness of the current ethical debates within palliative care in Europe							
[Course Schedule and Contents]							
Session 1: Introduction of the seminar and of those participating							
Session 2: Definition and different approaches to palliative care/ end of life care- historical development							
Session 3: Decision-making in palliative care							
Session 4: Family involvement in palliative care							
Session 5: Financial burden for the family in end-of-life care							
Session 6: Management of chronic pain in palliative care							
Session 7: Communication issues in advanced cancer							
Session 8: Quality of life in palliative care							
Session 9: The concept of resilience in palliative care							
Session 10: Coping with terminal illness							
Session 11: Informal care-giving: the untold reality palliative care							
Session 12: The importance of Spirituality and spiritual care in palliative care							
Session 13: Advanced care planning- current trends							
Session 14: Ethical issues in palliative care							
<small>Continue to LAS Seminar-E2 :Clinical and ethical issues within palliative care- the European Context (2-01) (1/16) (緩和ケア) (2)</small>							

<small>LAS Seminar-E2 :Clinical and ethical issues within palliative care- the European Context (2-01) (1/16) (緩和ケア) (2)</small>	

Session 15: presentations- feedback	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
evaluation will be based on students' presentations	
[Textbook]	
Instructed during class	
[Reference book, etc.]	
(Reference book)	
Introduced during class	
References to relevant literature will be given at each seminar	
[Regarding studies out of class (preparation and review)]	
Students are required to prepare for their presentations	
[Others (office hour, etc.)]	
Teacher short lectures, discussion groups, student presentations, small group works during seminar session based on an issue specified by the teacher.	
Students are advised to actively participate; make comments and ask questions to generate discussions	
Students should make an appointment via e-mail, in the case they need any advice.	

Lecture code: Z002040

Course numbering		U-LAS70 10002 SE50					
Course title <English>	ILAS Seminar-E2 :Dams and Reservoirs (ダムと貯水池)		Affiliated department, Job title,Name	Disaster Prevention Research Institute Associate Professor,Sameh Kantoush			
	ILAS Seminar-E2 :Dams and Reservoirs						
Group	Seminars in Liberal Arts and Sciences		Number of credits	2	Number of weekly time blocks	1	
Class style	Seminar		Course offered year/period	2019・First semester		Quota (Freshman)	10 (5)
Target year	Mainly 1st year students	Eligible students	For all majors		Day/period	Tue.5	
Classroom	3B, Yoshida-South Campus Academic Center Bldg. North Wing			Language	English		
Keyword	Dams and Reservoirs / Dam technologies / Reservoir sedimentation / River ecosystem / Dam impacts						
[Outline and Purpose of the Course]							
<p>In Japan, there are more than 3000 dams with one or multiple functions, which become essential for such modern society. Storage reservoirs provide important functions such as disaster prevention, flood mitigation, energy production, and water supply, all of which are vital for humankind. Dam related issues have become more daring, with raising concerns about environment and increase of sedimentation issues in reservoirs. Removing stored sediments is often recommended as a more effective approach to recover reservoir storage capacities than building new dams.</p> <p>This seminar course introduces students to dam technologies involving river engineering, ecosystem, flood and sediment issues. We will discuss about dam impacts and modern techniques that lead to increase dam service life. During seminar series videos of real dams and reservoirs and actual examples will be discussed. The students get the opportunity to visit dam site and understand the real situation of river ecosystem. Finally, a presentation will be required after the dam visit to demonstrate the learned principles applied in the student's majors.</p>							
[Course Goals]							
<p>At the end of this course, the student will be able to understand:</p> <ul style="list-style-type: none"> the different types and classifications of dams; the comprehensive sediment management techniques; the sediment management techniques; The importance of dams and how to upgrade. 							
[Course Schedule and Contents]							
<p>Week 1: Introduction- Main functions and types of dams & reservoirs Week 2: Basic and principles of dams and reservoirs Week 3: Water supply and climate change Week 4: Modern technologies for large dams Week 5: Dam impacts Week 6: Dam field trip Weeks 7-9: Sediment management techniques Week 10: Reports and Presentations Weeks 11-13: Upgrading and retrofitting of aging dams Week 14: Sustainable management of reservoir Week 15: Feedback and summary of the course</p>							
Continue to ILAS Seminar-E2 :Dams and Reservoirs (ダムと貯水池) (2) ↓ ↓ ↓							

ILAS Seminar-E2 :Dams and Reservoirs (ダムと貯水池) (2)	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Reports and presentations (100%)	
[Textbook]	
Instructed during class	
[Reference book, etc.]	
<p>(Reference book) Annandale, G. 『Quenching the Thirst: Sustainable Water Supply and Climate Change』 (Create Space Independent Publishing Platform) ISBN:1480265152, 9781480265158 (https://www.hydropower.org/sites/default/files/publications-docs/Annadale_QuenchingTheThirst.pdf)</p>	
[Regarding studies out of class (preparation and review)]	
Reading, presenting, and discussing some chapters of the reference book(Quenching the Thirst: Sustainable Water Supply and Climate Change)	
[Others (office hour, etc.)]	
  	

Lecture code: Z002058

Course numbering		U-LAS70 10002 SE50			
Course title <English>	ILAS Seminar-E2 :Food Systems in Asia (アジアにおける食農システム) ILAS Seminar-E2 :Food Systems in Asia		Affiliated department, Job title, Name	Graduate School of Agriculture Program-Specific Senior Lecturer, Hart Nadav FEUER	
Group	Seminars in Liberal Arts and Sciences	Number of credits	2	Number of weekly time blocks	1
Class style	Seminar	Course offered year/period	2019・First semester	Quota (Freshman)	12 (8)
Target year	Mainly 1st year students	Eligible students	For all majors	Day/period	Tue.5
Classroom	W302, Faculty of Agriculture Main Bldg. (North Campus)			Language	English
Keyword	Food / Cuisine / Nutrition				
[Outline and Purpose of the Course]					
This seminar surveys the contemporary transformation of food, nutrition, and agriculture in East and Southeast Asia. The content of the course will be both familiar and challenging as we will cover the development of national cuisines, the role of farmers, and the evolution of diet in modern society. The perspective will be both practical (How does society gather and eat?) and theoretical (Why food systems developed the way they did).					
[Course Goals]					
Students will gain a foundation in 'Food Studies': how scientists understand and analyze global food trends from multiple perspectives. Students will also test their skills in an applied way by analyzing specific cuisines in East Asia and providing their own insight and analysis.					
[Course Schedule and Contents]					
Introduction					
1. The new worldwide passion for food					
Module 1: Cuisines and agri-food systems in different regions					
2. Rice food systems of Southeast Asia					
3. Wheat food systems of East Asia					
4. Rice-based vs. Wheat-based civilizations					
Module 2: Food systems and cuisine					
5. Rural food, urban cuisine					
6. Development of national cuisine					
7. Changing tastes and preferences of regional cuisine					
Module 3: Food skills and food knowledge					
8. Food education and childhood					
9. Food and lifestyle					
10. Taste, smell, chew: sensory skills of eating					
Module 4: Student Presentations (order selected later)					
11. Cuisine of Korea					
12. Cuisine of Vietnam					
Continue to ILAS Seminar-E2 :Food Systems in Asia (アジアにおける食農システム) (2) ↓ ↓ ↓					

ILAS Seminar-E2 :Food Systems in Asia (アジアにおける食農システム) (2)	

13. Cuisine of Malaysia	
14. The Future of Cuisine	
15. Final assessment (to be selected in class)	
16. Feedback (details in class)	
[Class requirement]	
English proficiency suitable for understanding lectures, reading basic texts, and participating in class discussion.	
[Method, Point of view, and Attainment levels of Evaluation]	
10% Attendance (* More than 4 absences without official excuse loses this grade)	
10% Mini-essay assignments	
20% In-class discussion and participation in activities	
30% Final exam OR essay (student vote)	
30% Final group presentation	
[Textbook]	
Not used	
No textbook, but consultation of in-class materials and eBooks available at Kyoto University Library (see Reference book).	
[Reference book, etc.]	
(Reference book)	
Van Esterik, Penny 『Food Culture in Southeast Asia』 (Greenwood) ISBN:9780313344190 (eBook available from instructor)	
Klein, Jakob A. and Murcott, Ann (Eds.) 『Consumption and Public Life: Food Consumption in Global Perspective』 (Palgrave Macmillan) ISBN:9781137326416	
[Regarding studies out of class (preparation and review)]	
Students will be expected to do readings in preparation for class and discuss them the following week. Alternatively, students will conduct take home practical exercises which must be submitted the following week. Students should be prepared to discuss the topic of the week in an active manner during class.	
[Others (office hour, etc.)]	
Short meetings can be spontaneous or scheduled. Longer meetings scheduled only by email.	
	

Lecture code: Z002059

Course numbering		U-LAS70 10002 SE50			
Course title <English>	ILAS Seminar-E2 :Food Systems in Asia (アジアにおける食農システム) ILAS Seminar-E2 :Food Systems in Asia		Affiliated department, Job title, Name	Graduate School of Agriculture Program-Specific Senior Lecturer, Hart Nadav FEUER	
Group	Seminars in Liberal Arts and Sciences	Number of credits	2	Number of weekly time blocks	1
Class style	Seminar	Course offered year/period	2019・Second semester	Quota (Freshman)	12 (8)
Target year	Mainly 1st year students	Eligible students	For all majors	Day/period	Tue.5
Classroom	W302, Faculty of Agriculture Main Bldg. (North Campus)			Language	English
Keyword	Food / Cuisine / Nutrition				
[Outline and Purpose of the Course]					
This seminar surveys the contemporary transformation of food, nutrition, and agriculture in East and Southeast Asia. The content of the course will be both familiar and challenging as we will cover the development of national cuisines, the role of farmers, and the evolution of diet in modern society. The perspective will be both practical (How does society gather and eat?) and theoretical (Why food systems developed the way they did).					
[Course Goals]					
Students will gain a foundation in 'Food Studies': how scientists understand and analyze global food trends from multiple perspectives. Students will also test their skills in an applied way by analyzing specific cuisines in East Asia and providing their own insight and analysis.					
[Course Schedule and Contents]					
Introduction					
1. The new worldwide passion for food					
Module 1: Cuisines and agri-food systems in different regions					
2. Rice food systems of Southeast Asia					
3. Wheat food systems of East Asia					
4. Rice-based vs. Wheat-based civilizations					
Module 2: Food systems and cuisine					
5. Rural food, urban cuisine					
6. Development of national cuisine					
7. Changing tastes and preferences of regional cuisine					
Module 3: Food skills and food knowledge					
8. Food education and childhood					
9. Food and lifestyle					
10. Taste, smell, chew: sensory skills of eating					
Module 4: Student Presentations (order selected later)					
11. Cuisine of Korea					
12. Cuisine of Vietnam					
Continue to ILAS Seminar-E2 :Food Systems in Asia (アジアにおける食農システム) (2) ↓ ↓ ↓					

ILAS Seminar-E2 :Food Systems in Asia (アジアにおける食農システム) (2)	

13. Cuisine of Malaysia	
14. The Future of Cuisine	
15. Final assessment (selected in class)	
16. Feedback (details in class)	
[Class requirement]	
English proficiency suitable for understanding lectures, reading basic texts, and participating in class discussion.	
[Method, Point of view, and Attainment levels of Evaluation]	
10% Attendance and active participation (* More than 4 absences without official excuse loses this grade)	
10% Mini-essay assignments	
20% In-class discussion and participation in activities	
30% Final exam OR essay (student vote)	
30% Final group presentation	
[Textbook]	
Not used	
No textbook, but consultation of in-class materials and eBooks available at Kyoto University Library (see Reference book).	
[Reference book, etc.]	
(Reference book)	
Van Esterik, Penny 『Food Culture in Southeast Asia』 (Greenwood) ISBN:9780313344190 (eBook available from instructor)	
Klein, Jakob A. and Murcott, Ann (Eds.) 『Consumption and Public Life: Food Consumption in Global Perspective』 (Palgrave Macmillan) ISBN:9781137326416 (eBook)	
[Regarding studies out of class (preparation and review)]	
Students will be expected to do readings in preparation for class and discuss them the following week. Alternatively, students will conduct take home practical exercises which must be submitted the following week. Students should be prepared to discuss the topic of the week in an active manner during class.	
[Others (office hour, etc.)]	
Short meetings can be spontaneous or scheduled. Longer meetings scheduled only by email.	

Lecture code: Z002078

Course numbering		U-LAS70 10002 SE50			
Course title <English>	ILAS Seminar-E2 :Frontiers in psychopathology (精神病理学のフロンティア)		Affiliated department, Job title,Name	Graduate School of Human and Environmental Studies Associate Professor,TAJAN, Nicolas Pierre	
	ILAS Seminar-E2 :Frontiers in psychopathology				
Group	Seminars in Liberal Arts and Sciences	Number of credits	2	Number of weekly time blocks	1
Class style	Seminar	Course offered year/period	2019・First semester	Quota (Freshman)	13 (10)
Target year	Mainly 1st year students	Eligible students	For all majors	Day/period	Tue.5
Classroom	02, Yoshida-South Campus Academic Center Bldg. West Wing			Language	English
Keyword	Psychiatry / Psychology / Psychoanalysis / Mental Health				
(Students of Faculty of Integrated Human Studies cannot take this course as liberal arts and general education course. Please register the course with your department.)					
[Outline and Purpose of the Course]					
This seminar introduces the challenges of disciplines contributing to psychopathology (psychiatry, psychotherapy, psychoanalysis, etc.) in order to better understand the recent development of the mental health field.					
[Course Goals]					
To provide you with a general introduction to and understanding of key questions and challenges in psychopathology. To help you develop your analytical and critical thinking regarding the mental health field.					
[Course Schedule and Contents]					
1) Introduction 2) Psychiatry I 3) Psychiatry II 4) Antipsychiatry 5) Institutionnal psychiatry 6) Psychotherapy I 7) Psychotherapy II 8) Psychoanalysis I 9) Psychoanalysis II 10) Cultural psychiatry I 11) Cultural psychiatry II 12) From psychiatry to mental health 13) Psychiatric power 14) Conclusion 15) Final test 16) feedback					
Continue to ILAS Seminar-E2 :Frontiers in psychopathology (精神病理学のフロンティア) (2) ↓ ↓ ↓					

ILAS Seminar-E2 :Frontiers in psychopathology (精神病理学のフロンティア) (2)	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Students are expected to actively participate to discussion and read material during class. Evaluation is based on the following: Attendance and participation (30%), 2 written responses at the beginning of class 6 and 10 (30%), final test (40%).	
[Textbook]	
Relevant material is distributed in class.	
[Regarding studies out of class (preparation and review)]	
Students do not have homework assignments. However, they are advised to take notes during class and to review the course material before written responses and final test.	
[Others (office hour, etc.)]	

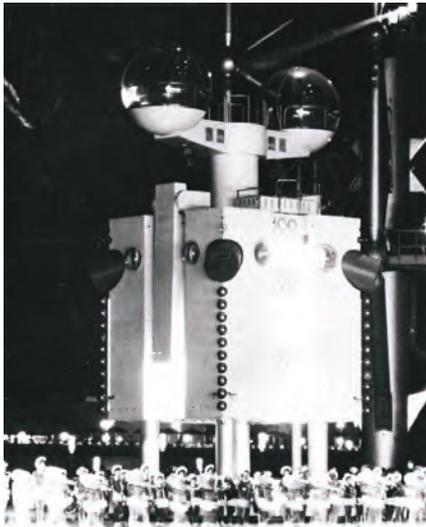
Lecture code: Z002079

Course numbering		U-LAS70 10002 SE50					
Course title <English>	ILAS Seminar-E2 :Nanostructured Materials (ナノ組織材料)		Affiliated department, Job title,Name	Graduate School of Engineering Senior Lecturer,GAO, Si			
	ILAS Seminar-E2 :Nanostructured Materials						
Group	Seminars in Liberal Arts and Sciences		Number of credits	2	Number of weekly time blocks	1	
Class style	Seminar		Course offered year/period	2019・First semester		Quota (Freshman)	15 (15)
Target year	Mainly 1st year students	Eligible students	For all majors		Day/period	Tue.5	
Classroom	822, 8F, Engineering Science Depts Bldg. (Main Campus)				Language	English	
Keyword	Science / materials						
[Outline and Purpose of the Course]							
Nanostructured materials refer to the materials having microstructures of which the characteristic length scale is in the order of 1 to 1000 nanometers (10^{-9} meter). Because of the extremely fine microstructures, the nanostructured materials often exhibit unique physical properties which cannot be obtained from the conventional materials. The purpose of this course is to introduce the frontier research of the nanostructured materials with focusing on the microstructures and mechanical properties nanostructured metallic materials.							
[Course Goals]							
By taking this course, students will learn why the materials researches are going into the length scale of nanometer in recent decades. In addition, they will have a brief understanding on the frontier researches of processing, properties and microstructures of the nanostructured metals and alloys.							
[Course Schedule and Contents]							
1. Introduction to materials and materials science 2. Atomic structure and interatomic bonding 3. Structure of crystalline solids 4. Imperfections in solids 5. Microstructures of materials 6. Concept of nanomaterials 7. Metallic materials having nanostructures 8-11. Microstructures and mechanical properties of nanostructured metallic materials 12. Laboratory tour 13-14. Advanced characterization techniques							
[Class requirement]							
None							
[Method, Point of view, and Attainment levels of Evaluation]							
Attendance and active participation [60%] Final report [40%]							
----- Continue to ILAS Seminar-E2 :Nanostructured Materials (ナノ組織材料) (2) ↓ ↓ ↓							

ILAS Seminar-E2 :Nanostructured Materials (ナノ組織材料) (2)	
[Textbook]	
Not used	
[Regarding studies out of class (preparation and review)]	
Students are required to read assigned materials (distributed by the teacher) before and after the class for preparation and review. The necessary time for those would be around 2 hours for each class.	
[Others (office hour, etc.)]	

Lecture code: Z002073

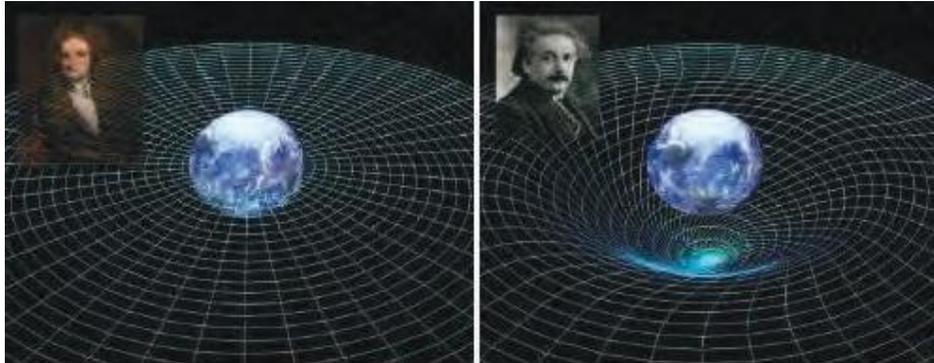
Course numbering		U-LAS70 10002 SE50					
Course title <English>	ILAS Seminar-E2 :Robots in Japanese Popular Culture (日本の大衆文化のなかのロボット)		Affiliated department, Job title,Name	Graduate School of Engineering Professor,DANIPELL, Thomas Charles			
	ILAS Seminar-E2 :Robots in Japanese Popular Culture						
Group	Seminars in Liberal Arts and Sciences		Number of credits	2	Number of weekly time blocks	1	
Class style	Seminar		Course offered year/period	2019・First semester		Quota (Freshman)	5 (5)
Target year	Mainly 1st year students	Eligible students	For all majors		Day/period	Tue.5	
Classroom	3D, Yoshida-South Campus Academic Center Bldg. North Wing				Language	English	
Keyword	robot / popular culture						
[Outline and Purpose of the Course]							
This seminar will look at the image of robots in Japanese popular culture, primarily focusing on the period from Osaka Expo in 1970 until the present day. As well as manga, anime, cinema, and literature, we will look at the origins of Japan's robot culture in karakuri ningyou and contemporary manifestations such as Aibo. We will discuss cultural issues ranging from animism to artificial intelligence, and concepts such as the “uncanny valley” effect.							
[Course Goals]							
By the end of this course, students will: Understand the historical development of robots in Japan; Understand the technological and cultural factors that have shaped perceptions; Learn to make a critical response to the assigned readings; Learn to read, write, listen, and speak cogently; Present research findings to an audience.							
[Course Schedule and Contents]							
Each week there will be a main text assigned for discussion, led by either the instructor or one of the students. The choice and order of texts may be altered during the semester.							
WK. 01 Discussion text: Frederik L. Schodt, “The First Japanese Robot” WK. 02 Discussion text: Frederik L. Schodt, “Robots of the Imagination” WK. 03 Discussion text: Frederik L. Schodt, “The Toy Robot Kingdom” WK. 04 Discussion text: Yuji Sone, “Robotics and Representations” WK. 05 Discussion text: Yuji Sone, “Futuristic Spectacle: Robot Performances at Expos” WK. 06 Discussion text: Yuji Sone, “The Anthropomorphic Robot and Artistic Expression” WK. 07 Discussion text: Lee Makela, “From Metropolis to Metropolis” WK. 08 Discussion text: Frederik L. Schodt, “Designing a World” WK. 09 Discussion text: Frederik L. Schodt, “An Interface between Man and Robot” WK. 10 Discussion text: Yuji Sone, “Robots, Space, and Place” WK. 11 Discussion text: Yuji Sone, “Robots that ‘Care’” WK. 12 Discussion text: Frederik L. Schodt, “Religion and Robots” WK. 13 Discussion text: Frederik L. Schodt, “Medley of Messages” WK. 14 Review							
<small>Continue to ILAS Seminar-E2 :Robots in Japanese Popular Culture (日本の大衆文化のなかのロボット) (2) ↓ ↓</small>							

<small>ILAS Seminar-E2 :Robots in Japanese Popular Culture (日本の大衆文化のなかのロボット) (2)</small>	
[Class requirement]	
No prior knowledge is required. Students should be able to participate in discussions with their classmates in English. This is a seminar, not a lecture series, so students must complete the readings and be involved in the discussions.	
[Method, Point of view, and Attainment levels of Evaluation]	
The course will comprise close readings of critical texts in the fields of robots and popular culture. Each student will be required to lead one session. They must read and understand the assigned text, then prepare and present a summary of their findings to the rest of the students. The presentation should be about 60 minutes, and illustrated with a PowerPoint file. It should be supplemented with additional quotations, images, video clips, and so forth. For the remainder of the class, the student must lead a discussion on the topics raised. The text of the presentation should be submitted in essay format, citing salient reference works, giving footnotes in the APA style, and captions for all images. Grades are based on participation (20 points), presentations (40 points), and submitted assignments (40 points). Students who are absent more than four times will not be credited. Students who submit work that is plagiarized or lacks proper attribution may fail.	
[Textbook]	
Frederik L. Schodt 『Inside the Robot Kingdom』 (Kodansha) ISBN:978-0870118548	
[Reference book, etc.]	
(Reference book) Yuji Sone 『Japanese Robot Culture: Performance, Imagination, and Modernity』 (Palgrave Macmillan) ISBN:978-1137532169	
[Regarding studies out of class (preparation and review)]	
All students are expected to have read the assigned reading(s) before each class.	
[Others (office hour, etc.)]	
By appointment.	
	

Lecture code: Z002067

Course numbering		U-LAS70 10002 SE50					
Course title <English>	ILAS Seminar-E2 :The Life and Work of Albert Einstein (アルバート・アインシュタインの生涯と業績)		Affiliated department, Job title,Name	Research Institute for Mathematical Sciences Assistant Professor,Helmke, Stefan			
	ILAS Seminar-E2 :The Life and Work of Albert Einstein						
Group	Seminars in Liberal Arts and Sciences		Number of credits	2	Number of weekly time blocks	1	
Class style	Seminar		Course offered year/period	2019・First semester		Quota (Freshman)	15 (15)
Target year	Mainly 1st year students	Eligible students	For all majors		Day/period	Tue.5	
Classroom	04, Yoshida-South Campus Bldg. No. 1				Language	English	
Keyword	Non-euclidean geometry / curvature / relativity						
[Outline and Purpose of the Course]							
In spite of what the title of this seminar may suggest, its main objective is to study the developments of geometry during the 19th century, which culminated in Einstein's general theory of relativity in the early 20th century. At this early time, the only experimental fact confirming Einstein's theory was the abnormal orbit of mercury. Shortly after, the bending of light in the gravitational field of the sun was also confirmed. We will develop the geometric tools necessary to understand those phenomena and also gravitational waves, whose recent discovery received the Nobel price in physics of the year 2017.							
[Course Goals]							
The aim of this course is to understand the interaction between mathematics and the natural sciences and to engage in English discussions on a scientific topic.							
[Course Schedule and Contents]							
The exact contents of the seminar is flexible and may depend on special interests of the students. But the topics to be covered will be essentially as follows.							
The first four weeks we will study Einstein's special theory of relativity and its historical background. This includes a brief introduction to multidimensional calculus, electrodynamics and the four dimensional Minkowski space.							
The following five weeks will be devoted to the developments of differential geometry, beginning with the notion of curvature of a plane curve due to Huygens and Newton in the 17th century, followed by Euler's definition of principal curvatures of a surface embedded into space, Gauss's intrinsic geometry of a surface and finally Riemann's concept of a manifold and its curvature. Parallel, we will also study the idea of Non-Euclidean geometry which developed during the same period of time and which turned out to be related to the above and of some importance for Einstein later.							
We will then just need two more weeks to understand the basic ideas of the general theory of relativity, i.e. the equivalence principle and Einstein's field equations.							
The last three weeks we will study the following applications of the general theory of relativity: 1. The mercury orbit and bending of light, 2. Simple cosmological models and 3. Gravitational waves.							

Continue to ILAS Seminar-E2 :The Life and Work of Albert Einstein (アルバート・アインシュタインの生涯と業績) (2)

ILAS Seminar-E2 :The Life and Work of Albert Einstein (アルバート・アインシュタインの生涯と業績) (2)	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
The evaluation is based on a presentation, which will be given during the class.	
[Textbook]	
Not used	
[Reference book, etc.]	
(Reference book)	
Introduced during class	
[Regarding studies out of class (preparation and review)]	
The students will be asked to prepare a short presentation.	
[Others (office hour, etc.)]	
No particular office hour, but students can make arrangements after the class or by email.	
	
<p style="text-align: center;">Newton's fixed space Einstein's flexible space-time</p>	
Einstein's flexible spacetime, from the film "Testing Einstein's Universe" by Norbert Bartel	

Lecture code: Z002031

Course numbering		U-LAS70 10002 SE50				
Course title <English>	ILAS Seminar-E2 :What are Liquids? Answers from Physics, Chemistry and Engineering (液体は何? 液体の基礎物理学 と化学)		Affiliated department, Job title,Name	Graduate School of Science Program-Specific Associate Professor, THUERMER, Stephan		
	ILAS Seminar-E2 :What are Liquids? Answers from Physics, Chemistry and Engineering					
Group	Seminars in Liberal Arts and Sciences	Number of credits	2	Number of weekly time blocks	1	
Class style	Seminar	Course offered year/period	2019・First semester		Quota (Freshman)	25 (15)
Target year	Mainly 1st year students	Eligible students	For all majors		Day/period	Tue.5
Classroom	33, Yoshida-South Campus Academic Center Bldg. North Wing			Language	English	
Keyword	Life / Water / Liquid / Flow / Interface					
[Outline and Purpose of the Course]						
<p>Every day you see and use liquids such as water and oil, but also toothpaste, creams or glue. In this seminar we want to study 'liquids' from the point of view of physics, chemistry and engineering (in particular fluid dynamics). Have you ever wondered what makes water stick to a window or how toothpaste flows out of the tube? I invite you to study the properties of liquids, how they flow, stick or spread, and gain a deeper understanding of their behavior, which is so important in nature and your daily life. This course will take a closer look on liquids from various perspectives, combining various fields but without getting lost too much into details. Students with any major are welcome.</p> <p>液体は水のように生命現象に欠くことができない物質の相であり、多くの化学合成や物質開発が溶液中で行われています。また、構造変化の大きな液体は、固体とは性質の似て非なる興味深い凝集相です。このセミナーでは、物理・化学・工学におよぶ多角的な視点から、液体の科学について学びます。</p>						
[Course Goals]						
<p>Students will gain the following from this seminar:</p> <ul style="list-style-type: none"> - Interest and fun to learn more about phenomena in nature and study topics on their own. - Knowledge about liquid behavior as a starting point for other courses in natural science. - The ability to look at problems and behavior from multiple scientific fields (physics, chemistry, engineering). - The ability to express their ideas, discuss and present topics of natural sciences in English. <p>この講義の目的の一つは、英語で科学を議論するスキルを学ぶことですが、同時に、物理や化学、工学のように分野の境界を越えて、様々な視点から現象を考える機会を持つことです。</p>						
[Course Schedule and Contents]						
<p>This seminar is held in a causal and interactive way! Students can influence the selection of topics based on their interest!</p> <p>The course will work though several aspects of liquids, which include the following topics. The plan below is</p>						

Continue to LAS Seminar-E2 :What are Liquids? Answers from Physics, Chemistry and Engineering (液体は何? 液体の基礎物理学と化学) (1)

<small>ILAS Seminar-E2 :What are Liquids? Answers from Physics, Chemistry and Engineering (液体は何? 液体の基礎物理学と化学) (1)</small>	
not strict and rather serves as a guideline.	
<ol style="list-style-type: none"> 1. Introduction to liquids - Honey, toothpaste or even sand? (3 weeks) We look at liquids from different scientific viewpoints and identify their behavior. 2. Oil and water do not mix? (4 weeks) We learn why liquids form and which different forces hold liquids together. 3. The shape of a raindrop and the lotus effect. (4 weeks) We take a closer look at liquid surface and interface effects such as adhesion, cohesion, surface tension. 4. How to get ketchup out of the tube? (3 weeks) We see what makes liquids flow and how different liquids react to forces. 	
Depending on the available time and interest of the students, we may also discuss topics such as the application of liquids in nature, science, and technology or exotic liquids such as ionic or magnetic liquids.	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
<p>Preparing homework (30%) Small exercises during the seminar (30%) Giving a short presentation at the end of the seminar (40%)</p>	
[Textbook]	
<p>Not used No textbook is used. Handouts will be provided during class.</p>	
[Reference book, etc.]	
<p>(Reference book) John Finney 『Water: A Very Short Introduction』 (Oxford University Press) ISBN:9780198708728 (This book is a short and interesting read specifically about water) Etienne Guyon, Jean-Pierre Hulin, Luc Petit, Catalin D. Mitescu 『Physical Hydrodynamics』 (Oxford University Press) ISBN:9780198702450 (An advanced book if you are really interested in the science behind liquids)</p>	
[Regarding studies out of class (preparation and review)]	
<p>Students are expected to review the lecture handouts after each class and look up unknown English terms themselves. Homework assignments need to be prepared before the next lecture. It is also encouraged to refer to additional sources of information (books, websites) for the specific topics. If something is unclear or difficult, the instructor can be asked at any time.</p>	
[Others (office hour, etc.)]	
<p>The lectures will be held in English, but some supporting material and explanations are given in Japanese. Students are welcome to ask questions in English or Japanese during and after the class. Office hours are flexible. Appointments can be made directly or via email.</p>	

Lecture code: Z002010

Course numbering		U-LAS70 10002 SE50			
Course title <English>	ILAS Seminar-E2 :First Step to Qualitative Research Methods - Field Surveys and Data Analysis (質的研究へのはじめの一歩 - フィールド調査とデータ分析)		Affiliated department, Job title,Name	Disaster Prevention Research Institute Associate Professor,SAMADDAR, Subhajyoti	
	ILAS Seminar-E2 :First Step to Qualitative Research Methods - Field Surveys and Data Analysis				
Group	Seminars in Liberal Arts and Sciences	Number of credits	2	Number of weekly time blocks	1
Class style	Seminar	Course offered year/period	2019・First semester	Quota (Freshman)	25 (15)
Target year	1st year students	Eligible students	For all majors	Day/period	Wed.5
Classroom	Seminar room 21, ILAS Bldg.			Language	English
Keyword	Research Methodology / Qualitative research / Survey tools and techniques / Field Surveys / Action Research				
[Outline and Purpose of the Course]					
<p>Qualitative research methods bring the deep and real opinions, thoughts and perspectives of the people and local communities, which cannot be possible to capture through predetermined questionnaires as used by quantitative research methods. The process of obtaining knowledge in case of qualitative research is more sort of a bottom-up approach. It brings the voices of voiceless and hears the unheard. More than theory, qualitative research method is an art to build rapport with communities, observe their behaviors and activities, interview those marginalized, isolated people who have never been interviewed.</p> <p>This course will offer to learn a basic practical knowledge on qualitative research methods by conducting practical exercises, field surveys and analyzing field data. Emphasis will be placed on equipping students to gain the practical skills necessary to conduct a small field work project using action-oriented methods. Students individually or in group will take small projects or existing case studies within the university campus to practically learn the qualitative research method techniques.</p>					
[Course Goals]					
<p>This seminar course has following key objectives -</p> <ol style="list-style-type: none"> 1. To learn the art and practical skills to conduct qualitative research methods. 2. To learn how to analyze the qualitative research data. 3. To learn how to present and articulate the findings of qualitative research. 					
[Course Schedule and Contents]					
<p>Week 1: Introduction</p> <ul style="list-style-type: none"> - Understanding the basic concepts of qualities research. - Why study qualitative research methods. <p>Week 2: Reading and learning major qualitative research methods.</p> <ul style="list-style-type: none"> - Ethnomethodology. - Phenomenology. <p>Week 3: Reading and Learning major qualitative research methods.</p>					

Continue to LAS Seminar E2: First Step to Qualitative Research Methods - Field Surveys and Data Analysis 講義コード: Z002010-5-7-1-1 (履修コード: Z002010-5-7-1-1)

<p>ILAS Seminar E2: First Step to Qualitative Research Methods - Field Surveys and Data Analysis 講義コード: Z002010-5-7-1-1 (履修コード: Z002010-5-7-1-1)</p> <hr/> <ul style="list-style-type: none"> - Content analysis. - Visual Anthropology. <p>Week 4: Designing qualitative studies</p> <ul style="list-style-type: none"> - Data collection decisions. - Sampling : Purposeful sampling and case selection. - Deciding sample size for qualitative designs - Group characteristics sampling strategies and options. <p>Week 5 and 6 : Fieldwork strategies</p> <ul style="list-style-type: none"> - Method choices and decisions. - Rapport buildings techniques. - Pilot survey techniques for knowing the fields. - How to reduce the biases. - Managing field-based research. <p>Week 7: Doing field studies: - Interview techniques:</p> <ul style="list-style-type: none"> - Question options and skilled question formulation. - Rapport, neutrality and interview relationships. - Open-ended interviews. - Ethical issues and challenges <p>Week 8: Observation techniques for data collection</p> <ul style="list-style-type: none"> - Variation of observation methods. - Variation in duration of observation and site visits. - What to observe: Sensitizing concepts. - How to observe? - Data gathering process through observation. <p>Week 9: Other Methods of Qualitative Data Collections</p> <ul style="list-style-type: none"> - Case Study - Oral history - Focus group meetings. <p>Week 10: Recording data</p> <ul style="list-style-type: none"> - What to record - Note-taking practices when doing field works. - Converting field notes into fuller notes. - Keeping personal journal. <p>Week 11: Analyzing Qualitative Data.</p> <ul style="list-style-type: none"> - Organizing the data - Reading and Memoing. - Codes and themes - Representing and visualizing <hr/>	
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Continue to LAS Seminar E2: First Step to Qualitative Research Methods - Field Surveys and Data Analysis 講義コード: Z002010-5-7-1-1 (履修コード: Z002010-5-7-1-1)

Week 12: Presenting the results from qualitative research

- Tabular, graphic and pictorial presentation.
- Three modes for displaying qualitative data.
- Using words table to summarize an analytical findings.
- Variation among household types.
- Making good use of photographs.

Week 13: Writing a Qualitative Data

- Reflexivity and representation in writing.
- Audience of our writings.
- Encoding our writings.
- Quotes in our writings.
- Overall structure.
- Embedded structure.

Week 14: Composing research, to share it with others.

- Composing: General hints.
- Composing qualitative research.
- Presenting your declarative self.
- Presenting your reflexive self.
- Reworking your composition.

Week 15: Final Presentation and report submission

Week 16: Feedback

[Class requirement]

None

[Method, Point of view, and Attainment levels of Evaluation]

Evaluation will be based on

- Active participation (20 points).
- Report Writing (40 Points)
- Final presentation (40 points). Assignments and report presentations will be assessed on the basis of achievement level for course goals

[Textbook]

Handouts will be distributed by the instructor if necessary.

[Regarding studies out of class (preparation and review)]

Site appraisal and field surveys will be conducted.

Students individually or in group will take small projects or existing case studies within the university campus to practically learn the qualitative research method techniques.

[Others (office hour, etc.)]

The course with experiments or offered outside of the campus, state on the taking out accident insurance of Personal Accident Insurance for Students Pursuing Ed. & Rsch. as needed.



Lecture code: Z002008

Course numbering		U-LAS70 10002 SE50			
Course title <English>	ILAS Seminar-E2 :Frontiers in Theoretical Physics I (理論物理学最前線 I)		Affiliated department, Job title,Name	Yukawa Institute for Theoretical Physics Associate Professor, Antonio De Felice	
	ILAS Seminar-E2 :Frontiers in Theoretical Physics I				
Group	Seminars in Liberal Arts and Sciences	Number of credits	2	Number of weekly time blocks	1
Class style	Seminar	Course offered year/period	2019・First semester	Quota (Freshman)	8 (8)
Target year	Mainly 1st year students	Eligible students	For all majors	Day/period	Wed.5
Classroom	305, 3F Yukawa Institute for Theoretical Physics (North Campus)			Language	English
Keyword	Theoretical Physics / 理論物理学 / modern physics / 現代物理学				
[Outline and Purpose of the Course]					
This will be in the form of a small class (around 7 students). The purpose is to learning interactively various up-to-date topics in theoretical physics. Topics will be taken from journals like Physics Today, Physics World, Nature etc.. The topics taken in this course are different from those in the course "Frontiers in Theoretical Physics II".					
[Course Goals]					
The students will be able to read an article from some journal and enucleate the main message from it.					
The student will closely interact with professor and other students, so that ideas/comments can be exchanged.					
[Course Schedule and Contents]					
1. Each student would read in turn a paper and report her/his impressions to the other people. 2. The paper will be freely chosen consistently with field of theoretical physics. 3. In case the paper requires more work, analysis, the same paper can be discussed in groups. 4. As for the paper, the student must be able to get the key-message and show to the others why the paper might (or might not) be of importance in theoretical physics. 5. Share comments, and toss out possible new ideas to expand the idea of the original paper.					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
Discussion in class.					
[Textbook]					
Instructed during class					
----- Continue to ILAS Seminar-E2 :Frontiers in Theoretical Physics I (理論物理学最前線 I) (2) ↓ ↓ ↓					

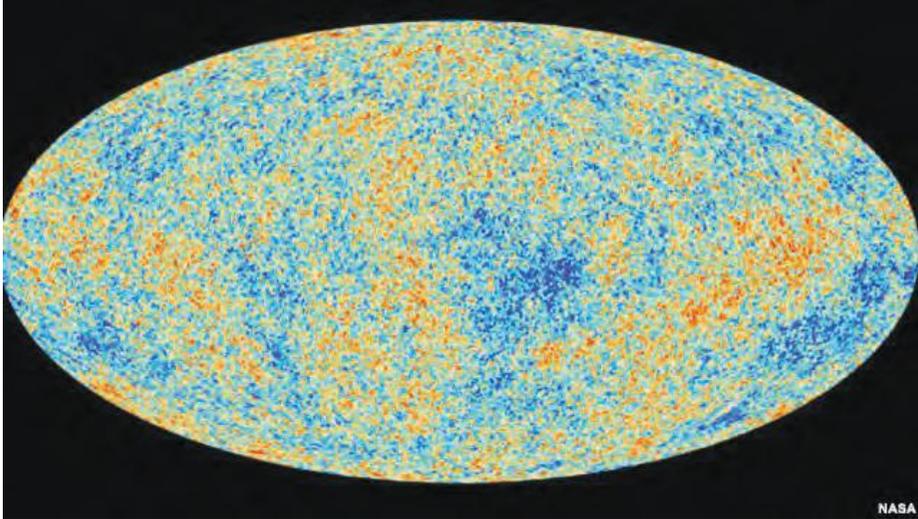
ILAS Seminar-E2 :Frontiers in Theoretical Physics I (理論物理学最前線 I) (2)

[Reference book, etc.]

(Reference book)
Introduced during class

[Regarding studies out of class (preparation and review)]
The students will be given a paper to read a week before class, and, in turn, they will present and discuss it with other students.

[Others (office hour, etc.)]



Lecture code: Z002016

Course numbering		U-LAS70 10002 SE50					
Course title <English>	ILAS Seminar-E2 :Frontiers in Theoretical Physics II (理論物理学最前線 II)		Affiliated department, Job title, Name	Hakubi Center for Advanced Research Program-Specific Assistant Professor, Werner, Marcus Christian			
	ILAS Seminar-E2 :Frontiers in Theoretical Physics II						
Group	Seminars in Liberal Arts and Sciences		Number of credits	2	Number of weekly time blocks	1	
Class style	Seminar		Course offered year/period	2019・First semester		Quota (Freshman)	10 (10)
Target year	Mainly 1st year students	Eligible students	For all majors		Day/period	Wed.5	
Classroom	11, Yoshida-South Campus Academic Center Bldg. North Wing				Language	Japanese and English	
Keyword	Theoretical Physics / 理論物理学 / Astrophysics / 宇宙物理学						
[Outline and Purpose of the Course]							
英語で「Physics Today」の論文を読んで物理学の最前線に取り組みます。この科目では、宇宙物理学に関するトピックに焦点が当てられますが、量子力学や流体力学などの物理学の全範囲をカバーします。この科目の内容は「理論物理学最前線 I」と異なります。各回の講義は次の3つのパートから構成されます：まず、私が講義スタイルでトピックの紹介を行います。その後、全員が事前に読んだ論文の内容を、学生の一人が発表します。最後に、全員が新しいアイデアや提案について議論します。このコースは小規模で、インタラクティブに進める予定です。							
[Course Goals]							
この科目の主な目的は、最近の物理学の発展と、特にそのいくつかの側面について理解を得ることです。学生は物理学における方法論的な問題を批判的に議論することが奨励されます。同時に、英語の会話や文章理解のスキルを向上させることも目的としています。これは、すべての研究が基本的に英語で出版されるので、特に重要です。							
[Course Schedule and Contents]							
1. 最初の週に、学生が論文の内容と発表の方法を考えられるように、私が典型的な論文を提示します。 2. 毎週、学生は順番に英語で論文の発表を行います。発表回数などは出席者の総数に依存します。グループで発表することもできます。 3. 試験の週に、セミナーやテストはありません。 4. 試験の週の後に行われるフィードバックセッションで、私がコース要約を提供します。							
[Class requirement]							
物理学への興味! 高度なトピックの予備知識は有益ですが、必須ではありません。							
[Method, Point of view, and Attainment levels of Evaluation]							
試験はありません。評価は、学生の出席と授業への貢献度に基づいて行われます。							
Continue to ILAS Seminar-E2 :Frontiers in Theoretical Physics II (理論物理学最前線 II) (2) ↓ ↓ ↓							

ILAS Seminar-E2 :Frontiers in Theoretical Physics II (理論物理学最前線 II) (2)

[Textbook]

Not fixed

[Reference book, etc.]**(Reference book)**

Introduced during class

[Regarding studies out of class (preparation and review)]

毎週、学生は論文を一部事前に読んで準備することが期待されます。

[Others (office hour, etc.)]

Lecture code: Z002012

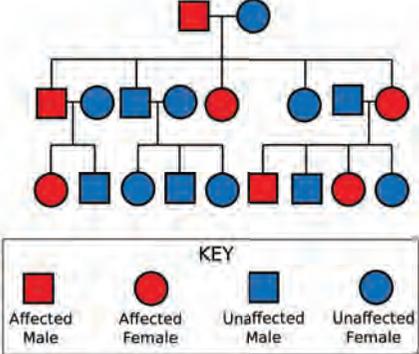
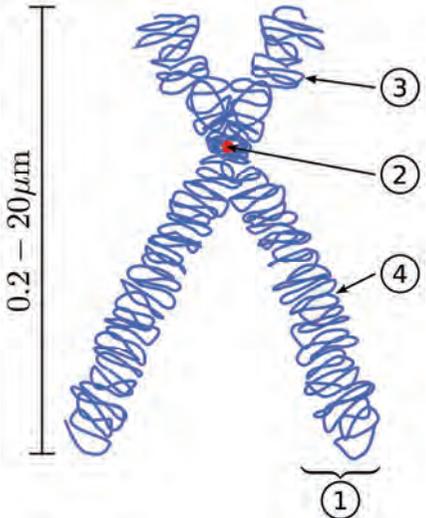
Course numbering		U-LAS70 10002 SE50					
Course title <English>	ILAS Seminar-E2 :Global Health (グローバルヘルス)		Affiliated department, Job title, Name	Graduate School of Medicine Senior Lecturer, S.Pilar Suguimoto			
	ILAS Seminar-E2 :Global Health						
Group	Seminars in Liberal Arts and Sciences		Number of credits	2	Number of weekly time blocks	1	
Class style	Seminar		Course offered year/period	2019・First semester		Quota (Freshman)	6 (6)
Target year	Mainly 1st year students		Eligible students	For all majors		Day/period	Wed.5
Classroom	Small seminar room, 1F, Science Frontier Laboratory, Faculty of Medicine (Faculty of Medicine/Pharmaceutical Science Campus/ University Hospital Campus)			Language	English		
Keyword	Global Health / Disease burden / Public Health / International Health / Health						
[Outline and Purpose of the Course]							
<p>Why should we care about the health of other people, especially that of people in other countries? Global health is not just about health in low-income countries; it is about common health problems faced by human population as a whole. As the world has become more globalized, so too has health. Diseases do not respect political boundaries, thus global cooperation is critical for our collective survival. Health is closely linked with economic and social development and has important implications for global security and freedom.</p> <p>This course will introduce students to major global health challenges that affect the health of populations globally.</p>							
[Course Goals]							
<ul style="list-style-type: none"> * To understand key concepts used in examining global health issues * To gain insight into the current challenges of global health * To gain an understanding of why tackling global health issues has the potential to reduce poverty, build stronger economies and promote peace 							
[Course Schedule and Contents]							
<p>In principle, the course will include the following topics:</p> <ol style="list-style-type: none"> 1. Introduction to Global Health 2. Social determinants of health, measurements, MDGs, SDGs 3. Infectious diseases and epidemics 4. Infectious diseases (cont.) 5. Child and maternal health 6. Non-communicable diseases 7. Injury and violence 8. The environmental context of health 9. Culture and health 10. Migration 11. Mental health 12. Global health partnerships 13. Social marketing for health promotion 14. Social marketing for health promotion (cont.) 							
<small>Continue to ILAS Seminar-E2 :Global Health (グローバルヘルス) (2) ↓ ↓ ↓</small>							

ILAS Seminar-E2 :Global Health (グローバルヘルス) (2)	

The order of the topics are subject to change. There is no final exam for this course.	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
The course is presented in lecture/discussion format and may include videos and guest speakers.	
<p>Evaluation will be based on:</p> <ul style="list-style-type: none"> (a) Class participation/group discussion (20%) (b) Short presentation (20%) (c) Written assignments (60%) 	
More details will be provided in class.	
[Textbook]	
Not used	
[Reference book, etc.]	
<p>(Reference book)</p> <p>Richard Skolnik 『Global Health 101』 (Jones and Bartlett Learning) ISBN:978-1-284-05054-7 リチャード スコルニク/著 木原正博/監訳 木原雅子/監訳 『グローバルヘルス 世界の健康と対処戦略の最新動向』 (メディカル・サイエンス・インターナショナル) ISBN:978-4-89592-897-7</p>	
Students will be provided with a list of recommended readings for each topic in due time. Class handouts will be available.	
[Regarding studies out of class (preparation and review)]	
<ul style="list-style-type: none"> * Students will do additional research on their own to prepare short written assignments/presentations. <p>Further details will be provided during class.</p> <ul style="list-style-type: none"> * Students are expected to actively participate in class. 	
[Others (office hour, etc.)]	
<p>Seminars will be held at: Science Frontier Laboratory, Faculty of Medicine Campus, Small seminar room (1F).</p> <p>Please visit KULASIS to find out about office hours.</p>	
	

Lecture code: Z002014

Course numbering		U-LAS70 10002 SE50			
Course title <English>	ILAS Seminar-E2 :Introduction to Human Genetics and Genetic Disease (人類遺伝学と遺伝病入門)		Affiliated department, Job title,Name	Graduate School of Medicine Senior Lecturer,Marco,Marques Candeias	
	ILAS Seminar-E2 :Introduction to Human Genetics and Genetic Disease				
Group	Seminars in Liberal Arts and Sciences	Number of credits	2	Number of weekly time blocks	1
Class style	Seminar	Course offered year/period	2019・First semester	Quota (Freshman)	15 (15)
Target year	Mainly 1st year students	Eligible students	For all majors	Day/period	Wed.5
Classroom	04, Yoshida-South Campus Bldg. No. 1			Language	English
Keyword	Human Genetics / Genetic Disorders / Cancer Genetics / Genetics Research / Molecular Therapy				
[Outline and Purpose of the Course]					
An overview of human genetic disorders and how current research is creating new treatments. Topics include: single gene disorders, multifactorial disorders; cancer genetics; identification and analysis of human disease genes. Students will learn from recent research articles as well as from a recent text book on human genetics. After learning about the several subjects, the students will present recent research in class and active discussion will be encouraged.					
[Course Goals]					
The classes will be interactive. The students will learn from the instructor as well as from each other. Recent exciting research discoveries about human genetics and genetic disease will be introduced and discussed. The students will learn about gene structure and function, mutations and diversity, inheritance, detection and treatment.					
[Course Schedule and Contents]					
The following topics will be viewed during a total of 14 classes:					
1. The Human Genome: Gene Structure and Function					
2. Human Genetic Diversity: Polymorphism or mutation?					
3. The Chromosomal and Genomic Basis of Disease: Disorders of the Autosomes and Sex Chromosomes					
4. Single-Gene Inheritance					
5. Complex Inheritance (known and unknown molecular mechanisms) of Common Multifactorial Disorders					
6. Genetic Variation in Populations					
7. Identifying the Genetic Basis for Human Disease					
8. The Molecular, Biochemical, and Cellular Basis of Genetic Disease					
9. The Treatment of Genetic Disease					
10. Developmental Genetics and Birth Defects					
11. Cancer Genetics					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
Evaluation will be based on active participation (20 %), assignments (50 %) and quizzes/test (30 %). Those who are absent more than four times will not be credited.					
<small>Continue to ILAS Seminar-E2 :Introduction to Human Genetics and Genetic Disease (人類遺伝学と遺伝病入門) (2) ↓ ↓ ↓</small>					

<small>ILAS Seminar-E2 :Introduction to Human Genetics and Genetic Disease (人類遺伝学と遺伝病入門) (2)</small>	
[Textbook]	
Robert L. Nussbaum, Roderick R. McInnes, Huntington F Willard 『Thompson & Thompson Genetics in Medicine』 (Elsevier Health Sciences) ISBN:0323392067, 9780323392068	
[Regarding studies out of class (preparation and review)]	
A few hours will be necessary weekly to prepare for the class. Handouts will be available to help with the preparation. During the assignment weeks extra hours will be necessary in order to prepare for the presentation in class.	
[Others (office hour, etc.)]	
Questions and discussions during class are highly encouraged. Questions and discussions will also be addressed, happily, any other time, even outside the official office hours.	
	
	
<small>Continue to ILAS Seminar-E2 :Introduction to Human Genetics and Genetic Disease (人類遺伝学と遺伝病入門) (2) ↓ ↓ ↓</small>	

Lecture code: Z002020

Course numbering		U-LAS70 10002 SE50			
Course title <English>	ILAS Seminar-E2 :Project-based data analysis seminar (プロジェクト型データ解析)		Affiliated department, Job title,Name	Graduate School of Medicine Senior Lecturer,John BROWN	
	ILAS Seminar-E2 :Project-based data analysis seminar				
Group	Seminars in Liberal Arts and Sciences	Number of credits	2	Number of weekly time blocks	1
Class style	Seminar	Course offered year/period	2019・First semester	Quota (Freshman)	5 (5)
Target year	Mainly 1st year students	Eligible students	For all majors	Day/period	Wed.5
Classroom	Seminar room 110, 1F, Faculty of Medicine Bldg. E (Faculty of Medicine/Pharmaceutical Science Campus/University Hospital Campus)			Language	English
Keyword	Data processing / Informatics / Data analysis / Scripting / Programming				
[Outline and Purpose of the Course]					
Students of all disciplines are encouraged to enroll.					
Students will learn techniques in order to perform project-based analysis of large datasets related to their field of study. Emphasis will be placed on creating structured and maintainable solutions to problems arising in their project, visualization of results, and coherent presentation of their project development.					
Students can combine techniques from the course "Processing and analyzing data I" with new techniques to be learned in the seminar. The prior course is recommend to be completed or taken in parallel, though is not a hard requirement.					
[Course Goals]					
Students will have successfully completed a data analysis project using data in their field of study or their hobby/interest. Students will be able to present their project to the instructor and their peers, including a detail of their data analysis methods.					
(Optional) Students who wish to pursue an advanced analysis of data and present their findings in an academic venue (for example, conference presentation or paper) will receive appropriate advisory support.					
[Course Schedule and Contents]					
(1) Review: shell scripting and basic data processing/filtering techniques.					
(2~7) The Python programming language basics: [Development environment, project organization and presentation]: the Jupyter Notebook [Data types]: strings, lists, tuples, dictionaries, numbers [Control structures]: if/for/while [Functions]: Function definitions, function arguments [Documentation]: getting help, writing help [Modules]: importing, using, and creating					

Continue to ILAS Seminar-E2 :Project-based data analysis seminar (プロジェクト型データ解析) (2) ↓ ↓ ↓

ILAS Seminar-E2 :Project-based data analysis seminar (プロジェクト型データ解析) (2)	
[Standard/common libraries]: os, sys, logging, numpy, scipy, matplotlib (Time-permitting: class design and Python-specific features)	
(8~9) Basic statistics, statistical reasoning, and "responsible" analyses	
(10)~(14) Individual student project development and analysis	
(15) Student project presentations	
(16) Feedback : Student survey of seminar	
[Class requirement]	
"Processing and analyzing data I" IS STRONGLY RECOMMENDED to be completed before this seminar.	
*Students with prior experience in computer science or programming may be considered for this course even if they have not completed "Processing and analyzing data I". An appointment for discussion with the instructor is recommended.	
[Method, Point of view, and Attainment levels of Evaluation]	
Attendance and participation (35%), project quality (40%), final presentation (25%)	
[Textbook]	
Not used	
[Reference book, etc.]	
(Reference book) Introduced during class	
[Regarding studies out of class (preparation and review)]	
Students will need to acquire datasets outside of class. Students should review seminar contents for 2-6 hours per week, and be prepared to spend 3-6 hours per week analyzing their data and preparing to present their projects.	
[Others (office hour, etc.)]	
It is required that students have their own computer to participate in seminars and actively develop their projects.	

Lecture code: Z002063

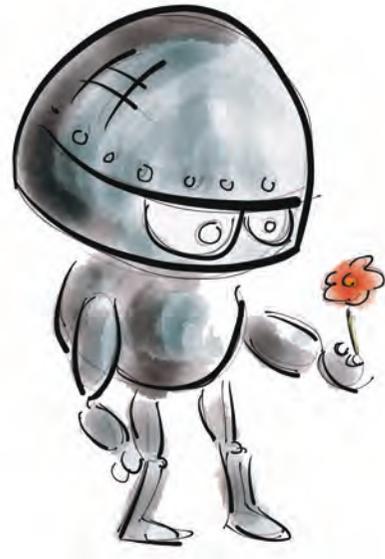
Course numbering		U-LAS70 10002 SE50			
Course title <English>	ILAS Seminar-E2 :Wearable technology (ウェアラブル技術入門) ILAS Seminar-E2 :Wearable technology	Affiliated department, Job title,Name	Graduate School of Engineering Senior Lecturer,PHILAMORE, Hemma		
Group	Seminars in Liberal Arts and Sciences	Number of credits	2	Number of weekly time blocks	1
Class style	Seminar	Course offered year/period	2019・First semester	Quota (Freshman)	10 (10)
Target year	Mainly 1st year students	Eligible students	For all majors	Day/period	Wed.5
Classroom	01, Yoshida-South Campus Academic Center Bldg. West Wing		Language	English	
Keyword	Electronics / Wearable devices / Smart materials / Programming / Arduino				
[Outline and Purpose of the Course]					
Electrical technology worn on the body is advancing areas from medical devices (e.g fitness trackers and robotic prostheses) to fashion design and consumer electronics (e.g. the Apple watch).					
This course is about the electronics, smart-materials, and design features that are used in these miniature, lightweight and ergonomic devices.					
Students will study the technology behind wearable devices:					
- taught theory about smart-materials, sensors for biological and environmental parameters and wearable actuators.					
- Arduino micro-controller programming					
- in-class practical experiments to build and test simple wearable electronic devices.					
[Course Goals]					
• Obtain a strongly connected theoretical and practical understanding of wearable technologies including sensors, materials and actuators.					
• Develop broadly applicable practical laboratory skills including experimental setup, documentation and group work.					
• Obtain skills in micro-controller program.					
• Develop applied skills in practical electronics and device design.					
• Learn about the interaction between measurable electrical data and human biology.					
[Course Schedule and Contents]					
1. Introduction (1 week)					
2. Wearable electrical circuits (1 week)					
3. Introduction to Arduino programming (1 week)					
4. Sensing motion with smart materials (1 week)					
5. Sensing touch (1 week)					
6. Making sense of biometrics (1 week)					
7. Reading bio-electrical signals (1 week)					
----- Continue to ILAS Seminar-E2 :Wearable technology (ウェアラブル技術入門) (2) ↓ ↓ ↓					

ILAS Seminar-E2 :Wearable technology (ウェアラブル技術入門) (2)	

8. Bionics (1 week)	
9. Haptics (1 week)	
10. Wireless communication (1 week)	
11. Embedded motion sensing : Part 1 10. (1 week)	
12. Embedded motion sensing : Part 2 10. (1 week)	
13. User interfaces and displays 10. (1 week)	
14. In-class trouble-shooting session for final project (1 week)	
15. Final presentation (1 week)	
This is a provisional schedule for the course. The order and time allocated to each theme is subject to change depending on the class size and student ability. Students will be notified of changes to the schedule in advance to give adequate time to prepare for forthcoming seminars.	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Evaluation will be based on:	
- active participation 15%	
- individual project (design and build a wearable device)	
- report 50%	
- prototyping and testing 20%	
- oral presentation 15%	
[Textbook]	
Instructed during class	
[Reference book, etc.]	
(Reference book)	
Introduced during class	
[Regarding studies out of class (preparation and review)]	
More detailed instructions will be provided in class.	
[Others (office hour, etc.)]	

Lecture code: Z002043

Course numbering		U-LAS70 10002 SE50			
Course title <English>	ILAS Seminar-E2 :Minds and Machines- Can a Machine Think (心と機械)		Affiliated department, Job title,Name	Graduate School of Medicine Senior Lecturer,ZENAS C. CHAO	
	ILAS Seminar-E2 :Minds and Machines- Can a Machine Think				
Group	Seminars in Liberal Arts and Sciences	Number of credits	2	Number of weekly time blocks	1
Class style	Seminar	Course offered year/period	2019・First semester	Quota (Freshman)	15 (15)
Target year	Mainly 1st year students	Eligible students	For all majors	Day/period	Thu.2
Classroom	3B, Yoshida-South Campus Academic Center Bldg. North Wing			Language	English
Keyword	Mind / Brain / Artificial Intelligence / Neuroscience / Robot				
[Outline and Purpose of the Course]					
This course examines the nature of mind and the prospect of artificial intelligence. You will have class discussions and debates about issues such as “What is the mind?” and “Can a machine think?” During the course, you will learn to make philosophical and scientific arguments, and to express them in writing and presentation. Final project is to build and program a LEGO robot for a sumo challenge (no programming experience required).					
[Course Goals]					
(1) To investigate fundamental issues relating to our minds philosophically and scientifically. (2) To express investigation results in discussion, writing, and presentation. (3) To design an autonomous LEGO robot. (4) To work with others as both a team member and leader.					
[Course Schedule and Contents]					
(1) Introduction					
PART I. The Philosophy of Mind					
(2) Chinese Room Argument- Can a Computer Have a Mind? (3) Debate Practice #1 (4) Debate Practice #2 (5) Turing Test- How Intelligent Can a Computer Be? (6) Personal Identity- Who Am I? (7) Midterm Debate (8) Midterm Debate					
PART II. The Science of Mind					
(9) LEGO Robot Programming Tutorial (10) Mind Reading & Mind Control (11) Self & Free Will (12) Consciousness (13) Machine Minds (14) Final Project- LEGO Robot Sumo Competition					
Continue to ILAS Seminar-E2 :Minds and Machines- Can a Machine Think (心と機械) (2) ↓ ↓ ↓					

ILAS Seminar-E2 :Minds and Machines- Can a Machine Think (心と機械) (2)
(16) Feedback
[Class requirement]
None
[Method, Point of view, and Attainment levels of Evaluation]
In-class discussion (~40%), midterm debate (~30%), final project (~30%).
[Textbook]
Not used
[Reference book, etc.]
(Reference book) Introduced during class
[Regarding studies out of class (preparation and review)]
Students will need to prepare for class discussions, which will be assigned at least a week earlier. For the midterm and final projects, students are expected to meet up with their team members on a weekly basis.
[Others (office hour, etc.)]


Lecture code: Z002041

Course numbering		U-LAS70 10002 SE50					
Course title <English>	ILAS Seminar-E2 :Encounters with modern arithmetic (現代整数論との出会い)		Affiliated department, Job title, Name	Research Institute for Mathematical Sciences Senior Lecturer, TAN, Fucheng			
	ILAS Seminar-E2 :Encounters with modern arithmetic						
Group	Seminars in Liberal Arts and Sciences		Number of credits	2	Number of weekly time blocks	1	
Class style	Seminar		Course offered year/period	2019・First semester		Quota (Freshman)	15 (15)
Target year	Mainly 1st year students	Eligible students	For all majors		Day/period	Thu.5	
Classroom	36, Yoshida-South Campus Academic Center Bldg. North Wing			Language	English		
Keyword	Galois theory / polynomials / modern algebra						
[Outline and Purpose of the Course]							
<p>It is a classical question from centuries ago whether a quintic (or of higher degree) polynomial equation is solvable in terms of its coefficients, with only use of the usual operations (addition, subtraction, multiplication, division) and application of radicals (square roots, cube roots, etc). Galois theory was born to answer this question, the answer to which turns out to be negative in general. On the other hand, Galois theory has gone far beyond this and is rightly regarded as one of the central features of modern mathematics nowadays, which is in particular fundamental for the study of arithmetic problems.</p> <p>Although the so-called "fundamental theorem of Galois theory" is commonly considered as the summit of undergraduate algebra, which usually takes a year to reach, in this course we learn to prove the unsolvability of the general quintic equation with as little Galois theory as possible. Along the way, we shall see the elegance and beauty of modern/abstract algebra.</p> <p>It is worth mentioning that abstract algebra has also found applications in science and engineering, e.g. in cryptography.</p>							
[Course Goals]							
We will learn the basic concepts and theorems in group theory, ring theory, field theory, and Galois theory. As an application, we shall also be able to determine which polynomial equations are solvable in radicals.							
[Course Schedule and Contents]							
We intend to cover a big chunk of modern algebra in a condensed and interesting way, to make it accessible to most undergraduate students. Both concepts and examples will be emphasized.							
Below is the plan and contents of the course. (The lectures, as well as the order of the lectures, may be modified, depending on students' background and understanding of the course materials.)							
<ul style="list-style-type: none"> - Set Theory [1 week]: Notion of sets, mappings, mathematical induction, Zorn's lemma. - Group theory [3-4 weeks]: Definition and examples of groups, homomorphisms, abelian groups, symmetric groups, Sylow's theorem. 							
<small>Continue to ILAS Seminar-E2 :Encounters with modern arithmetic (現代整数論との出会い) (2) ↓ ↓ ↓</small>							

<small>ILAS Seminar-E2 :Encounters with modern arithmetic (現代整数論との出会い) (2)</small>	
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<ul style="list-style-type: none"> - Ring theory [3-4 weeks]: Definition and examples, ideals, quotient rings, polynomial rings. - Field theory [2-3 weeks]: Definition and examples, field extensions, polynomials, finite fields. - Galois theory [2-3 weeks]: Galois extensions, roots of unity, solvability. 	
[Class requirement]	
It is helpful to know basics in linear algebra, but not required.	
[Method, Point of view, and Attainment levels of Evaluation]	
The evaluation consists of three weighted parts, which may be modified, depending on the number of students in class:	
<ul style="list-style-type: none"> - Discussion performance in class (35%). - Final presentation (65%): A variety of topics will be provided by the instructor. If the number of students is small, each student will select his/her own topic among these topics. If the number of students is relatively large, a student will obtain his/her topic by lottery (among the topics provided by the instructor). The pool of topics will be shown to the students by Week 4 and the presentations will start no earlier than Week 6. 	
[Textbook]	
D. Dummit and R. Foote 『Abstract Algebra』 (Wiley; 3rd edition) ISBN:9780471433347	
S. Lang 『Algebra』 (Springer; 3rd rev. edition) ISBN:9780387953854	
[Reference book, etc.]	
(Reference book)	
N. Bourbaki 『Algebra I: Chapters 1-3』 (Springer; 1st ed. 1974. 2nd printing edition) ISBN: 9783540642435	
Other supplemental materials will be introduced during the classes.	
[Regarding studies out of class (preparation and review)]	
Along with preparation and review, students are encouraged to form study groups.	
[Others (office hour, etc.)]	

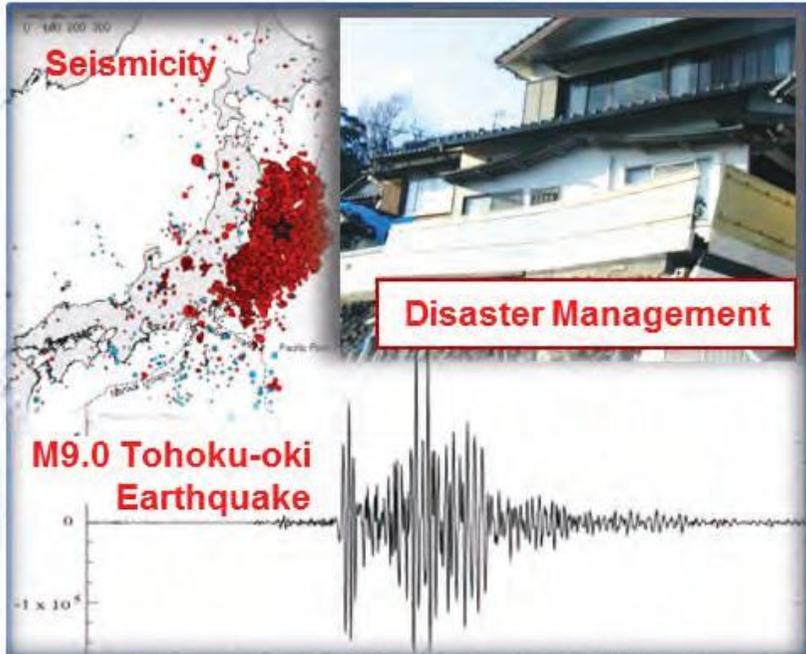
Lecture code: Z002046

Course numbering		U-LAS70 10002 SE50					
Course title <English>	ILAS Seminar-E2 :Ethical issues in Health sciences (健康科学における倫理的課題)		Affiliated department, Job title,Name	Graduate School of Medicine Assistant Professor,POUDYAL, Hemant			
	ILAS Seminar-E2 :Ethical issues in Health sciences						
Group	Seminars in Liberal Arts and Sciences		Number of credits	2	Number of weekly time blocks	1	
Class style	Seminar		Course offered year/period	2019・First semester		Quota (Freshman)	10 (10)
Target year	Mainly 1st year students	Eligible students	For all majors		Day/period	Thu.5	
Classroom	Seminar room 23, ILAS Bldg.				Language	English	
Keyword	Ethics / Euthanasia / Stem Cell Research / Genetic modification / Abortion						
[Outline and Purpose of the Course]							
<p>In this course, we will explore major ethical issues in health sciences and will introduce institutional positions and debate various topics based on relevant case studies. Classical themes such as end of life care, euthanasia and animal/human research as well as emerging topics such as stem cell research and genetically modified organisms will be covered.</p> <p>The purpose of this course is to enable the students to think clearly and carefully through their own positions on important ethical issues in healthcare. Students will be taught to craft well-argued, well-written papers and express their own views clearly in class discussions and engage the views of their classmates.</p>							
[Course Goals]							
<ol style="list-style-type: none"> 1. To achieve familiarity with some basic ethical frameworks 2. To identify, analyze and summarize ethical issues 3. Clearly and carefully develop own positions on important ethical issues 4. Express your own views clearly in class discussion and engage the position of others 							
[Course Schedule and Contents]							
<p>In principle, the course will be offered along the following plan. However, order or the number of times for each theme may change depending on the progression of the course or handling on current topics.</p> <ol style="list-style-type: none"> 1. Ethical reasoning 2. Principles and theories of bioethics 3. Request to die: Doctor-assisted suicide 4. Abortion 5. Assisted reproduction 6. Seriously ill infants 7. Ethical issues in testing for genetic diseases 8. Ethical issues in transplantation 9. Medical research on animals 10. Clinical Research 11. & 12. Embryos, stem cells and cloning 13. Genetically modified plants and dietary futures 14. Healthcare policy-Right to health care 							
Continue to ILAS Seminar-E2 :Ethical issues in Health sciences (健康科学における倫理的課題) (2) ↓ ↓ ↓							

ILAS Seminar-E2 :Ethical issues in Health sciences (健康科学における倫理的課題) (2)	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Classroom participation and discussion 50%	
Evaluating a case study 50%	
[Textbook]	
Not used	
[Reference book, etc.]	
(Reference book)	
Reference materials will be provided during the class.	
[Regarding studies out of class (preparation and review)]	
<ol style="list-style-type: none"> 1. Students are expected to come to class having completed the assigned reading and writing, and ready to contribute to discussions. 2. Students are required to write a report on one of the cases covered in class for which they will do additional research on their own. 	
[Others (office hour, etc.)]	
Please contact the instructor by email if you have any questions. The instructor will also be available for course-related consultation out of seminar hours is requested by the students. Please make an appointment by email (medsocio.kyodai@gmail.com).	

Lecture code: Z002004

Course numbering		U-LAS70 10002 SE50					
Course title <English>	ILAS Seminar-E2 :Frontiers of Earthquake Science (地震学の最前線)		Affiliated department, Job title,Name	Graduate School of Science Associate Professor,ENESCU, Bogdan Dumitru			
	ILAS Seminar-E2 :Frontiers of Earthquake Science						
Group	Seminars in Liberal Arts and Sciences		Number of credits	2	Number of weekly time blocks	1	
Class style	Seminar		Course offered year/period	2019・First semester		Quota (Freshman)	15 (10)
Target year	Mainly 1st year students	Eligible students	For all majors		Day/period	Thu.5	
Classroom	152, Faculty of Science Bldg. No.1 (North Campus)				Language	English	
Keyword	Earthquakes (地震) / Tsunami (津波) / Disaster Prevention (防災)						
[Outline and Purpose of the Course]							
<p>We are going to read scientific papers related to important/frontier topics of Earthquake Science. The purpose is to understand the key-message of the paper, rather than the detailed technical background. To facilitate understanding, some materials/vocabulary in Japanese will be provided during the seminar. 日本語のキーワード等もだしますので、遠慮なく参加してください。楽しく最前線の科学の面白さを学びながら、英語の能力も向上しましょう！</p>							
[Course Goals]							
The student will become familiar with current important topics of Earthquake Science. The seminar also aims enabling the student to discuss earthquake related research topics in English.							
[Course Schedule and Contents]							
<p>Each student is going to choose a paper in the field of Earthquake Science, and prepare a short report (few PowerPoint slides), summarizing the main ideas of the study. The paper can be chosen freely; some broad suggestions include:</p> <ul style="list-style-type: none"> - Megathrust earthquakes: physics and possibility of prediction; - Tsunami: physics and early warning; - Deep structure of the Earth 'illuminated' by seismic waves; - Earthquake disaster prevention. <p>The first class will give students some broad options of topics/papers. During the second class we will decide the paper that each student is going to present. I will exemplify with a research presentation during the third class. Starting with the fourth class each student is going to present the chosen paper and will get feedback for improving his report. In the examination day, each student should present briefly his updated/revised report.</p> <p>Depending on the number of students and available time, we will visit the underground seismic base isolation at the "Kyoto University Clock Tower", go to the nearby Hanaore Fault or visit the Disaster Prevention Research Institute (DPRI), Kyoto University, to discuss with an earthquake scientist.</p>							
Continue to ILAS Seminar-E2 :Frontiers of Earthquake Science (地震学の最前線) (2) ↓ ↓ ↓							

ILAS Seminar-E2 :Frontiers of Earthquake Science (地震学の最前線) (2)
[Class requirement]
None
[Method, Point of view, and Attainment levels of Evaluation]
Grading will be based on attendance and participation (60%) and presentation of chosen paper (40%).
[Textbook]
Not used
[Regarding studies out of class (preparation and review)]
The student will have to prepare the assigned paper.
[Others (office hour, etc.)]
Students can meet me during office hours with prior appointment.


Lecture code: Z002019

Course numbering		U-LAS70 10002 SE50			
Course title <English>	ILAS Seminar-E2 :How to Read a Scientific Paper (英語科学論文の読み方)		Affiliated department, Job title,Name	Graduate School of Biostudies Professor,HEJNA, James	
	ILAS Seminar-E2 :How to Read a Scientific Paper				
Group	Seminars in Liberal Arts and Sciences		Number of credits	2	Number of weekly time blocks
					1
Class style	Seminar		Course offered year/period	2019・First semester	
				Quota (Freshman)	6 (6)
Target year	Mainly 1st year students	Eligible students	For all majors		Day/period
					Thu.5
Classroom	Seminar room B, 2F, Faculty of Medicine Bldg. G (Faculty of Medicine/Pharmaceutical Science Campus/University Hospital Campus)			Language	English
Keyword	English / Biology / Scientific literature / Analysis				
[Outline and Purpose of the Course]					
Scientific literacy is essential for a scientific career. More importantly, however, for a democracy to function, an educated electorate must be capable of discerning fact from hyperbole. In this class, we will examine a few influential papers in depth. This will introduce you to a basic approach to reading the primary scientific literature that will help you to reach your own conclusions about the data. Each student will pick one or two papers, and in class, together, we will try to understand everything about them--concepts, methods, analysis, interpretation, significance. This will be an opportunity to learn some science, as well as to see how experiments are designed. The class structure will depend on how many students enroll.					
[Course Goals]					
Students will acquire the ability to read scientific papers on their own, including how to track down additional information and how to look critically at data. Students will use their chosen papers as a springboard to explore subjects that are of particular interest to them, or subjects that are brand new.					
[Course Schedule and Contents]					
First Semester, Thursdays, 16:30-18:00PM					
Optimally, each student will be able to choose 2 scientific papers to read in depth. During each class, we will spend a little time on each student's chosen paper, analyzing each paper over several weeks. If many students are enrolled, we may only have time for one paper from each student.					
<ol style="list-style-type: none"> Types of Scientific Communication and Resources Students find papers that interest them and bring them to class Overviews of the papers, learning the background information Analysis of the Abstract and Introduction (in-class discussion) Understanding the Methods (in-class discussion) Analysis of Figures and Results (in-class discussion) Analysis of the Discussion (in-class discussion) Analysis of style (in-class discussion) Analysis of Paper #2 Abstract and Introduction (in-class discussion) Analysis of Paper #2 Methods (in-class discussion) Analysis of Paper #2 Figures and Results (in-class discussion) 					
Continue to ILAS Seminar-E2 :How to Read a Scientific Paper (英語科学論文の読み方) (2) ↓ ↓ ↓					

ILAS Seminar-E2 :How to Read a Scientific Paper (英語科学論文の読み方) (2)	
<ol style="list-style-type: none"> Analysis of Paper #2 Discussion and style (in-class discussion) Analysis of paper #2 Summaries of papers. Student written assignment due, and group discussion 	
<p>This schedule is flexible, and will depend on how many students enroll in the course. The schedule also will depend on the types of papers that we are analyzing. For example, a paper with many results may require 2 weeks just to cover the results; we may also spend more time understanding particular methods, again depending on the papers that you will choose to read. Some papers will require a lot of background reading--that's part of the fun of science!</p> <p>The class is open to all 1st and 2nd year students, although the papers will mainly come from the field of Biology (my expertise). Grading will be based on attendance, participation, and a take-home written assignment.</p>	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Grading will be based on attendance(40 points), participation (40 points), and a take-home written assignment(20 points), which will be a summary of one of the papers that we have read together. The take-home written assignment will be graded on the basis of content and concepts rather than grammar.	
[Textbook]	
Not used No textbook is required. I will provide background materials as the need arises. Often I help to explain methods or background information, and provide information from textbooks or review articles as needed. The class will be held in English, so an intermediate level of English or better would be helpful, since much of the background reading will be in English.	
[Reference book, etc.]	
(Reference book) I will provide additional background material as the need arises, depending on the topic of each paper that is chosen by students.	
[Regarding studies out of class (preparation and review)]	
Out of class reading may take 2-3 hours per week, to learn about the background for the papers that are discussed during class.	
[Others (office hour, etc.)]	
Office hours, Mondays, 10:00-12:00. I am often in my office, so you are free to drop in, and if I am there, I can usually find some time to discuss biology.	

Lecture code: Z002022

Course numbering		U-LAS70 10002 SE50					
Course title <English>	ILAS Seminar-E2 :Introduction to Stem and iPS Cells (幹細胞とiPS細胞入門)		Affiliated department, Job title,Name	Graduate School of Medicine Senior Lecturer,Marco,Marques Candeias			
	ILAS Seminar-E2 :Introduction to Stem and iPS Cells						
Group	Seminars in Liberal Arts and Sciences		Number of credits	2	Number of weekly time blocks	1	
Class style	Seminar		Course offered year/period	2019・First semester		Quota (Freshman)	15 (15)
Target year	Mainly 1st year students	Eligible students	For all majors		Day/period	Thu.5	
Classroom	04, Yoshida-South Campus Bldg. No. 1				Language	English	
Keyword	Stem Cell / iPS Cell / Cell Therapy / Disease Modelling / Drug Screening						
[Outline and Purpose of the Course]							
How a single egg-cell can give rise to a tridimensional complex system of tissues and organs in the organism. Fundamentals of Embryology (from the oocyte until gastrulation/neurulation) and Stem Cell Biology (from ES to iPS) will be introduced. Students will learn from recent research articles (including the original Takahashi & Yamanaka paper) as well as from recent textbooks on Developmental Biology and Stem Cell Research. After learning about the several subjects, the students will present recent research in class and active discussion will be encouraged.							
[Course Goals]							
The classes will be interactive. The students will learn from the instructor as well as from each other. Recent exciting research discoveries about iPS cells and cell replacement therapy will be introduced and discussed. The students will learn about stem cells, cell commitment and differentiation, iPS cells, disease modelling, drug screening and personalised cellular therapy.							
[Course Schedule and Contents]							
The following topics will be viewed during a total of 14 classes:							
<ul style="list-style-type: none"> . Differential Gene Expression . Fertilization: Beginning a New Organism . Early Development in Mammals . Embryonic Stem Cells . Differentiation in Early Development . Generation of Induced Pluripotent Stem (iPS) Cells . Characteristics and Characterization of Pluripotent Stem Cells . Cancer Stem Cells . Neural Stem Cells: Therapeutic Applications in Neurodegenerative Diseases . Use of Embryonic Stem Cells to Treat Heart Disease . Insulin-Producing Cells Derived from Stem Cells: A Potential Treatment for Diabetes . Stem Cells for the Treatment of Muscular Dystrophy . Cell Therapy for Liver Disease . Skin Regeneration . Embryonic Stem Cells in Tissue Engineering . Adult Stem Cells in Tissue Engineering . Stem Cell Gene Therapy 							
Continue to ILAS Seminar-E2 :Introduction to Stem and iPS Cells (幹細胞とiPS細胞入門) (2) ↓ ↓ ↓							

ILAS Seminar-E2 :Introduction to Stem and iPS Cells (幹細胞とiPS細胞入門) (2)	
. iPS Cells in Disease Modelling and Drug Screening	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Evaluation will be based on active participation (20 %), assignments (50 %) and quizzes/test (30 %). Those who are absent more than four times will not be credited.	
[Textbook]	
Edited by:Robert Lanza and Anthony Atala 『Essentials of Stem Cell Biology (Third Edition)』 (Academic Press) ISBN:9780124095038, 9780124104273 (2013) Scott F. Gilbert 『Developmental Biology 10th』 (Sinauer Associates) ISBN:9780878939787 (2013)	
[Regarding studies out of class (preparation and review)]	
A few hours will be necessary weekly to prepare for the class. Handouts will be available in advance to help with the preparation. During the assignment week extra hours will be necessary in order to prepare for the presentation in class.	
[Others (office hour, etc.)]	
Questions and discussions during class are highly encouraged. Questions and discussions will also be addressed, happily, any other time, even outside the official office hours.	
	

Lecture code: Z002017

Course numbering		U-LAS70 10002 SE50			
Course title <English>	ILAS Seminar-E2 :Introduction to Biomedical Presentation and Debate (医学英語入門-プレゼンテーションとディベート)		Affiliated department, Job title,Name	Graduate School of Medicine Assistant Professor,Erik WALINDA	
	ILAS Seminar-E2 :Introduction to Biomedical Presentation and Debate				
Group	Seminars in Liberal Arts and Sciences	Number of credits	2	Number of weekly time blocks	1
Class style	Seminar	Course offered year/period	2019・First semester	Quota (Freshman)	7 (7)
Target year	Mainly 1st year students	Eligible students	For all majors	Day/period	Thu.5
Classroom	3B, Yoshida-South Campus Academic Center Bldg. North Wing			Language	English
Keyword	Presentation / Discussion / Biomedical Science				
[Outline and Purpose of the Course]					
1. Presentation					
Sadly, 95% of presentations are really not interesting.					
Really?					
No, it is actually 99%					
In fact, when we attend a presentation, we often see members of the audience sleeping. This is a problem.					
Most people <have to> give presentations at conferences or business meetings.					
Unfortunately, most presentations are:					
* long					
* boring					
* bad slides					
* no meaning					
What we actually <want> is:					
* short					
* simple					
* easy to understand					
* entertaining					
In this class, students will learn what is important to give a great presentation. They will see that presentations can be <fun>.					
2. Debate					

Continue to ILAS Seminar-E2 :Introduction to Biomedical Presentation and Debate 医学英語入門-プレゼンテーションとディベート (Q)

ILAS Seminar-E2 :Introduction to Biomedical Presentation and Debate 医学英語入門-プレゼンテーションとディベート (Q)	

Most Japanese students do not like debate. However, this can be fun, too, if you just it! In the class, we will first find a topic, which the class is interested in.	
Before the debate, students will research about the topic and chose their arguments.	
Then, students will choose the Pro- or Contra- side (about 3 students each).	
Next is the actual debate. Now, students in the pro- and contra-groups will deliver their speeches (about 2-3 minutes per speaker). The audience group will actively join the floor discussion.	
At the end of the debate we will discuss, whether the pro- or the contra-group delivered the more convincing speeches.	
[Course Goals]	
This seminar focuses on developing the students' ability to present and discuss scientific matters in English. This class mainly aims at (i) raising the students' confidence in talking about non-trivial things in a foreign language, (ii) making sure that the points presented by the students are indeed logically connected and (iii) being able to deal with questions and answers.	
[Course Schedule and Contents]	
1. Course Introduction [Weeks 1-2]	
2. Presentation Preparation [Weeks 3-5]	
3. Presentation Design [Weeks 6-8]	
4. Presentation Delivery [Week 9]	
5. Final Presentation by the Students (evaluation) [Week 10]	
6. Debating [Week 11-14]	
7. Feedback [Week 16]	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Active participation is absolutely required in this seminar. In the debating part, students are expected to talk about scientific matters in English. In the presentation section, not only the presenter, but all students are expected to ask questions or share their opinion about the subject in English.	
Attendance and Active participation [60%] Assignments (presentation and debate) [40%]	
[Textbook]	
Not used	

Continue to ILAS Seminar-E2 :Introduction to Biomedical Presentation and Debate 医学英語入門-プレゼンテーションとディベート (Q)	

Continue to ILAS Seminar-E2 :Introduction to Biomedical Presentation and Debate 医学英語入門-プレゼンテーションとディベート (Q)

[Regarding studies out of class (preparation and review)]

- * Research on assigned presentation topics.
- * Preparation of presentations.
- * Research about debate topics

[Others (office hour, etc.)]

Office hour: any time.

Lecture code: Z002018

Course numbering		U-LAS70 10002 SE50					
Course title <English>	ILAS Seminar-E2 :Introduction to the biology of nematodes (線虫の生物学入門)		Affiliated department, Job title,Name	Graduate School of Biostudies Associate Professor,CARLTON, Peter			
	ILAS Seminar-E2 :Introduction to the biology of nematodes						
Group	Seminars in Liberal Arts and Sciences		Number of credits	2	Number of weekly time blocks	1	
Class style	Seminar		Course offered year/period	2019・First semester		Quota (Freshman)	10 (10)
Target year	Mainly 1st year students	Eligible students	For all majors		Day/period	Thu.5	
Classroom	3C, Yoshida-South Campus Academic Center Bldg. North Wing				Language	English	
Keyword	biology / genetics						
[Outline and Purpose of the Course]							
<p>This class will introduce to students one of the most abundant forms of life on earth: the Nematodes or roundworms. The most famous of these is the useful model organism called <i>Caenorhabditis elegans</i>. The goal of the class is to provide both a survey of how scientists use the worm to conduct research, demonstrate the worm's great importance to biology, and provide hands-on experience with simple worm manipulation. Students will learn directly about some of the current biological questions that are being addressed with this versatile model organism. We will also find wild nematodes around Kyoto, make scientific observations on them and use DNA sequencing to identify their species. Whether we find a new species, or identify new isolates of known ones, this class will introduce you to a new realm of life.</p> <p>線虫学入門 - 生物学を学びながら新種の線虫を見つけよう!</p> <p>線虫は動物の中で最も個体数の多い生物種です。線虫は土壌や植物から簡単に見つけることができ、分子生物学における重要なモデル生物の一つでもあります。2002年には、線虫を用いた細胞死の研究に対して、2006年には、線虫におけるRNA干渉の発見に対して、それぞれノーベル賞が贈られています。線虫が持つ遺伝子のうち、60-70%は私たち人間にも共通しているため、ヒトにも共通する様々な生体のメカニズムを理解することを目指して、飼育や遺伝子組み換えが容易な線虫が、実験材料として分子生物学では用いられます。</p> <p>この授業では、各自、サンプルを持参して、そこから線虫を取り、それぞれの線虫のゲノムDNAの一部を増幅し、そのシーケンスを読むことによって、線虫種を同定します。</p> <p>新種の線虫を発見する可能性もあり！新種の線虫の探索に加えて、分子生物学の研究において一般的に使われている野生株と変異株を用いた遺伝学実験、高解像度顕微鏡を用いた染色体構造の観察も行います。</p>							
[Course Goals]							
<ul style="list-style-type: none"> -To understand the biology and diversity of nematodes -To understand the uses of the nematode <i>Caenorhabditis elegans</i> in modern biological research -To understand the anatomy and life cycle of <i>C. elegans</i> -To learn how to create new strains containing desired mutations by designing crosses between animals -To acquire the knowledge and experience needed to begin genetic research with <i>C. elegans</i> 							
Continue to ILAS Seminar-E2 :Introduction to the biology of nematodes (線虫の生物学入門) (2) ↓ ↓ ↓							

ILAS Seminar-E2 :Introduction to the biology of nematodes (線虫の生物学入門) (2)	
[Course Schedule and Contents]	
<p>1 Overview of the course; nematodes and the place of <i>C. elegans</i> in the tree of life. Set up for worm collection.</p> <p>2-3 Nematode development, anatomy, and life cycle</p> <p>4-8 Wild Worms of Kyoto: worm observation and species identification</p> <p>5 Basic worm genetics: selfing and crossing (with microscopy observation)</p> <p>6 Fluorescence microscopy of worm chromosomes</p> <p>7-10 Genetics, meiosis, and sex chromosomes</p> <p>11-12 Genome sequence of <i>C. elegans</i> and its relatives</p> <p>13-14 Selected topics in nematode research and application to human health</p>	
[Class requirement]	
This is an introductory course. There are no requirements, but a basic familiarity with biology and genetics will be beneficial.	
[Method, Point of view, and Attainment levels of Evaluation]	
Evaluations will be based on participation, short quizzes, and either a final exam or a term paper. Each area will contribute 1/3rd of the total grade.	
[Textbook]	
Instructed during class	
[Reference book, etc.]	
<p>(Reference book)</p> <p>Fay, Starr, Spencer, Johnson 『Worm Breeding for Dummies: A guide to genetic mapping in <i>C. elegans</i>』 (PDF textbook)</p>	
[Regarding studies out of class (preparation and review)]	
Students will have to understand technical vocabulary in English. This may require studying outside of class hours.	
[Others (office hour, etc.)]	
<p>Office hours will be 1 hour once per week, schedule to be announced on the first day of class.</p> <p>This class involves some genetic experiments on nematodes. 遺伝子実験：対象(ヒト以外の動物、植物、生物等)</p>	
<p>Investigating the mechanisms of chromosome pairing and segregation using <i>C. elegans</i></p>	

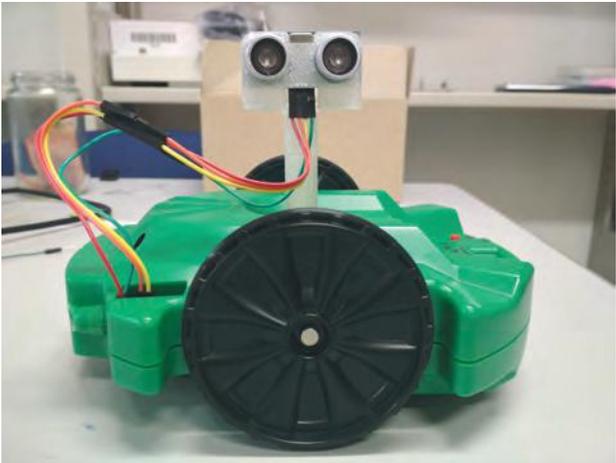
Lecture code: Z002034

Course numbering		U-LAS70 10002 SE50					
Course title <English>	ILAS Seminar-E2 :Introduction to the biology of nematodes (線虫の生物学入門)		Affiliated department, Job title,Name	Graduate School of Biostudies Associate Professor,CARLTON, Peter			
	ILAS Seminar-E2 :Introduction to the biology of nematodes						
Group	Seminars in Liberal Arts and Sciences		Number of credits	2	Number of weekly time blocks	1	
Class style	Seminar		Course offered year/period	2019・Second semester		Quota (Freshman)	10 (10)
Target year	Mainly 1st year students	Eligible students	For all majors		Day/period	Thu.5	
Classroom	3C, Yoshida-South Campus Academic Center Bldg. North Wing				Language	English	
Keyword	biology / genetics / genome / nematodes						
[Outline and Purpose of the Course]							
<p>This class will introduce to students one of the most abundant forms of life on earth: the Nematodes or roundworms. The most famous of these is the useful model organism called <i>Caenorhabditis elegans</i>. The goal of the class is to provide both a survey of how scientists use the worm to conduct research, demonstrate the worm's great importance to biology, and provide hands-on experience with simple worm manipulation. Students will learn directly about some of the current biological questions that are being addressed with this versatile model organism. We will also find wild nematodes around Kyoto, make scientific observations on them and use DNA sequencing to identify their species. Whether we find a new species, or identify new isolates of known ones, this class will introduce you to a new realm of life.</p> <p>線虫学入門 - 生物学を学びながら新種の線虫を見つけよう!</p> <p>線虫は動物の中で最も個体数の多い生物種です。線虫は土壌や植物から簡単に見つけることができ、分子生物学における重要なモデル生物の一つでもあります。2002年には、線虫を用いた細胞死の研究に対して、2006年には、線虫におけるRNA干渉の発見に対して、それぞれノーベル賞が贈られています。線虫が持つ遺伝子のうち、60-70%は私たち人間にも共通しているため、ヒトにも共通する様々な生体のメカニズムを理解することを目指して、飼育や遺伝子組み換えが容易な線虫が、実験材料として分子生物学では用いられます。</p> <p>この授業では、各自、サンプルを持参して、そこから線虫を取り、それぞれの線虫のゲノムDNAの一部を増幅し、そのシーケンスを読むことによって、線虫種を同定します。</p> <p>新種の線虫を発見する可能性もあり！新種の線虫の探索に加えて、分子生物学の研究において一般的に使われている野生株と変異株を用いた遺伝学実験、高解像度顕微鏡を用いた染色体構造の観察も行います。</p>							
[Course Goals]							
<ul style="list-style-type: none"> -To understand the biology and diversity of nematodes -To understand the uses of the nematode <i>Caenorhabditis elegans</i> in modern biological research -To understand the anatomy and life cycle of <i>C. elegans</i> -To learn how to create new strains containing desired mutations by designing crosses between animals -To acquire the knowledge and experience needed to begin genetic research with <i>C. elegans</i> 							
<small>Continue to ILAS Seminar-E2 :Introduction to the biology of nematodes (線虫の生物学入門) (2) ↓ ↓ ↓</small>							

ILAS Seminar-E2 :Introduction to the biology of nematodes (線虫の生物学入門) (2)	
[Course Schedule and Contents]	
Course Schedule and Contents	
1 Overview of the course; nematodes and the place of <i>C. elegans</i> in the tree of life. Set up for worm collection.	
2-3 Nematode development, anatomy, and life cycle	
4-8 Wild Worms of Kyoto: worm observation and species identification	
5 Basic worm genetics: selfing and crossing (with microscopy observation)	
6 Fluorescence microscopy of worm chromosomes	
7-10 Genetics, meiosis, and sex chromosomes	
11-12 Genome sequence of <i>C. elegans</i> and its relatives	
13-14 Selected topics in nematode research and application to human health	
[Class requirement]	
This is an introductory course. There are no requirements, but a basic familiarity with biology and genetics will be beneficial.	
[Method, Point of view, and Attainment levels of Evaluation]	
Evaluations will be based on participation, short quizzes, and either a final exam or a term paper. Each area will contribute 1/3rd of the total grade.	
[Textbook]	
Instructed during class	
[Reference book, etc.]	
(Reference book)	
Fay, Starr, Spencer, Johnson 『Worm Breeding for Dummies: A guide to genetic mapping in <i>C. elegans</i> .』 (PDF textbook)	
[Regarding studies out of class (preparation and review)]	
Students will have to understand technical vocabulary in English. This may require studying outside of class hours.	
[Others (office hour, etc.)]	
Office hours will be 1 hour once per week, schedule to be announced on the first day of class.	
This class involves some genetic experiments on nematodes. 遺伝子実験：対象(ヒト以外の動物、植物、生物等)	

Lecture code: Z002062

Course numbering		U-LAS70 10002 SE50			
Course title <English>	ILAS Seminar-E2 :Introduction to robotics - a practical approach (ロボット工学入門―実践編)		Affiliated department, Job title,Name	Graduate School of Engineering Senior Lecturer,PHILAMORE, Hemma	
	ILAS Seminar-E2 :Introduction to robotics - a practical approach				
Group	Seminars in Liberal Arts and Sciences	Number of credits	2	Number of weekly time blocks	1
Class style	Seminar	Course offered year/period	2019・First semester	Quota (Freshman)	10 (10)
Target year	Mainly 1st year students	Eligible students	For all majors	Day/period	Thu.5
Classroom	04, Yoshida-South Campus Academic Center Bldg. West Wing			Language	English
Keyword	Robotics				
[Outline and Purpose of the Course]					
A course about wheeled mobile robots combining taught theory and weekly, practical, problem-solving experiments.					
Students will learn:					
<ul style="list-style-type: none"> - the working principles of widely used sensors and actuators. - robot programming using the C language. - practical experimentation using robots. - hardware modification to develop the design of a simple robot. - simple control algorithm development. 					
[Course Goals]					
Students can expect to:					
<ul style="list-style-type: none"> - Improve their knowledge of programming, engineering theory and application. - Obtain a strongly connected theoretical and practical understanding of robotics. - Develop broadly applicable practical skills including experimental setup, documentation and group work. 					
[Course Schedule and Contents]					
<ol style="list-style-type: none"> 1. Introduction (1 week) 2. Wheeled robot motion & Programming fundamentals 1(1 week) 3. Internal sensing and communication (1 week) 4. Programming fundamentals 2 (1 week) 5. Navigation (1 week) 6. Actuators (1 week) 7. External sensing (1 week) 8. Proportional control (1 week) 9. Arbitration (1 week) 10. Obstacle avoidance (1 week) 11. Beacons and environmental markers (1 week) 					
Continue to ILAS Seminar-E2 :Introduction to robotics - a practical approach (ロボット工学入門―実践編) (2) ↓ ↓ ↓					

ILAS Seminar-E2 :Introduction to robotics - a practical approach (ロボット工学入門―実践編) (2)	
<ol style="list-style-type: none"> 12. Simple algorithms and AI (1 week) 13. Remote Communication (1 week) 14. Computer vision (1 week) 15. Final assessment (1 week) Feedback session (1 week) 	
This is a provisional schedule for the course. The order and time allocated to each theme is subject to change depending on the class size and student ability. Students will be notified of changes to the schedule in advance to give adequate time to prepare for forthcoming seminars.	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Evaluation will be based on active participation (10 points), assignments (twice, 20 points each), and an examination (50 points). Assignments and individual reports will be assessed on the basis of achievement level for course goals.	
[Textbook]	
Instructed during class	
[Reference book, etc.]	
<p style="text-align: center;">(Reference book)</p> Illah Reza Nourbakhsh and Roland Siegwart 『Introduction to Autonomous Mobile Robots』 (MIT Press) ISBN:9780262015356 (Link : http://home.deib.polimi.it/gini/robot/docs/siegwart.pdf)	
[Regarding studies out of class (preparation and review)]	
More detailed instructions will be provided in class.	
[Others (office hour, etc.)]	
	

Lecture code: Z002068

Course numbering		U-LAS70 10002 SE50					
Course title <English>	ILAS Seminar-E2 :Programming for data analysis (データ解析のためのプログラミング)		Affiliated department, Job title,Name	Institute for Frontier Life and Medical Sciences Program-Specific Senior Lecturer,VANDENBON, Alexis			
	ILAS Seminar-E2 :Programming for data analysis						
Group	Seminars in Liberal Arts and Sciences		Number of credits	2	Number of weekly time blocks	1	
Class style	Seminar		Course offered year/period	2019・First semester		Quota (Freshman)	10 (10)
Target year	Mainly 1st year students	Eligible students	For all majors		Day/period	Thu.5	
Classroom	26, Yoshida-South Campus Bldg. No. 1				Language	English	
Keyword	Programming / R / Data analysis / Statistics						
[Outline and Purpose of the Course]							
R programming language is a useful environment for statistical data analysis and graphical display. The R language is widely used in many fields of science, for data processing, analysis, and visualization. In this course, I will introduce basic R programming techniques and objects. Using example applications, I will also illustrate the use of R for running statistical tests, machine learning, data visualization, and the R Bioconductor packages.							
[Course Goals]							
Students will learn the basic features of the R language for data manipulation, computation, and visualization. They will learn how to write your own code and functions, and how to use publicly available packages. Example applications introduced during the course will give students enough experience to use R for their own analysis.							
[Course Schedule and Contents]							
In principle, the course will be offered according to the following plan. However, depending on the progress of the course the order or the number of lectures for each topic may change.							
1. Introduction to R: We will introduce R, its main features, and advantages and disadvantages. Using R interactively we will discuss some simple data types and commands.							
2. Simple manipulations, numbers and vectors: In this session, we will continue introducing simple operations. We will also discuss vectors, how to access their elements, and how to manipulate them.							
3. Arrays and matrices: We will cover how to make arrays and matrices, and how to apply commands on them. Outer products, determinants, transpose, inverse matrices and matrix multiplication will be introduced.							
4. Lists and data frames: We will introduce lists and data frames, and their basic commands and features.							
5. Reading data from files: We will discuss several ways of reading in data from files, and how to store them into variables. Also, we will cover commands for writing data to files.							
6. Plotting (part 1): We will introduce the plot() function and its properties. We will discuss manipulations such as changing line types, colors, sizes.							
7. Plotting (part 2): We will discuss several other types of plots available in R, such as histograms, dot plots, pie charts, and box plots.							
8. Statistical tests (part 1): R is particularly useful for applying statistical tests on data. In this and the next session, we will introduce commands related to probability distributions, and commands for applying various widely used statistical tests, such as the t-test.							
Continue to ILAS Seminar-E2 :Programming for data analysis (データ解析のためのプログラミング) (2) ↓ ↓							

ILAS Seminar-E2 :Programming for data analysis (データ解析のためのプログラミング) (2)

- 9. Statistical tests (part 2): In this session we will continue on the previous session. We will also cover statistical models for conducting linear and non-linear regression analysis.
- 10. Functions (part 1): So far we have only used pre-defined functions. In these two sessions we will discuss how to write your own functions for manipulating and processing various types of data. In the first session, we will introduce a first simple customized function.
- 11. Functions (part 2): In this second session, we will write more complex functions, and discuss properties of input parameters, how to check input, how to return output, and error handling.
- 12. Libraries and packages, CRAN: Apart from pre-installed functions, there are thousands of libraries and packages publicly available. Here we will discuss how to find such packages in the “Comprehensive R Archive Network” (CRAN), how to install them, find documentation, and use them.
- 13. R Bioconductor: R Bioconductor offers packages and tools specifically for the analysis of biological data. We will introduce Bioconductor, how to find, install and use packages. A few useful packages will be covered.
- 14. Review of course material.
- 15. Final examination
- 16. Feedback

[Class requirement]

None

[Method, Point of view, and Attainment levels of Evaluation]

Grading: attendance and active participation (20%) and assignments (80%). In the assignments, students solve a number of practical problems by programming scripts in the R language.

[Textbook]

Richard Cotton 『Learning R: A Step-by-Step Function Guide to Data Analysis (first edition)』 (O'Reilly Media) ISBN:978-1449357108 (The course lectures will roughly follow the content of this textbook. It will be supplemented with additional material, including an introduction to R available on the CRAN website (<https://cran.r-project.org/manuals.html>)).

[Regarding studies out of class (preparation and review)]

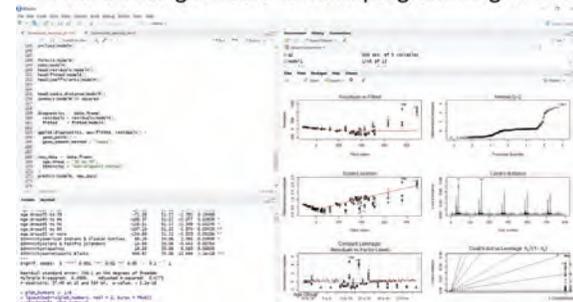
The course will follow a textbook. At the end of each lecture I will specify the sections to read before the next lecture.

[Others (office hour, etc.)]

It is strongly recommended to bring a laptop to the class.

No fixed office hours. Students are requested to make appointments directly or by email.

We will be using RStudio to learn programming in “R”.



Lecture code: Z002056

Course numbering		U-LAS70 10002 SE50				
Course title <English>	ILAS Seminar-E2 :Regional Disaster Prevention (地域防災学)		Affiliated department, Job title,Name	Graduate School of Agriculture Assistant Professor,VILAYVONG, Khonesavanh		
	ILAS Seminar-E2 :Regional Disaster Prevention					
Group	Seminars in Liberal Arts and Sciences		Number of credits	2	Number of weekly time blocks	1
Class style	Seminar	Course offered year/period	2019・First semester		Quota (Freshman)	15 (15)
Target year	Mainly 1st year students	Eligible students	For all majors		Day/period	Thu.5
Classroom	W302, Faculty of Agriculture Main Bldg. (North Campus)				Language	English
Keyword	Agriculture and forestry / Climate change / Disaster prevention / research methodology / Information technology					
[Outline and Purpose of the Course]						
This course introduces basic environmental hazards and disaster prevention methods. The course offers the concepts and knowledge to harness students' ability in understanding hazard mechanisms, conducting basic research studies, applying practices and methods for reducing and preventing hazards and disasters. Useful concepts and tools both theories and applications are covered such as topics of climate change-induced drought and flood, desertification, food security, energy resources, disaster risk assessment, vulnerability, mitigation, preparedness, responses, recovery, resilience, disaster management using update technology such as information communication technology, geographical information system (GIS), and Internet of Things (IOT).						
[Course Goals]						
1. To introduce students with knowledge, concept and terminology on disasters and methods of prevention. 2. To encourage students' technical discussion and presentation on disasters prevention and risk reduction. 3. To facilitate students in applying knowledge and lessons in finding innovation and solution for disasters prevention and risk reduction.						
[Course Schedule and Contents]						
1. Understanding basic science on environmental hazards 2. Importance of agriculture and natural events 3. Understanding hazards - Classification - Types - Characteristics 4. Understanding vulnerability - Political factors - Economical factors - Physical factors - Social factors - Environmental factors 5. Disaster risk identification and assessment - Preparedness - Response - Recovery						
----- Continue to ILAS Seminar-E2 :Regional Disaster Prevention (地域防災学) (2) ↓ ↓ ↓						

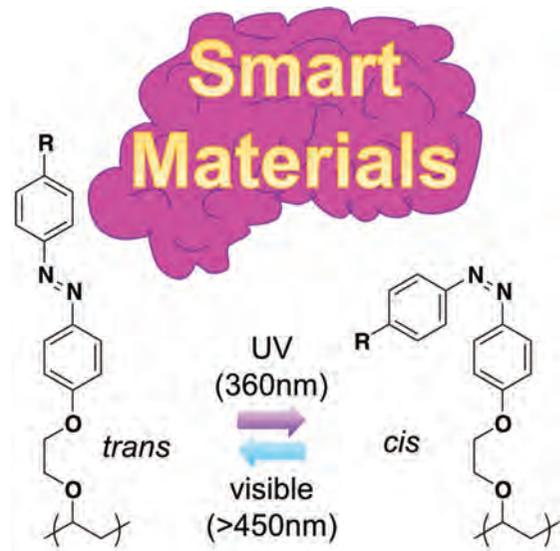
ILAS Seminar-E2 :Regional Disaster Prevention (地域防災学) (2)	

<ul style="list-style-type: none"> - Disaster resilience 6. Student's Presentation (1) 7. Climate change and adaptation 8. Statistical methods for assessing hazard (1) 9. Statistical methods for assessing hazard (2) 10. Research methodology for studies of environmental hazards (1) - Qualitative method 11. Research methodology for studies of environmental hazards (2) - Quantitative method 12. Information Communication Technology (ICT) - Geographic Information System - Internet of Things (IOT) 13. Disaster prevention in Japan 14. Student's Presentation (2) 15. Examination 16. Feedback 	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
<ul style="list-style-type: none"> - Class performance (25%) - Assignment report (25%) - Oral presentation (25%) - Examination (25%) 	
[Textbook]	
Not used Reading materials and handouts will be distributed.	
[Reference book, etc.]	
(Reference book) Damon P. Coppola 『Introduction to International Disaster Management』 (Butterworth-Heinemann)	
[Regarding studies out of class (preparation and review)]	
Students are expected to be independent in finding online resources to attain relevant issues of discussion during seminar to enhance student interaction and understanding during classes.	
[Others (office hour, etc.)]	
After class, student consultation will be arranged with prior notice.	

Lecture code: Z002025

Course numbering		U-LAS70 10002 SE50					
Course title <English>	ILAS Seminar-E2 :Smart Materials (Innovations in Materials Chemistry) (スマートマテリアル-材料化学の革新)		Affiliated department, Job title,Name	Graduate School of Engineering Senior Lecturer,LANDENBERGER, Kira Beth			
	ILAS Seminar-E2 :Smart Materials (Innovations in Materials Chemistry)						
Group	Seminars in Liberal Arts and Sciences		Number of credits	2	Number of weekly time blocks	1	
Class style	Seminar		Course offered year/period	2019・First semester		Quota (Freshman)	15 (15)
Target year	Mainly 1st year students	Eligible students	For all majors		Day/period	Thu.5	
Classroom	35, Yoshida-South Campus Academic Center Bldg. North Wing				Language	English	
Keyword	stimuli responsive / self-healing / shape-memory / drug delivery systems / biomimetic						
[Outline and Purpose of the Course]							
This course is intended to equip students with a basic understanding of what “smart materials” are and how these materials are present both in current research and the world around them. This course also aims to encourage students to be more creative in their own future studies and research. The course will focus on basic stimuli-sensitive materials in the beginning and then on actual systems in the second half of the class.							
[Course Goals]							
This course will provide students with a broad overview and introduction to “smart materials” as present in current research and current applications. The research topics will consider various “smart materials” including stimuli-responsive materials, drug delivery systems, self-healing materials, shape memory materials and various biomimetic systems. Students will be asked to engage in the course material more fully by preparing a semester project as well as completing occasional tasks outside of class throughout the semester.							
[Course Schedule and Contents]							
Introduction to Smart Materials Thermoresponsive Materials Light Responsive Materials Magnetic Materials Piezoelectric Materials Ph and Electrically Responsive Materials Research and Presentations Methods Shape Memory Materials Self-Healing Materials Drug Delivery Systems Biomimetic Materials (2 Seminars) Smart Surfaces (2 Seminars) Final Presentations							

Continue to ILAS Seminar-E2 :Smart Materials (Innovations in Materials Chemistry) (スマートマテリアル-材料化学の革新) (2)

ILAS Seminar-E2 :Smart Materials (Innovations in Materials Chemistry) (スマートマテリアル-材料化学の革新) (2)	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Class attendance and participation (30%), homework (25%) and a semester presentation (45%).	
[Textbook]	
Not used Handouts will be provided as necessary.	
[Reference book, etc.]	
(Reference book) Mel Schwartz 『Smart Materials』 (CRC Press) ISBN:9781420043723 (A useful resource for the course) Xu Hou 『Design, Fabrication, Properties and Applications of Smart and Advanced Materials』 (CRC Press) ISBN:9781498722483 (A useful resource for the course)	
[Regarding studies out of class (preparation and review)]	
Students will be asked to prepare a short oral presentation for the end of the semester. Additionally, to encourage students to engage with the course material throughout the semester, short assignments will occasionally be given.	
[Others (office hour, etc.)]	
	

Lecture code: Z002050

Course numbering		U-LAS70 10002 SE50				
Course title <English>	ILAS Seminar-E2 :The Invisible Universe (不可視の宇宙)		Affiliated department, Job title,Name	Graduate School of Science Senior Lecturer,LEE, Shiu Hang		
	ILAS Seminar-E2 :The Invisible Universe					
Group	Seminars in Liberal Arts and Sciences	Number of credits	2	Number of weekly time blocks	1	
Class style	Seminar	Course offered year/period	2019・First semester	Quota (Freshman)	5 (5)	
Target year	Mainly 1st year students	Eligible students	For all majors	Day/period	Thu.5	
Classroom	416, Faculty of Science Bldg. No.4 (North Campus)			Language	English	
Keyword	宇宙物理学 / 天文学					
[Outline and Purpose of the Course]						
<p>Our Universe is far beyond what our eyes can perceive. Hidden in the tranquil ocean of stars, nebulae and galaxies pictured by optical telescopes and cameras around the world everyday, extreme energetic phenomena that can only be observed through 'invisible lights' (e.g., radio waves, X-rays, gamma-rays) or even messengers other than electromagnetic waves (e.g., cosmic-rays, neutrinos) are happening frequently here and there in the Cosmos. This seminar will bring students into this exciting world of the Invisible Universe.</p> <p>Some projects pursued by past members: 1) Stellar evolution and numerical simulations 2) Gamma-ray emission from supernova remnant and cosmic-ray acceleration 3) Astrophysics of blackholes 4) Planetary nebulae 5) X-ray emission from pulsar wind nebulae 6) Dynamics of spiral galaxies</p>						
[Course Goals]						
1) To obtain basic knowledge and feel the excitement of forefront astronomy and astrophysics beyond optical telescopes. 2) To briefly experience the everyday life of an astrophysicist nowadays through the process of guided independent research, report writing and oral presentation.						
[Course Schedule and Contents]						
<p>In this seminar, besides a few introductory lectures on topics surrounding multi-wavelength astronomy, the students will perform guided but independent research on intriguing astrophysical objects of their choices.</p> <p>This seminar will be in a casual format and conducted mainly in English (with occasional Japanese when necessary). Students are encouraged to ask questions and discuss on topics with their peers and instructor spontaneously at each meeting.</p> <p>Students will present their studies and findings through a written report and an oral talk during a seminar meeting.</p>						
Continue to ILAS Seminar-E2 :The Invisible Universe (不可視の宇宙) (2) ↓ ↓ ↓						

ILAS Seminar-E2 :The Invisible Universe (不可視の宇宙) (2)
Oral presentations will be scheduled flexibly between the instructor and the students in class.
[Class requirement]
None
[Method, Point of view, and Attainment levels of Evaluation]
Final grades will be assessed according to: 1) in-class participation (40%) 2) one written report (30%) 3) one oral presentation (30%)
[Textbook]
Not used
[Reference book, etc.]
(Reference book) Introduced during class
[Regarding studies out of class (preparation and review)]
Independent research. Guidance will be given in a seminar meeting.
[Others (office hour, etc.)]
No fixed office hour will be scheduled. Students can make appointment with the instructor in-person if necessary, or simply contact by Emails.


Lecture code: Z002024

Course numbering		U-LAS70 10002 SE50				
Course title <English>	ILAS Seminar-E2 :Urban Pest Management (都市害虫の管理) ILAS Seminar-E2 :Urban Pest Management	Affiliated department, Job title,Name	Research Institute for Sustainable Humanosphere Senior Lecturer, YANG, Chin-Cheng			
Group	Seminars in Liberal Arts and Sciences	Number of credits	2	Number of weekly time blocks	1	
Class style	Seminar	Course offered year/period	2019・First semester	Quota (Freshman)	5 (5)	
Target year	Mainly 1st year students	Eligible students	For all majors	Day/period	Thu.5	
Classroom	Seminar room 22, ILAS Bldg.			Language	English	
Keyword	Pest management / Nuisance pest / Venomous pest / Medical entomology / Urban ecosystem					
[Outline and Purpose of the Course]						
<p>This is a seminar-based course, consisting different types of activities including lecture, reading/discussion and hands-on. The course is designed to understand the urban environment and pests associated with it. Three major themes will be focused in this lecture:</p> <ol style="list-style-type: none"> 1. Urbanization and urban ecology; 2. Introduction of important urban pests and their impacts 3. How to manage the urban pests <p>This class will start with a standard lecture in the first several weeks, followed by hands-on section in the rest of the semester. The hands-on section will include an examination of pest specimens, field survey for pests at campus, design of a pest trap, and demonstration of various pest control device. Students are highly encouraged to interact with the instructor in class.</p>						
[Course Goals]						
While urbanization has led to comfortable and better life quality, urban environments have created excellent breeding grounds for many pests of human concerns. This course is therefore designed to strengthen students' understanding of these pests (insects, spiders, rodents and stray animals) in the urban settings, as well as how to properly manage them in a smarter way.						
[Course Schedule and Contents]						
In principal, the course will be offered as the following plan. However, the order or time for each theme may change depending on the progressive of the course or handling on current topics. Note that students may have to pay their own transportation fee for the proposed field trips.						
Week 01: Course introduction						
Week 02: Introduction to URBAN ECOLOGY (lecture) -The relationships between urban environment and living organisms						
Week 03: What is pest? Where are them? (lecture) -General introduction of pest and where are them in urban environment						
Week 04: What is pest management? How does it work?? (lecture) -The concept of pest management, and what does it differ from pest control						
Continue to ILAS Seminar-E2 :Urban Pest Management (都市害虫の管理) (2) ↓ ↓ ↓						

ILAS Seminar-E2 :Urban Pest Management (都市害虫の管理) (2)	

Week 05: Cockroach (lecture) -General biology and ecology of cockroach	
Week 06: Cockroach Lab (reading/hands-on) -Design cockroach trap and practice cockroach control	
Week 07: Ant (lecture) -General biology and ecology of ant	
Week 08: Ant Lab 01 (reading/hands-on) -Field test on food preference of ants at Yoshida campus	
Week 09: Ant Lab 02 (reading/hands-on) -Design ant bait and practice ant control	
Week 10: Termite & Lab (lecture/reading/hands-on) -General biology, ecology and management of termite	
Week 11: Fly & mosquito (lecture/reading/hands-on) -General biology, ecology and management of fly and mosquito	
Week 12: Fly & mosquito Lab (lecture/reading/hands-on) -Test mosquito repellent products at Yoshida campus	
Week 13: Field trip to home-center shop -Introduce science behind pest control products	
Week 14: Student presentation	
Week 15: Finals	
Week 16: Feedback	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
40% in-class discussion; 40% term paper; 20% hands-on	
[Textbook]	
WH Robinson 『Urban insects and arachnids: a handbook of urban entomology』 (Cambridge Press, 2005)	
[Reference book, etc.]	
(Reference book) RTT Forman 『Urban ecology-science of cities』 (Cambridge University Press, 2014)	

Continue to ILAS Seminar-E2 :Urban Pest Management (都市害虫の管理) (3) ↓ ↓ ↓	

[Regarding studies out of class (preparation and review)]

Students are encouraged to preview lecture materials ahead of the class each week as class materials will be uploaded to KULASIS and PanDa at least one day in advance.

[Others (office hour, etc.)]

Lecturer: Chin - Cheng Yang (ccyang@rish.kyoto - u.ac.jp)

Office: HW 412, Research Building No. 1, Uji Campus

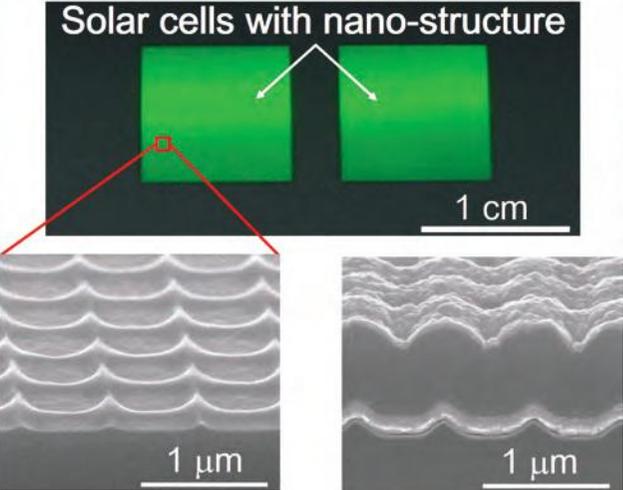
Office hours: to be announced

Note: There is a possibility that the instructor may organize a field trip that normally is a one-day event on the weekend, instead of the regular slot of this lecture. The lecturer will discuss date and time with students for the field trip at the beginning of the semester. Students are advised to pay the travel expense. Also be advised to obtain the insurance for study and research “Personal Accident Insurance for Students Pursuing Ed. & Rsch.(学生教育研究災害傷害保険)” if you decide to take the class.



Lecture code: Z002052

Course numbering		U-LAS70 10002 SE50			
Course title <English>	ILAS Seminar-E2 :Wonders of semiconductor (半導体のふしぎ)		Affiliated department, Job title,Name	Graduate School of Engineering Senior Lecturer,DE ZOYSA, Menaka	
	ILAS Seminar-E2 :Wonders of semiconductor				
Group	Seminars in Liberal Arts and Sciences	Number of credits	2	Number of weekly time blocks	1
Class style	Seminar	Course offered year/period	2019・First semester		Quota (Freshman) 10 (10)
Target year	Mainly 1st year students	Eligible students	For all majors	Day/period	Thu.5
Classroom	34, Yoshida-South Campus Academic Center Bldg. North Wing			Language	English
Keyword	Semiconductor				
[Outline and Purpose of the Course]					
The objective of this seminar is for students to learn about the basics of semiconductors, by investigating semiconductor devices such as solar cells, light emitting diodes (LEDs), laser diodes, transistors etc. Students will be asked for a short presentation about a semiconductor device. To familiarize students with semiconductors, experimental demonstrations will be carried out. In addition, students will be asked to join for laboratory tours, which help to understand the fabrication methods and characterizations of cutting-edge semiconductor devices.					
[Course Goals]					
<ul style="list-style-type: none"> • Understand the semiconductors. • Familiarize with semiconductor devices with the help of experiments. • Learn about the cutting-edge technologies of semiconductor devices. 					
[Course Schedule and Contents]					
<ol style="list-style-type: none"> 1. Overview of the course, introduction to semiconductors (5 weeks) 2. Solar cells: presentation and discussion (1 week) 3. LEDs: presentation and discussion (1 week) 4. Laboratory tour and experimental demonstrations (1 week) 5. Laser diodes: presentation and discussion (1 week) 6. Transistors: presentation and discussion (1 week) 7. Laboratory tour and experimental demonstrations (1 week) 8. Introduction of cutting-edge technologies (3 weeks) 					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
Evaluation will be based on participation (40%), presentation (30%), and discussion (30%).					
Continue to ILAS Seminar-E2 :Wonders of semiconductor (半導体のふしぎ) (2) ↓ ↓ ↓					

ILAS Seminar-E2 :Wonders of semiconductor (半導体のふしぎ) (2)
[Textbook]
Not used
[Reference book, etc.]
(Reference book)
Introduced during class
[Regarding studies out of class (preparation and review)]
The students will be given topics for presentations.
[Others (office hour, etc.)]
Office hour: Anytime by email and appointments should be made via email or during the seminars.


Lecture code: Z002001

Course numbering		U-LAS70 10002 SE50			
Course title <English>	ILAS Seminar-E2 :Contracts and Law in Modern Society (現代社会における契約と法)		Affiliated department, Job title,Name	Graduate School of Law Associate Professor,KARAISKOS, Antonios	
	ILAS Seminar-E2 :Contracts and Law in Modern Society				
Group	Seminars in Liberal Arts and Sciences	Number of credits	2	Number of weekly time blocks	1
Class style	Seminar	Course offered year/period	2019・First semester	Quota (Freshman)	25 (15)
Target year	Mainly 1st year students	Eligible students	For all majors	Day/period	Fri.5
Classroom	33, Yoshida-South Campus Academic Center Bldg. North Wing			Language	English
Keyword	contract law / Japanese law / European law / international transactions / harmonization of laws				
[Outline and Purpose of the Course]					
<p>This is an introductory seminar on Japanese and European contract law. The course is organized into the following three parts:</p> <ol style="list-style-type: none"> 1) Brief overview of the history and development of Japanese and European contract law, 2) Description of Japanese contract law, 3) Presentation of the efforts and steps towards a harmonized European contract law. <p>Along the way, relevant cases decided by Japanese courts and by the Court of Justice of the European Union (CJEU) will also be discussed.</p> <p>The goal of this course is for students to acquire a basic knowledge of the structure and content of Japanese and European contract law, and learn about the similarities and differences between these laws. An additional goal is for students to get familiar with comparative law and its methods.</p> <p>During this course, students will be given the opportunity to actively participate in discussions and exchange of ideas.</p>					
[Course Goals]					
<ul style="list-style-type: none"> - Acquiring a basic knowledge of the structure and content of Japanese and European contract law. - Learning about the similarities and differences between Japanese and European contract law. - Getting familiar with comparative law and its methods. - Improving presentation and communication skills in English. 					
[Course Schedule and Contents]					
<p>1 General introduction</p> <p>Part one: Introduction to contract law</p> <ol style="list-style-type: none"> 2 Characteristics of contract law 3 History and development of Japanese contract law 4 History and development of European contract law <p>Part two: Japanese contract law</p> <ol style="list-style-type: none"> 5 Formation of contracts and manifestation of intention 6 Interpretation and revision of contracts 7 Performance of contracts 					
<small>Continue to ILAS Seminar-E2 :Contracts and Law in Modern Society (現代社会における契約と法) (2) ↓ ↓ ↓</small>					

<small>ILAS Seminar-E2 :Contracts and Law in Modern Society (現代社会における契約と法) (2)</small>	
<p>8 Breach of contract</p> <p>9 Realization of monetary claims</p> <p>Part three: The way towards a European contract law</p> <p>10 CISG</p> <p>11 Consumer Sales Directive</p> <p>12 Principles of European Contract Law (PECL) and Draft Common Frame of Reference (DCFR)</p> <p>13 Supply of Digital Content and Online Sale of Goods</p> <p>14 Online Platforms</p> <p>15 Conclusions</p> <p>Feedback (the method will be explained later)</p>	
[Class requirement]	
Students must be willing to talk in class, engage with other students and write a report paper in English.	
[Method, Point of view, and Attainment levels of Evaluation]	
<p>No written examinations will be conducted.</p> <p>Class attendance and participation: 60%</p> <p>Oral presentation: 15%</p> <p>Submission of report paper: 25%</p>	
[Textbook]	
Instructed during class	
[Reference book, etc.]	
(Reference book)	
Introduced during class	
[Regarding studies out of class (preparation and review)]	
<ul style="list-style-type: none"> - Students are expected to review the content covered in the previous class. - Students are also recommended to briefly preview the content of the next class. More detailed instructions will be provided in class. 	
[Others (office hour, etc.)]	
<p>Students will be required to actively participate and express their thoughts in English during the classes. Further, students will be assigned one oral presentation (of around 10 minutes, individual or in group, depending on the number of students) in part two or three. A paper of the presentation (around 2 pages sized A4/around 800 words) shall be submitted at the end of the course.</p>	

Lecture code: Z002027

Course numbering		U-LAS70 10002 SE50					
Course title <English>	ILAS Seminar-E2 :Introduction to life science and scientific conversation (生命科学へのいざない)		Affiliated department, Job title,Name	Graduate School of Medicine Assistant Professor,Erik WALINDA			
	ILAS Seminar-E2 Introduction to life science and scientific conversation						
Group	Seminars in Liberal Arts and Sciences		Number of credits	2	Number of weekly time blocks	1	
Class style	Seminar		Course offered year/period	2019・First semester		Quota (Freshman)	8 (8)
Target year	Mainly 1st year students	Eligible students	For all majors		Day/period	Fri.5	
Classroom	21, Yoshida-South Campus Bldg. No. 1				Language	English	
Keyword	Life / Biophysics / Chemistry / Structure / Biology						
[Outline and Purpose of the Course]							
This is an introductory course to life science and biochemistry.							
It is a tutorial. That means, that after a short introduction by the instructor, students will study and then discuss the material. The material will be provided by the instructor; it is not necessary to buy any books for this class.							
Discussions are in English and the instructor will provide additional explanations.							
3D means the three dimensions of space: we will look at images of proteins and nucleic acids to understand them. 4D means space and time: we will also study the motion of the biomolecules.							
[Course Goals]							
The goal of the course is to give first year students a chance to study the basics of life science in English in an interactive way.							
[Course Schedule and Contents]							
1. Course Introduction: Studying life 2. Atoms 3. Macromolecules 4. Structural levels in proteins 5. Life in 3D 6. Carbohydrates 7. Lipids 8. Nucleic Acids 9. Vitamins 10. Cells 11. Organelles I 12. Organelles II 13. Organelles III 14. Cytoskeleton 15. Evaluation							
<small>Continue to ILAS Seminar-E2 :Introduction to life science and scientific conversation (生命科学へのいざない) (2)</small>							

<small>ILAS Seminar-E2 :Introduction to life science and scientific conversation (生命科学へのいざない) (2)</small>	
16. Feedback	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Attendance and Active participation [60%] Assignments (Presentation) [40%]	
[Textbook]	
Not used	
[Reference book, etc.]	
(Reference book) David Sadava 『Life: the science of biology』	
[Regarding studies out of class (preparation and review)]	
* Reading of scientific texts in English. * Preparation of presentations.	
[Others (office hour, etc.)]	
Office hour: any time.	

Lecture code: Z002069

Course numbering		U-LAS70 10002 SE50					
Course title <English>	ILAS Seminar-E2 :Let's create 3D computer animations (三次元アニメーションを作ってみよう)		Affiliated department, Job title,Name	Graduate School of Medicine Associate Professor,PATAKY, Todd			
	ILAS Seminar-E2 :Let's create 3D computer animations						
Group	Seminars in Liberal Arts and Sciences		Number of credits	2	Number of weekly time blocks	1	
Class style	Seminar		Course offered year/period	2019・First semester		Quota (Freshman)	6 (6)
Target year	Mainly 1st year students	Eligible students	For all majors		Day/period	Fri.5	
Classroom	Seminar room 2, 2F, School of Human Health Sciences, Faculty of Medicine (Faculty of Medicine/Pharmaceutical Science Campus/University Hospital Campus)			Language	English		
Keyword	3D modeling / computer graphics / character animation						
[Outline and Purpose of the Course]							
This course introduces the basics of computer-based 3D modeling (shape design, lighting, materials, surface textures), animation (keyframes, object motion, camera zooming and panning, etc.) and gaming (interactive 3D worlds). The free, open-source software “Blender” (blender.org) will be used for all lessons; Blender can be used on Windows, Mac and Linux for free. Programming experience is recommended but not required.							
[Course Goals]							
Students will become familiar with the main concepts of 3D modeling and animation. They will learn how to reproduce example 3D models, animations and simple games. Last, as a final project they will work to produce their own 3D model / animation / game from start-to-finish.							
[Course Schedule and Contents]							
Over this 14-week lecture the following topics will be covered in each class:							
01) Introduction: 3D Modeling & Blender							
02) 3D Modeling I: Creating Shapes							
03) 3D Modeling II: Materials & Lighting							
04) Animation I: Basics							
05) Animation II: Advanced							
06) Game Design I: Basics							
07) Game Design II: Game Flow							
08) Character Modeling I: Body							
09) Character Modeling II: Rigging							
10) Advanced Topics: Modeling							
11) Advanced Topics: Animation							
12) Advanced Topics: Gaming							
13) Advanced Topics: Characters							
14) Final Project Presentations & Discussion							
Continue to ILAS Seminar-E2 :Let's create 3D computer animations (三次元アニメーションを作ってみよう) (2) ↓ ↓							

ILAS Seminar-E2 :Let's create 3D computer animations (三次元アニメーションを作ってみよう) (2)	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Students are expected to actively participate in class, to reproduce all examples discussed in class, and also to produce 3D models independently. Evaluation will be based on the following criteria: class participation (20%), assignments (60%), final project (20%).	
[Textbook]	
None. A number of useful books and internet resources will be discussed for student self-learning.	
[Reference book, etc.]	
(Reference book)	
Oliver Villar 『Learning Blender: A Hands-On Guide to Creating 3D Animated Characters』 (Addison-Wesley Professional) ISBN:978-0134663463 (This lecture will loosely follow this textbook. This textbook is OPTIONAL, but may be useful for reviewing concepts, and for self-study of advanced topics.)	
(Related URL)	
www.blender.org(Blender: open-source 3D modeling software.)	
[Regarding studies out of class (preparation and review)]	
There will be a small assignment each week based on lecture content; students should submit these assignments more than one day before the next lecture. Additionally there will be a final project that students are expected to complete outside of class.	
[Others (office hour, etc.)]	

Lecture code: Z002021

Course numbering		U-LAS70 10002 SE50					
Course title <English>	ILAS Seminar-E2 :Logic, critical thinking and argument (自然科学・工学に関する論理的・批判的思考法と議論)		Affiliated department, Job title,Name	Graduate School of Energy Science Associate Professor,MCLELLAN, Benjamin			
	ILAS Seminar-E2 :Logic, critical thinking and argument (Natural Sciences and Engineering)						
Group	Seminars in Liberal Arts and Sciences		Number of credits	2	Number of weekly time blocks	1	
Class style	Seminar		Course offered year/period	2019・First semester		Quota (Freshman)	7 (7)
Target year	Mainly 1st year students	Eligible students	For all majors		Day/period	Fri.5	
Classroom	35, Yoshida-South Campus Academic Center Bldg. North Wing			Language	English		
Keyword	logic / critical thinking / media / science / argumentation						
[Outline and Purpose of the Course]							
Science is not restricted to the academic world - it flows-over into the mass media (both factual and fictional). Logic is vital to the presentation of academic research findings and also to analysing the communication of science in the media.							
The aim of this course is for students to learn and practice critical thinking with respect to science and its broader reporting in the mass media.							
The students will participate in extracting themes, understanding bias in documents, videos and in their own work. They will practice how to critically analyse documents and to develop their own writing skills, particularly in the area of justification of arguments and the logical structuring and linking of content.							
[Course Goals]							
The goal of the course is for students to be able to present logical written arguments and to be able to critically assess the validity and structure of literature in the natural sciences. This will be based on a variety of scientific literature in the academic realm as well as in the media.							
[Course Schedule and Contents]							
The course will broadly cover critical thinking, including the following themes:							
<ol style="list-style-type: none"> 1. Introduction to critical thinking: what, why and how 2. Proof, argument and opinion (2 weeks) 3. Logic and illogicality 4. Making the most of information (but not too much) (2 weeks) 5. Academic argument in natural science writing (2 weeks) 6. Assumptions, reliability and uncommon sense 7. Structuring and clarity in writing 8. Comprehension, comprehensiveness and conciseness 9. Science in the media (3 weeks) 							
The course is very flexible, depending on the students ability and topics of societal and scientific interest at							
<small>Continue to ILAS Seminar-E2 :Logic, critical thinking and argument (自然科学・工学に関する論理的・批判的思考法と議論) (2)</small>							

<small>ILAS Seminar-E2 :Logic, critical thinking and argument (自然科学・工学に関する論理的・批判的思考法と議論) (2)</small>						
the time, so exact topics will vary.						
The course will be interactive, involving students in discussions on topical issues.						
[Class requirement]						
None						
[Method, Point of view, and Attainment levels of Evaluation]						
Participation in class exercises and take-home exercises (50%) = 50%						
Final take-home exam or report (50%)						
Students will be marked on the ability to identify and critically analyse text, and to produce text of their own.						
Standard marking framework is used with a raw score given (0-100)						
[Textbook]						
[Reference book, etc.]						
(Reference book)						
Judith Boss 『THiNK (2nd Edition)』 (2011.)						
Merrilee H. Salmon 『Introduction to Logic and Critical Thinking (6th Edition)』						
[Regarding studies out of class (preparation and review)]						
Out of class preparation for in-class exercises may be required.						
[Others (office hour, etc.)]						
For this class, office hours are Monday and Wednesday 13:00-14:00 but prior email contact is required.						
<small>Continue to ILAS Seminar-E2 :Logic, critical thinking and argument (自然科学・工学に関する論理的・批判的思考法と議論) (2)</small>						

Lecture code: Z002060

Course numbering		U-LAS70 10002 SE50			
Course title <English>	ILAS Seminar-E2 :Introduction to anthropological thinking (人類学的アプローチ概論)		Affiliated department, Job title,Name	Disaster Prevention Research Institute Senior Lecturer,LAHOURNAT, Florence	
	ILAS Seminar-E2 :Introduction to anthropological thinking				
Group	Seminars in Liberal Arts and Sciences	Number of credits	2	Hours	30
Class style	Seminar	Course offered year/period	2019・Intensive, First semester	Quota (Freshman)	7 (7)
Target year	Mainly 1st year students	Eligible students	For all majors	Day/period	Intensive
Classroom	Yoshida-South Campus			Language	English
Keyword	social anthropology / cultural anthropology / culture / society				
[Outline and Purpose of the Course]					
<p>This seminar is designed as an interactive introduction to socio-cultural anthropology and anthropological thinking.</p> <p>The purpose of the course is to explore how culture shapes society, what an anthropological perspective is, and how it can contribute to our understanding of the world.</p> <p>We will explore some of the core themes of the discipline using a variety of readings and in-class discussion.</p>					
[Course Goals]					
<p>The objectives of this seminar are for students to:</p> <ul style="list-style-type: none"> - gain an understanding of the different aspects and implications of culture in shaping society and our interpretation of the world, - gain an understanding of some of its core themes - develop awareness of cultural diversity and our own preconceptions - gain experience in engaging in discussions on specific topics 					
[Course Schedule and Contents]					
<p>This is a seminar-type class.</p> <p>Each session will focus on discussion and various activities (including group work) surrounding a specific topic.</p> <p>The topics we explore will include:</p> <ul style="list-style-type: none"> - Culture (as an introduction and entry point to the other topics) - Time and space - Language and communication - Identity and relationships - Material culture <p>Note: this schedule may be subject to change. The detailed definitive schedule will be handed out during the first class.</p>					
[Class requirement]					
<p>This seminar is essentially interactive.</p> <p><u>Students must be willing to prepare each session by completing the readings and assigned tasks, and to</u></p>					

Continue to ILAS Seminar-E2: Introduction to anthropological thinking (人類学的アプローチ概論) (2) ↓ ↓ ↓

<small>ILAS Seminar-E2: Introduction to anthropological thinking (人類学的アプローチ概論) (2)</small>	
participate actively in class, answering questions and participating in discussions and other activities.	
[Method, Point of view, and Attainment levels of Evaluation]	
Evaluation will be based on active participation (70%), and group work (30%).	
Active participation means actively engaging with the class content, participating during discussions and group work, and contributing to the class by sharing opinions, experiences and reflections.	
Repeated absence and tardiness will negatively impact the final grade.	
[Textbook]	
There is no textbook for this seminar. Readings will be available for download. Printing and preparing the material is the responsibility of the student.	
[Reference book, etc.]	
(Reference book) Introduced during class	
[Regarding studies out of class (preparation and review)]	
Students should expect 2 to 3 hours of preparation outside the classroom to complete the readings and assigned tasks.	
[Others (office hour, etc.)]	
<ul style="list-style-type: none"> - This is a seminar-type class, and as such will rely heavily on in-class discussion and student participation. It will be conducted in English. All readings and material will also be in English. - As stated in the evaluation section, students are expected to engage actively during class. The level of engagement will greatly influence the final grade. - Office hour is after class or by appointment. 	

Lecture code: Z002061

Course numbering		U-LAS70 10002 SE50			
Course title <English>	ILAS Seminar-E2 :Introduction to cross-cultural communication (異文化コミュニケーション入門)		Affiliated department, Job title,Name	Disaster Prevention Research Institute Senior Lecturer,LAHOURNAT, Florence	
	ILAS Seminar-E2 :Introduction to cross-cultural communication				
Group	Seminars in Liberal Arts and Sciences	Number of credits	2	Hours	30
Class style	Seminar	Course offered year/period	2019・Intensive, First semester	Quota (Freshman)	10 (10)
Target year	Mainly 1st year students	Eligible students	For all majors	Day/period	Intensive
Classroom	Yoshida-South Campus			Language	English
Keyword	cross-cultural communication / culture / cultural competence				
[Outline and Purpose of the Course]					
<p>This seminar is designed as an introduction to cross-cultural communication and aims at providing a working level of cross-cultural competence.</p> <p>With an emphasis on approaching and understanding other cultures and communication without bias, it will cover basic concepts and principles necessary for the promoting and improving of cultural self-awareness and inter-group, cross-cultural communication.</p> <p>With the basic question of what culture is as a starting point, we will explore the mechanisms of culture and inter-group relationships and their implications in our perceptions of ourselves and others along the following themes: cultural awareness, cultural identity, ethnocentrism and cultural relativism, stereotype and prejudice, cultural competence.</p>					
[Course Goals]					
<p>The objectives of this seminar are for students to:</p> <ul style="list-style-type: none"> - gain an understanding and good command of the basic notions related to culture and cross-cultural communication - acquire awareness and understanding of cultural processes (including our own preconceptions), the dynamic aspect of cross-cultural adaptation, and the impact of culture on communication - become comfortable formulating ideas and opinions, and engaging in discussions on specific topics. 					
[Course Schedule and Contents]					
<p>This is a seminar-type class. Each session will start with a short lecture and rely mostly on discussion and group work based on this week's topic and readings.</p> <ol style="list-style-type: none"> 1- orientation and overview 2- introduction to the notion of culture 3- Social and cultural identities 4- Culture and worldviews 5- Bias, stereotype, prejudices 6- Models of culture (P.1) 7- Models of culture (P. 2) 8- Group work/presentation 9- Languages and culture 					
<small>Continue to ILAS Seminar-E2 :Introduction to cross-cultural communication (異文化コミュニケーション入門) (Q) ↓ ↓ ↓</small>					

<small>ILAS Seminar-E2 :Introduction to cross-cultural communication (異文化コミュニケーション入門) (Q)</small>	
<p>10- Nonverbal communication 11- Culture shock 12- Towards cultural competence (P.1) 13- Towards cultural competence (P.2) 14- Final presentations</p>	
<p>Note: this schedule may be subject to change. The detailed definitive schedule will be handed out during the first class.</p>	
[Class requirement]	
<p>There are no specific requirements for taking this seminar. However, students must be willing to prepare each session by completing the weekly readings and assigned tasks, and to participate actively in class.</p>	
[Method, Point of view, and Attainment levels of Evaluation]	
<p>Evaluation will be based on class attendance and active participation (60%), a group work (20%) and final presentation (20%).</p> <p>Active participation means actively listening and engaging with the class content, participating during discussions and group work, and contributing to the class by sharing opinions, experiences and reflections. It also means taking notes and reviewing them each week, since each class will start with a quick recap of the previous week done by a student.</p> <p>Students absent 3 times or more will fail this class.</p> <p>Tardiness (by 15 minutes or more) will be treated as absence.</p> <p>Systematic tardiness and/or unexplained early departures will greatly reduce your attendance and participation grade.</p>	
[Textbook]	
<p>There is no textbook for this seminar.</p> <p>Weekly readings will be available for download.</p> <p>Printing and preparing the material is the responsibility of the student.</p>	
[Reference book, etc.]	
<p>(Reference book)</p> <p>Introduced during class</p>	
[Regarding studies out of class (preparation and review)]	
<p>Students are expected to prepare for each class by reviewing their notes and completing the weekly readings and assigned tasks.</p>	
[Others (office hour, etc.)]	
<ul style="list-style-type: none"> - This is a seminar-type class, and as such will rely heavily on in-class discussion and student participation. It will be conducted in English. All readings and material will also be in English. - As stated in the evaluation section, students are expected to engage actively during class. The level of engagement will greatly influence the final grade. - Office hour is after class or by appointment. 	

Lecture code: Z002029

Course numbering		U-LAS70 10002 SE50			
Course title <English>	ILAS Seminar-E2 :Consumer Society and Law (消費生活と法)		Affiliated department, Job title,Name	Graduate School of Law Associate Professor,KARAISKOS, Antonios	
	ILAS Seminar-E2 :Consumer Society and Law				
Group	Seminars in Liberal Arts and Sciences		Number of credits	2	Number of weekly time blocks
					1
Class style	Seminar		Course offered year/period	2019・Second semester	
			Quota (Freshman)	15 (15)	
Target year	Mainly 1st year students	Eligible students	For all majors		Day/period
					Mon.5
Classroom	Seminar room 22, ILAS Bldg.			Language	English
Keyword	consumer law / Japanese law / European law / international transactions / harmonization of laws				
[Outline and Purpose of the Course]					
<p>This is an introductory seminar on Japanese and European consumer law. The course is organized into the following three parts:</p> <ol style="list-style-type: none"> 1) Brief overview of the history and development of Japanese and European consumer law, 2) Description of Japanese consumer law, 3) Presentation of the current state of European consumer law. <p>Along the way, relevant cases decided by Japanese courts and by the Court of Justice of the European Union will also be discussed.</p> <p>The goal of this course is for students to acquire a basic knowledge of the structure and content of Japanese and European consumer law, and learn about the similarities and differences between these laws. An additional goal is for students to get familiar with comparative law and its methods.</p> <p>During this course, students will be given the opportunity to actively participate in discussions and exchange of ideas.</p>					
[Course Goals]					
<ul style="list-style-type: none"> - Acquiring a basic knowledge of the structure and content of Japanese and European consumer law. - Learning about the similarities and differences between Japanese and European consumer law. - Getting familiar with comparative law and its methods. - Improving presentation and communication skills in English. 					
[Course Schedule and Contents]					
1 General introduction					
Part one: Introduction to consumer law					
2 Characteristics of consumer law					
3 History and development of Japanese consumer law					
4 History and development of European consumer law					
Part two: Consumer protection in Japan					
5 Product liability					
6 Consumer contracts					
7 Specified commercial transactions					
8 Money lending and interest rate restriction					
Continue to ILAS Seminar-E2 :Consumer Society and Law (消費生活と法) (2) ↓ ↓ ↓					

ILAS Seminar-E2 :Consumer Society and Law (消費生活と法) (2)	
9 Consumer protection authorities and organizations	
Part three: Consumer protection in the EU	
10 Liability for defective products	
11 Unfair terms in consumer contracts	
12 Unfair commercial practices	
13 The Consumer Rights Directive	
14 New Deal for Consumers	
15 Conclusions	
Feedback (the method will be explained later)	
[Class requirement]	
Students must be willing to talk in class, engage with other students and write a report paper in English.	
[Method, Point of view, and Attainment levels of Evaluation]	
No written examinations will be conducted.	
Class attendance and participation: 60%	
Oral presentation: 15%	
Submission of report paper: 25%	
[Textbook]	
Instructed during class	
[Reference book, etc.]	
(Reference book)	
Introduced during class	
[Regarding studies out of class (preparation and review)]	
- Students are expected to review the content covered in the previous class.	
- Students are also recommended to briefly preview the content of the next class. More detailed instructions will be provided in class.	
[Others (office hour, etc.)]	
Students will be required to actively participate and express their thoughts in English during the classes. Further, students will be assigned one oral presentation (of around 10 minutes, individual or in group, depending on the number of students) in part two or three.	
A paper of the presentation (around 2 pages sized A4 / around 800 words) shall be submitted at the end of the course.	

Lecture code: Z002049

Course numbering		U-LAS70 10002 SE50			
Course title <English>	ILAS Seminar-E2 :Discussions in Biomechanics and Biophysics (バイオメカニクス・生物物理セミナー)		Affiliated department, Job title,Name	Institute for Frontier Life and Medical Sciences Senior Lecturer,OKEYO, Kennedy Omondi	
	ILAS Seminar-E2 :Discussions in Biomechanics and Biophysics				
Group	Seminars in Liberal Arts and Sciences	Number of credits	2	Number of weekly time blocks	1
Class style	Seminar	Course offered year/period	2019・Second semester	Quota (Freshman)	10 (10)
Target year	Mainly 1st year students	Eligible students	For all majors	Day/period	Mon.5
Classroom	21, Yoshida-South Campus Bldg. No. 1			Language	English
Keyword	Biology / Physics / Biomedical / Engineering				
[Outline and Purpose of the Course]					
Many exciting or rather puzzling phenomena exist in nature that can only be explained by integrating knowledge from different disciplines; biology, physics, and chemistry. For example, why do astronauts become weak such that they are unable to walk after prolonged stay in space? Or, how do plants utilize photons of light to make sugar? Again, why are migratory birds able to sense their migration direction over long distances? These are just but a few examples highlighting how living systems on earth have adapted to life on earth, where they are exposed to physical forces such as gravity and electromagnetic forces. In this seminar, we will discuss some of the ground breaking discoveries and technological advances integrating biology, physics, and chemistry. Specifically, we will explore how living systems, including the human body, have adapted to and utilize physical forces to survive and function normally, and sometimes, abnormally.					
[Course Goals]					
The ultimate goal will be to foster understanding of interconnectivity among different disciplines of natural sciences, and to nurture the ability of students to formulate a multidisciplinary-based approach to knowledge acquisition, integration and usage toward practical problems in science, medicine and engineering.					
[Course Schedule and Contents]					
Discussions in this seminar will be based on, but not limited to, the following broad topics. Students will be free to suggest a topic of interest and, if accepted by everyone, the topic will be included in the discussions.					
1) Introduction to interconnectivity between physics and biology (3 weeks) From migratory birds in the sky to plant leaves reacting to touch stimuli, what makes living systems (including ourselves) so unique is that they are able to feel and react to physical forces in the environment. This topic will explore force sensing and response by different kinds of living systems, including the cells in our body.					
2) Integrating physics with biology (3 weeks) Ground-breaking discoveries in physics (x-ray, lasers etc.) have revolutionized our understanding of biology, and brought significant advances in medicine and engineering fields. Taking concrete examples, we will take a look at some exciting discoveries in physics that have impacted biology and medicine.					
3) Life in a mechanical environment (3 weeks)					

Continue to ILAS Seminar-E2 :Discussions in Biomechanics and Biophysics (バイオメカニクス・生物物理セミナー) (2)

ILAS Seminar-E2 :Discussions in Biomechanics and Biophysics (バイオメカニクス・生物物理セミナー) (2)	
Our body is a force producing machine; our muscles contract, our hearts beat, our lungs expand and shrink, blood flow through our veins and arteries etc. This topic will explore what we know about how our body adapt and respond to forces at the cellular level, and how this is important to biology and medicine.	
4) Role of forces in bone and muscle health (3 weeks) Why do astronauts lose their ability to walk after staying in space for an extended period of time? Continuing the theme of the previous topic, this topic will look specifically into the role of physical forces in bones and muscles, including why lack of physical exercise or prolonged exposure to microgravity condition contribute to the weakening of muscles and bones.	
5) Role of forces in wound healing and disease development (2 weeks) This topic will introduce latest pioneering researches on the role of physical forces in wound healing and disease development, and how physical forces can be exploited to realize better treatment methods and improve quality of life.	
6) Lecture review and student presentations (2 week)	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Class attendance and active participation: 60%, Discussions and presentations: 40%	
[Textbook]	
Not used	
[Reference book, etc.]	
(Reference book) Rob Phillips , Jané Kondev and Julie Theriot 『Physical Biology of the Cell 2 Edition』 (Garland Science) ISBN:9780815344506 (OKEYO, Kennedy Omondi, MIYOSHI, Hiromi, ADACHI, Taiji, "Innovative Approaches to Cell Biomechanics-From Cell Migration to On-Chip Manipulation", Springer, ISBN 978-4-431-55163-8)	
[Regarding studies out of class (preparation and review)]	
You may consider listening to TED talks to learn about some exciting science topics and how to give a nice presentation.	
[Others (office hour, etc.)]	
Office hours will be announced separately during class hours. However, you are free to contact me by email anytime.	

Lecture code: Z002036

Course numbering		U-LAS70 10002 SE50					
Course title <English>	ILAS Seminar-E2 :Introduction to Bird Study - Ornithology (鳥類研究のすすめ)		Affiliated department, Job title,Name	Graduate School of Science Associate Professor,BARNETT, Craig Antony			
	ILAS Seminar-E2 :Introduction to Bird Study - Ornithology						
Group	Seminars in Liberal Arts and Sciences		Number of credits	2	Number of weekly time blocks	1	
Class style	Seminar		Course offered year/period	2019・Second semester		Quota (Freshman)	15 (15)
Target year	Mainly 1st year students	Eligible students	For all majors		Day/period	Mon.5	
Classroom	22, Yoshida-South Campus Bldg. No. 1				Language	English	
Keyword	鳥類 / 行動 / 生態 / 進化						
[Outline and Purpose of the Course]							
Birds fascinate people because they are everywhere, they are easy to see and hear, and they are beautiful. In this course we will examine birds by considering their defining characteristics, form and function, behaviour, life histories, ecology, and conservation. In doing so, the aim is gain a thorough understanding of this diverse and interesting group of animals.							
[Course Goals]							
1) Learn the evolutionary history of modern birds and their evolutionary relationships to other groups 2) Learn the characteristics of birds and the characteristics of the major avian groups 3) Learn the unique life history and behavioral traits of birds 4) Learn some aspects of avian ecology and conservation 5) Learning to identify different species of forest and aquatic birds around Kyoto							
[Course Schedule and Contents]							
1) Course introduction 2) What are birds and are they feathered dinosaurs? 3) Feathers and flight exercise (video 1) 4) Museum visit and exercise 5) Avian communication exercise (video 2) 6) The annual cycle of birds and their migration exercise (video 3) 7) Avian movement 8) Birds in and around Kyoto University 9) Finding a mate and breeding systems exercise (video 4) 10) Avian reproduction 11) A trip to Takarageike Park to identify aquatic birds 12) Avian intelligence and video exercise (video 5) 13) What to eat. Foraging behavior of birds 14) Avian ecology and bird conservation							
Continue to ILAS Seminar-E2 :Introduction to Bird Study - Ornithology (鳥類研究のすすめ) (2) ↓ ↓ ↓							

ILAS Seminar-E2 :Introduction to Bird Study - Ornithology (鳥類研究のすすめ) (2)	
[Class requirement]	
Understanding of high school biology is recommended.	
[Method, Point of view, and Attainment levels of Evaluation]	
Assessment will comprise completion of written in-class activities (70%) and a final presentation (30%).	
[Textbook]	
Not used No textbook is mandatory although we consult various readings throughout the course.	
[Reference book, etc.]	
(Reference book) D. Attenborough 『The Life of Birds: The Complete Series.』 (BBC) F. B. Gill 『Ornithology 3rd Edition.』 (W.H Freeman and Company) Scott, G 『Essential Ornithology.』 (Oxford University Press)	
[Regarding studies out of class (preparation and review)]	
To achieve the course goals students should review the course materials plus optionally the recommended readings after each class.	
[Others (office hour, etc.)]	
	
A Blythe's Leaf Warbler being assayed for aggressiveness	

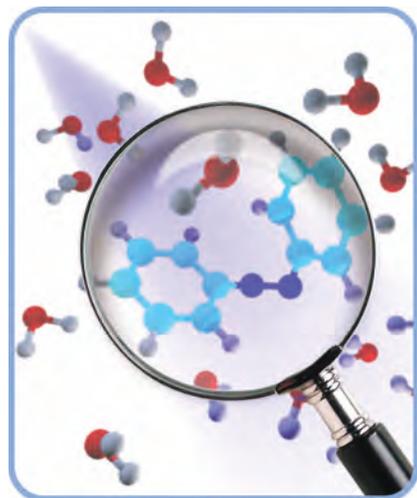
Lecture code: Z002013

Course numbering		U-LAS70 10002 SE50					
Course title <English>	ILAS Seminar-E2 :How to Study Atoms and Molecules with the Help of Light (光を使って原子や分子を調べる)		Affiliated department, Job title,Name	Graduate School of Science Program-Specific Associate Professor,THUERMER, Stephan			
	ILAS Seminar-E2 :How to Study Atoms and Molecules with the Help of Light						
Group	Seminars in Liberal Arts and Sciences		Number of credits	2	Number of weekly time blocks	1	
Class style	Seminar		Course offered year/period	2019・Second semester		Quota (Freshman)	25 (15)
Target year	Mainly 1st year students	Eligible students	For all majors		Day/period	Tue.5	
Classroom	Seminar room 21, ILAS Bldg.				Language	English	
Keyword	Light / Colors / Laser / Molecule / Spectroscopy						
[Outline and Purpose of the Course]							
<p>Light lets you see and get to know the world around you. But we can only see a very small part of all the ‘light’ and it is impossible to see atoms and even big molecules with your eyes. In this seminar we will learn how different forms of light are used in physics and chemistry to ‘see’ the atoms, molecules, distant stars and the world around us. We will learn the fundamentals of light, get to understand light phenomena in your daily life and see how light can be used as a measurement tool in natural sciences. Students with any major are welcome.</p> <p>可視光は私達の視覚に不可欠ですが、光あるいは電磁波は様々な波長やエネルギーを持ちます。電磁波は、原子や分子の構造や性質を調べる上で、最も強力な手段であり、分光学と呼ばれる手法は物理、化学、生物、工学のあらゆる分野で必要です。このセミナーでは、光の基礎的な性質から原子や分子を調べる方法までの基礎を、英語で学んでいきます。</p>							
[Course Goals]							
<p>Students will gain the following from this seminar:</p> <ul style="list-style-type: none"> - Interest and fun to learn more about phenomena in nature and study topics on their own. - Knowledge about light as a measurement tool in chemistry, (astro-)physics and biology. - The ability to understand difficult theoretical and ‘invisible’ phenomena in an intuitive way. - The ability to express their ideas, discuss and present topics of natural sciences in English. <p>光の性質、光の吸収や散乱を利用した原子や分子の研究方法を学びながら、英語で科学を学習したり議論するスキルを身につける。</p>							
[Course Schedule and Contents]							
<p>This seminar is held in a causal and interactive way! Students can influence the selection of topics based on their interest!</p> <p>The course will work though fundamentals of light, the interaction of light with materials, and methods of spectroscopy, which include the following topics. The plan below is not strict and rather serves as a guideline.</p> <p>1. Introduction - What is light and how to use it? (4 weeks) We will learn about ‘light’, its fundamentals and properties such as ‘color’ and how we can make use</p>							
<small>Continue to LAS Seminar-E2 :How to Study Atoms and Molecules with the Help of Light (光を使って原子や分子を調べる) (2)</small>							

<small>ILAS Seminar-E2 :How to Study Atoms and Molecules with the Help of Light (光を使って原子や分子を調べる) (2)</small>						
<p>of light as a measurement tool.</p> <p>2. Apples are red and water is blue? (3 weeks) We get to know light’s behavior when interacting with different materials. We learn about the ‘spectrum’ and the basics of spectroscopy. This knowledge answers questions like ‘why do things have color?’ or ‘what can we learn about distant stars?’</p> <p>3. Laser beams and rainbows (4 weeks) We see how light is generated in light bulbs, lasers and other light sources. This light then can be selected, modified and redirected with the help of various spectroscopic tools. The same knowledge helps us to understand light phenomena in daily life such as rainbows, anti-reflective glasses or mirrors.</p> <p>4. Dancing molecules (3 weeks) We learn how light interacts with atoms and molecules (and induces molecular vibration and rotation in the process), and what this tells us about the shape and properties of molecules. This knowledge is a first look into chemical analysis and studying fundamental physics questions.</p> <p>Depending on the available time and interest of the students, we may also discuss the use of light in technical applications and astronomy as well as spectroscopic methods in physics and chemistry or the operation principles of advanced spectroscopic devices.</p>						
[Class requirement]						
None						
[Method, Point of view, and Attainment levels of Evaluation]						
<p>Preparing homework (30%) Small exercises during the seminar (30%) Giving a short presentation at the end of the seminar (40%)</p>						
[Textbook]						
<p>Not used No textbook is used. Lecture notes will be provided during class.</p>						
[Reference book, etc.]						
<p>(Reference book) Simon Duckett, Bruce Gilbert, Martin Cockett 『Foundations of Molecular Structure Determination』 (Oxford University Press) ISBN:9780199689446 (This compact book gives a good overview over all relevant spectroscopic methods to study molecules) J. Michael Hollas 『Modern Spectroscopy』 (Wiley) ISBN:9780470844168 (A more in-depth book about spectroscopy in general) Ian A. Walmsley 『Light: A Very Short Introduction』 (Oxford University Press) ISBN:9780199682690 (A good read about light, which is the basis of most spectroscopies)</p>						
[Regarding studies out of class (preparation and review)]						
<p>Students are expected to review the lecture handouts after each class and look up unknown English terms themselves. Homework assignments need to be prepared before the next lecture. It is also encouraged to refer to additional sources of information (books, websites) for the specific topics. If something is unclear or difficult, the instructor can be asked at any time.</p>						
<small>Continue to LAS Seminar-E2 :How to Study Atoms and Molecules with the Help of Light (光を使って原子や分子を調べる) (3) 1 </small>						

[Others (office hour, etc.)]

The lectures will be held in English, but some supporting material and explanations are also given in Japanese. Students are welcome to ask questions in English or Japanese during and after the class. Office hours are flexible. Appointments can be made directly or via email.



Lecture code: Z002074

Course numbering		U-LAS70 10002 SE50					
Course title <English>	ILAS Seminar-E2 :Radical Art and Politics in Japan 1960-70 (1960年から70年の日本における前衛芸術と政治)		Affiliated department, Job title,Name	Graduate School of Engineering Professor,DANIELL, Thomas Charles			
	ILAS Seminar-E2 :Radical Art and Politics in Japan 1960-70						
Group	Seminars in Liberal Arts and Sciences		Number of credits	2	Number of weekly time blocks	1	
Class style	Seminar		Course offered year/period	2019・Second semester		Quota (Freshman)	5 (5)
Target year	Mainly 1st year students	Eligible students	For all majors		Day/period	Tue.5	
Classroom	3D, Yoshida-South Campus Academic Center Bldg. North Wing				Language	English	
Keyword	art / politics						
[Outline and Purpose of the Course]							
This seminar will look at the convergence of radical art and radical politics in 1960s Japan, from the Anpo protests in 1960 to the university riots in the late 1960s and demonstrations at the Osaka Expo in 1970. We will examine the work and ideas of Art collectives such as the Neo Dadaism Organizers and Hi Red Center, events such as the Independents exhibitions, and the contemporaneous writings of art critics.							
[Course Goals]							
By the end of this course, students will: Understand the historical development of historical development of art in postwar Japan; Understand the political and cultural factors that have influenced artists; Learn to make a critical response to the assigned readings; Learn to read, write, listen, and speak cogently; Present research findings to an audience.							
[Course Schedule and Contents]							
Each week there will be a topic or text assigned for discussion, led by either the instructor or one of the students. The choice and order of texts may be altered during the semester.							
WK. 01 Reportage painters							
WK. 02 Anpo protests and the “Provoke” photographers							
WK. 03 Genpei Akasegawa: from Hi-Red Center to Street Observation							
WK. 04 Metabolist architects and Expo’70							
WK. 05 Discussion text: Reiko Tomii, “Geijutsu on Their Minds: Memorable Words on Anti-Art”							
WK. 06 Discussion text: Michio Hayashi, “Tracing the Graphic in Postwar Japanese Art”							
WK. 07 Discussion text: Mika Yoshitake, “The Language of Things: Relation, Perception, and Duration”							
WK. 08 Discussion text: Miryam Sas, “Intermedia, 1955 - 1970”							
WK. 09 Discussion text: Ming Tiampo, “Decentering Originality”							
WK. 10 Discussion text: Midori Yoshimoto, “From Space to Environment: The Origins of Kankyo and the Emergence of Intermedia Art in Japan”							
WK. 11 Discussion text: Reiko Tomii, “Matsuzawa Yutaka's Wilderness of Nil”							
WK. 12 Discussion text: Kuro DalaiJee, “Performance Collectives in 1960s Japan: With a Focus on the ‘Ritual School’ ”							
WK. 13 Discussion text: Angus Lockyer, “The Logic of Spectacle c.1970”							
WK. 14 Midori Yoshimoto, “Expo’70 and Japanese Art: Dissonant Voices”							
<small>Continue to ILAS Seminar-E2 :Radical Art and Politics in Japan 1960-70 (1960年から70年の日本における前衛芸術と政治) (2)</small>							

<small>ILAS Seminar-E2 :Radical Art and Politics in Japan 1960-70 (1960年から70年の日本における前衛芸術と政治) (2)</small>	
[Class requirement]	
No prior knowledge is required. Students should be able to participate in discussions with their classmates in English.	
[Method, Point of view, and Attainment levels of Evaluation]	
The course will comprise close readings of critical texts in the fields of art, architecture, design, music, and performance. Each student will be required to lead one session. They must read and understand the assigned text, then prepare and present a summary of their findings to the rest of the students. The presentation should be about 60 minutes, and illustrated with a slideshow. It should be supplemented with additional quotations, images, video clips, and so forth. For the remainder of the class, the student must lead a discussion on the topics raised. The text of the presentation should be submitted in essay format, citing salient texts, giving footnotes in the APA style, and captions for all images. Grades are based on participation (20 points), presentations (40 points), and submitted assignments (40 points). Students who are absent more than four times will not be credited. Students who submit work that is plagiarized or lacks proper attribution may fail.	
[Textbook]	
Michio Hayashi 『Tokyo 1955 - 1970: A New Avant-Garde』 (MoMA) ISBN:978-0870708343	
[Reference book, etc.]	
(Reference book)	
Doryun Chong (ed) 『From Postwar to Postmodern: Art in Japan 1945#82111989』 (MoMA) ISBN:978-0822353683	
[Regarding studies out of class (preparation and review)]	
All students are expected to have read the assigned reading(s) before each class.	
[Others (office hour, etc.)]	
By appointment.	
	
<small>Continue to ILAS Seminar-E2 :Radical Art and Politics in Japan 1960-70 (1960年から70年の日本における前衛芸術と政治) (2)</small>	

Lecture code: Z002072

Course numbering		U-LAS70 10002 SE50					
Course title <English>	ILAS Seminar-E2 :Understanding and critical appraisal of qualitative research methods in health care (ヘルスケアにおける質的研究)		Affiliated department, Job title,Name	Graduate School of Medicine Associate Professor,ANAGOSTOU, Despoina			
	ILAS Seminar-E2 :Understanding and critical appraisal of qualitative research methods in health care						
Group	Seminars in Liberal Arts and Sciences		Number of credits	2	Number of weekly time blocks	1	
Class style	Seminar		Course offered year/period	2019・Second semester		Quota (Freshman)	15 (15)
Target year	Mainly 1st year students	Eligible students	For all majors		Day/period	Tue.5	
Classroom	21, Yoshida-South Campus Bldg. No. 1				Language	English	
Keyword	qualitative research / methodology/ methods / quality criteria / critical appraisal / publications						
[Outline and Purpose of the Course]							
<p>This seminar will enable students to develop critical understanding of a range of qualitative research methodologies and apply their use to specific health care scenarios. We will run workshops to explore the key methodologies and different methods in qualitative research using real examples from research projects. We will also run a journal club where students will be encouraged to critically appraise the appropriateness of a range of study designs in relation to a specific research questions as they are presented in internationally published papers. This knowledge will enhance students ability to critique the value and quality of research evidence underpinning clinical practice.</p>							
[Course Goals]							
<p>To understand the concept of qualitative research/ versus quantitative research To understand different schools of thought in qualitative research To explore different methodologies in qualitative research To understand quality criteria for evaluation of qualitative research</p>							
[Course Schedule and Contents]							
<p>Session 1: Introduction to the seminar and introductions of the members of the group Session 2: Definitions of qualitative research and key principles Session 3: Different Designs in qualitative research: ethnography Session 4: Review workshop, using a published ethnographic study Session 5: Key methods of data collection Session 6: Qualitative interviews Session 7: Work on examples of qualitative data, role play Session 8-9: Different methods of qualitative analysis Session 10: Considering the quality of qualitative resesarch Session 11: How to Critically review of qualitative paper Session 12-13: Quality assessment of published papers of qualitative research Session 14-15: Presentations- course feedback</p>							
<small>Continued to UAS Seminar-E2 :Understanding and critical appraisal of qualitative research methods in health care (ヘルスケアにおける質的研究) (1) 1</small>							

<small>UAS Seminar-E2 :Understanding and critical appraisal of qualitative research methods in health care (ヘルスケアにおける質的研究) (1)</small>	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Students will be evaluated via presentation	
[Textbook]	
Not fixed Recommendations will be given during the course	
[Reference book, etc.]	
(Reference book)	
Introduced during class References will be introduced during the course	
[Regarding studies out of class (preparation and review)]	
Students will prepare for their presentations and they will be evaluated via them.	
A couple of published papers will be suggested prior to two sessions, for the students to read. The work of quality appraisal of the publications will take place during sessions.	
[Others (office hour, etc.)]	
Teacher short lectures, discussion groups, student presentations, small group works during seminar session based on an issue specified by the teacher.	
Students are advised to actively participate; make comments and ask questions to generate discussions	

Lecture code: Z002064

Course numbering		U-LAS70 10002 SE50			
Course title <English>	ILAS Seminar-E2 :An introduction to programming for engineers (エンジニア向けのプログラミング入門)		Affiliated department, Job title,Name	Graduate School of Engineering Senior Lecturer,PHILAMORE, Hemma	
	ILAS Seminar-E2 :An introduction to programming for engineers				
Group	Seminars in Liberal Arts and Sciences	Number of credits	2	Number of weekly time blocks	1
Class style	Seminar	Course offered year/period	2019・Second semester	Quota (Freshman)	10 (10)
Target year	Mainly 1st year students	Eligible students	For all majors	Day/period	Wed.5
Classroom	23 (CALL), Yoshida-South Campus Academic Center Bldg. North Wing			Language	English
Keyword	Programming / Python / Engineering				
[Outline and Purpose of the Course]					
Python is an open-source, high level language, widely used in industry and academia.					
This course is designed for students who are completely new to programming as well as those with some prior programming experience, looking to broaden their skills portfolio.					
Part 1: Fundamentals of Programming. Core programming skills and Python functionality. Topics are designed for students from engineering-related disciplines such as using mathematical programming tools and writing programs to solve engineering problems.					
Part 2: Applications of programming. Students will apply the skills learnt in Part 1 to widely-used engineering applications; data science and experimental data analysis, simulation and basic artificial intelligence.					
[Course Goals]					
- Obtain a strong applied knowledge of programming fundamentals					
- Develop computing skills that can enhance students' learning in other engineering subjects.					
- Understand the basics of several industrial applications of programming within engineering					
- Learn code management practices through version control					
[Course Schedule and Contents]					
Part 1: Fundamentals of Programming					
1. Introduction (1 week)					
2. Data types, data structures and basic operators (1 week)					
3. Introduction to version control (1 week)					
4. Control Flow (1 week)					
5. Functions and library functions (1 week)					
6. Input and Output (1 week)					

Continue to LAS Seminar-E2 :An introduction to programming for engineers (エンジニア向けのプログラミング入門) (2)

ILAS Seminar-E2 :An introduction to programming for engineers (エンジニア向けのプログラミング入門) (2)	
7. Representing mathematical problems (1 week)	
8. Visual representations of data (1 week)	
Part 2: Applications of Programming	
9-10. Data science and experimental data analysis	
11-12. Simulation	
13. Trouble-shooting class for final project	
13-14. Basic AI	
This is the provisional schedule for the course. The order, time allocated to Part 1 and 2 and the individual themes within each section is subject to change depending on the class size and student ability. Students will be notified of changes to the schedule in advance to give adequate time to prepare for forthcoming seminars.	
[Class requirement]	
Computers will be provided however it is advisable for students to bring their own laptops to use in class where possible.	
If using personal laptops, either for classwork or homework, students should download and install two pieces of software before starting the course:	
- Git	
- Anaconda (please select Python 3.6 version)	
Both are free and easy installation instructions can be found here:	
Windows	
https://www.atlassian.com/git/tutorials/install-git#windows	
https://docs.anaconda.com/anaconda/install/windows	
Mac	
https://www.atlassian.com/git/tutorials/install-git#mac-os-x	
https://docs.anaconda.com/anaconda/install/mac-os	
Linux	
https://www.atlassian.com/git/tutorials/install-git#linux	
https://docs.anaconda.com/anaconda/install/linux	
[Method, Point of view, and Attainment levels of Evaluation]	
Active participation (15 %)	
Coursework project (85%)	
[Textbook]	
Instructed during class	
[Reference book, etc.]	
(Reference book)	
Introduced during class	
[Regarding studies out of class (preparation and review)]	
More detailed instructions will be provided in class.	

Continue to LAS Seminar-E2 :An introduction to programming for engineers (エンジニア向けのプログラミング入門) (2)

[Others (office hour, etc.)]

Lecture code: Z002030

Course numbering		U-LAS70 10002 SE50				
Course title <English>	ILAS Seminar-E2 :Socio-epidemiology in health research (ヘルスリサーチにおける社会疫学)		Affiliated department, Job title,Name	Graduate School of Medicine Senior Lecturer,S.Pilar Suguiimoto		
	ILAS Seminar-E2 :Socio-epidemiology in health research					
Group	Seminars in Liberal Arts and Sciences	Number of credits	2	Number of weekly time blocks	1	
Class style	Seminar	Course offered year/period	2019・Second semester	Quota (Freshman)	5 (5)	
Target year	Mainly 1st year students	Eligible students	For all majors	Day/period	Wed.5	
Classroom	Small seminar room, 1F, Science Frontier Laboratory, Faculty of Medicine (Faculty of Medicine/Pharmaceutical Science Campus/ University Hospital Campus)			Language	English	
Keyword	Health / Questionnaire / Research / Interview / Social marketing					
[Outline and Purpose of the Course]						
<p>We do research to learn more about people's health, but also to find better ways to prevent diseases. The complexities of the real world and interaction of its people call for effective strategies to ensure good health in its population.</p> <p>"Socio-epidemiology" is a new public health discipline first established in Kyoto University School of Public Health in 2000. It facilitates an ecological and socio-cultural understanding of health using a multidisciplinary approach. Socio-epidemiology encompasses social sciences and epidemiology, or qualitative and quantitative research methods.</p> <p>In this course, students will learn the approach of socio-epidemiology and some relevant tools such as social marketing, behavioral theories, and methods of data collection (design of questionnaires or interviews). The course aims at students of all disciplines; a background in health is not required. Come, learn how marketing can be used to encourage behavior change, improve healthcare, or drive social change. Whether you see yourself in the future as a researcher or not, getting the skills to collect useful and meaningful data through a questionnaire or an interview can be very valuable in any discipline.</p>						
[Course Goals]						
<ul style="list-style-type: none"> - To understand key concepts in socio-epidemiology - To understand the importance of social marketing in behavioral prevention - To understand the complementary role of qualitative and quantitative methods in health research - To understand the development of data collection instruments (questionnaires or interviews) 						
[Course Schedule and Contents]						
<p>In principle, we will cover the following topics:</p> <ol style="list-style-type: none"> 1. Course overview and introduction to socio-epidemiology 2. The research problem and research question 3. Research design and methods of data collection 4. Causality and measurement 5. Social factors related to health 						
<small>Continue to ILAS Seminar-E2 :Socio-epidemiology in health research (ヘルスリサーチにおける社会疫学) (2) ↓ ↓ ↓</small>						

<small>ILAS Seminar-E2 :Socio-epidemiology in health research (ヘルスリサーチにおける社会疫学) (2)</small>	
<p>6. Theories of health and behavior (1) 7. Theories of health and behavior (2) 8. What is social marketing? Segmentation 9. The 4P's in social marketing 10. Social marketing in public health: success stories 11. Tactics for asking questions 12. Questionnaire or Interview development (1)* 13. Questionnaire or Interview development (2)* 14. Questionnaire or Interview analysis*</p> <p>*.Based on the group interests or needs.</p>	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Attendance and class discussion (40%) Assignments (60%)	
[Textbook]	
Not used	
[Reference book, etc.]	
<p>(Reference book) Students will be provided with a list of recommended readings during class.</p>	
[Regarding studies out of class (preparation and review)]	
<p>1) Home assignments will be first discussed and drafted during class and later finished at home. 2) Course preparation assignments will be short readings or tasks that will serve to inform and stimulate class discussion.</p>	
[Others (office hour, etc.)]	
<p>Seminars will be held at: Science Frontier Laboratory, Faculty of Medicine Campus. Small seminar room (1F).</p> <p>Office hours by appointment. Check KULASIS for details.</p>	

Lecture code: Z002042

Course numbering		U-LAS70 10002 SE50			
Course title <English>	ILAS Seminar-E2 :Introduction to Computational Neuroscience (計算論の神経科学入門)		Affiliated department, Job title,Name	Graduate School of Medicine Senior Lecturer,ZENAS C. CHAO	
	ILAS Seminar-E2 :Introduction to Computational Neuroscience				
Group	Seminars in Liberal Arts and Sciences	Number of credits	2	Number of weekly time blocks	1
Class style	Seminar	Course offered year/period	2019・Second semester	Quota (Freshman)	15 (15)
Target year	Mainly 1st year students	Eligible students	For all majors	Day/period	Thu.2
Classroom	3B, Yoshida-South Campus Academic Center Bldg. North Wing			Language	English
Keyword	Neuroscience / Data analysis / Artificial neural network / Programming / MATLAB				
[Outline and Purpose of the Course]					
How do neurons in our brain process information? How can the understanding of our brain help solving medical and engineering problems we're facing today? In this hands-on course, students will learn to analyze real neural data with MATLAB/Octave, and share their works through discussion and presentation. This class is for the student who is interested in computational neuroscience but fears computer programming. Students with no neuroscience and programming backgrounds are welcome.					
[Course Goals]					
(1) To learn neuroscience from a quantitative perspective. (2) To program in a popular programming language MATLAB/Octave. (3) To work with real data and solve real world problems. (4) To share experience in discussion, writing, and presentation.					
[Course Schedule and Contents]					
(1) Introduction					
PART I. Fundamentals					
(2) Basic Neurobiology (3) Programming: The Basics of MATLAB/Octave					
PART II. Neural Coding					
(4) Neural Coding- Spikes (5) Programming- Spike Data Analysis (6) Neural Coding- LFP, ECoG, & EEG (7) Programming- LFP, ECoG, & EEG Data Analysis					
(8) Lab Tours (9) Midterm Presentation					
PART III. Neural Networks					
(10) Neural Networks & Plasticity (11) Artificial Neural Networks					
Continue to ILAS Seminar-E2: Introduction to Computational Neuroscience (計算論の神経科学入門) (2) ↓ ↓ ↓					

ILAS Seminar-E2: Introduction to Computational Neuroscience (計算論の神経科学入門) (2)	

(12) Programming: Artificial Neural Networks	
(13) Final Presentation (14) Final Presentation	
(16) Feedback	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Participation (~15%), programming assignments (~40%), midterm presentation (~15%), final presentation (~30%).	
[Textbook]	
Not used	
[Reference book, etc.]	
(Reference book) Introduced during class	
[Regarding studies out of class (preparation and review)]	
Students should prepare to spend 1~2 hours per week on the programming assignments or design projects.	
[Others (office hour, etc.)]	
Programming exercises will be held in the media center, and students will have access to public PCs. Students are also encouraged to bring their own laptops.	
	
Continue to ILAS Seminar-E2: Introduction to Computational Neuroscience (計算論の神経科学入門) (2) ↓ ↓ ↓	

Lecture code: Z002065

Course numbering		U-LAS70 10002 SE50					
Course title <English>	ILAS Seminar-E2 :An introduction to programming for everyone (一般向けのプログラミング入門)		Affiliated department, Job title,Name	Graduate School of Engineering Senior Lecturer,PHILAMORE, Hemma			
	ILAS Seminar-E2 :An introduction to programming for everyone						
Group	Seminars in Liberal Arts and Sciences		Number of credits	2	Number of weekly time blocks	1	
Class style	Seminar		Course offered year/period	2019・Second semester		Quota (Freshman)	10 (10)
Target year	Mainly 1st year students	Eligible students	For all majors		Day/period	Thu.5	
Classroom	302 (CALL), Academic Center for Computing and Media Studies (South Bldg.)				Language	English	
Keyword	Python / Programming						
[Outline and Purpose of the Course]							
Python is an open-source, high level language, widely used in industry and academia.							
This course is designed for students who are new to programming. Examples are designed to be approachable to students from a broad range of academic disciplines.							
Students will learn the fundamentals of programming by completing based around the development of simple computer games.							
[Course Goals]							
- Obtain a strong applied knowledge of programming fundamentals							
- Learn code management practices through version control							
- Develop computing skills that can enhance academic portfolio in a wide range of academic disciplines							
[Course Schedule and Contents]							
1. Introduction (1 week)							
2. Basic operators and data types (1 week)							
3. Introduction to version control and code sharing (1 week)							
4. Control flow and basic input (1 week)							
5. Functions and library functions (1 week)							
6. Input, output and libraries (1 week)							
7. Computer graphics (1 week)							
8. Physical user interfaces (1 week)							
9. Importing images, sound and text (1 week)							
10. Introduction to classes (1 week)							
11. Introduction to sprites (1 week)							
12. Accessing peripherals (1 week)							
13. Trouble-shooting class for final project							
14. Networking : Multi-player games (1 week)							
<small>Continue to ILAS Seminar-E2 :An introduction to programming for everyone (一般向けのプログラミング入門) (2) ↓ ↓ ↓</small>							

<small>ILAS Seminar-E2 :An introduction to programming for everyone (一般向けのプログラミング入門) (2)</small>	
[Class requirement]	
Computers will be provided however it is advisable for students to bring their own laptops to use in class where possible.	
If using personal laptops, either for classwork or homework, students should download and install two pieces of software before starting the course:	
<ul style="list-style-type: none"> • Git • Anaconda (please select Python 3.6 version) 	
Both are free and easy installation instructions can be found here:	
Windows	
https://www.atlassian.com/git/tutorials/install-git#windows	
https://docs.anaconda.com/anaconda/install/windows	
Mac	
https://www.atlassian.com/git/tutorials/install-git#mac-os-x	
https://docs.anaconda.com/anaconda/install/mac-os	
Linux	
https://www.atlassian.com/git/tutorials/install-git#linux	
https://docs.anaconda.com/anaconda/install/linux	
[Method, Point of view, and Attainment levels of Evaluation]	
Active participation (15 %)	
Coursework project (85%)	
[Textbook]	
Instructed during class	
[Reference book, etc.]	
(Reference book)	
Introduced during class	
[Regarding studies out of class (preparation and review)]	
More detailed instructions will be provided in class.	
[Others (office hour, etc.)]	

Lecture code: Z002033

Course numbering		U-LAS70 10002 SE50			
Course title <English>	ILAS Seminar-E2 :Biochemistry Principles (生化学の塾)		Affiliated department, Job title,Name	Graduate School of Medicine Assistant Professor,Erik WALINDA	
	ILAS Seminar-E2 :Biochemistry Principles				
Group	Seminars in Liberal Arts and Sciences		Number of credits	2	Number of weekly time blocks
Class style	Seminar		Course offered year/period	2019・Second semester	
				Quota (Freshman) 15 (10)	
Target year	Mainly 1st year students		Eligible students	For all majors	
				Day/period Thu.5	
Classroom	3B, Yoshida-South Campus Academic Center Bldg. North Wing			Language	English
Keyword	Biochemistry / Molecular Biology / Physiology				
[Outline and Purpose of the Course]					
In order to take this seminar, it is recommended to have some knowledge of biology or biochemistry or take the lecture [Introduction to biochemistry] at the same time.					
The content of the seminar is the same as that of the lecture. The difference is that, here we will take time to review and discuss the contents of the lecture. I will answer questions to make sure every student could understand everything they wanted to understand. This means that this seminar is a tutorial to the lecture. The Japanese subtitle 生化学の塾 emphasizes this.					
Students are welcome to ask any question at any time. We will also solve textbook problems to deepen our understanding of the matter.					
This seminar is given in English and active student participation is highly encouraged.					
[Course Goals]					
As all matter is composed of atoms, modern life science aims to explain all aspects of life comprehensively from the atomic level to that of the entire organism. In this seminar, students will attain a profound understanding of the atomic design of life, that is how biomolecules work and join forces to fulfill virtually all actions exerted by living beings.					
[Course Schedule and Contents]					
1. Introduction to biochemistry 2. DNA, genes, and genomes 3. DNA replication and gene expression 4. Proteins 5. Protein structure 6. DNA isolation and analysis 7. DNA cloning and PCR 8. Protein methods 9. Enzymes 10. Enzyme kinetics 11. Carbohydrates 12. Lipids 13. Metabolism					
Continue to ILAS Seminar-E2 :Biochemistry Principles (生化学の塾) (2) ↓ ↓ ↓					

ILAS Seminar-E2 :Biochemistry Principles (生化学の塾) (2)	
14. Citric acid cycle and oxidative phosphorylation	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Attendance and active participation [60%] Homework assignments [40%]	
[Textbook]	
Berg, Tymoczko and Stryer 『Biochemistry (any edition)』 (W. H. Freeman and Co.) ISBN:978-1-4292-7635-1	
[Regarding studies out of class (preparation and review)]	
Biochemical textbook problems will be given as homework. In addition, students are invited to prepare their own questions to the instructor in advance.	
[Others (office hour, etc.)]	
Office hour: any time.	
	

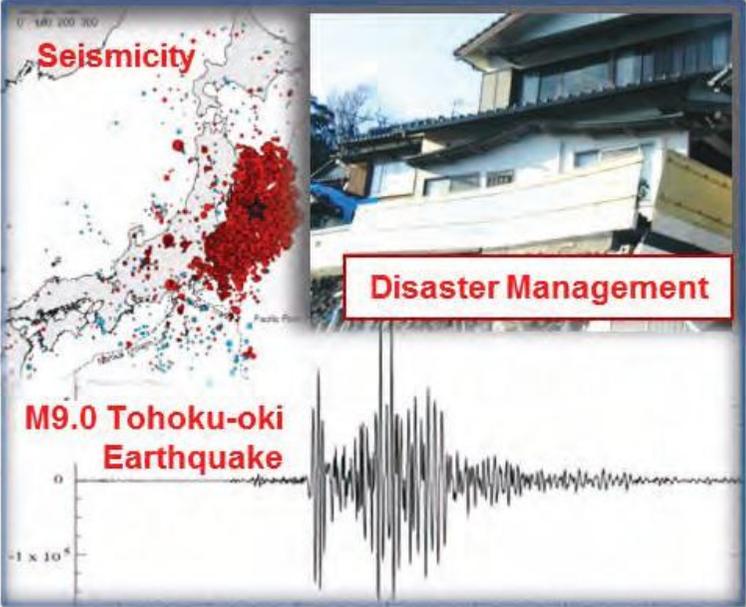
Lecture code: Z002045

Course numbering		U-LAS70 10002 SE50					
Course title <English>	ILAS Seminar-E2 :Critical thinking and Communication skills (批判的思考とコミュニケーション・スキル)		Affiliated department, Job title,Name	Graduate School of Medicine Assistant Professor,POUDYAL, Hemant			
	ILAS Seminar-E2 :Critical thinking and Communication skills						
Group	Seminars in Liberal Arts and Sciences		Number of credits	2	Number of weekly time blocks	1	
Class style	Seminar		Course offered year/period	2019・Second semester		Quota (Freshman)	10 (10)
Target year	Mainly 1st year students	Eligible students	For all majors		Day/period	Thu.5	
Classroom	Seminar room 23, ILAS Bldg.				Language	English	
Keyword	Critical thinking / Communication / Academic writing						
[Outline and Purpose of the Course]							
<p>This course presents an introduction to the theory and practice of communication skills necessary for undergraduate students for the academic and scientific scholarship. The course will adopt the format of a “ short-term research project” where students will be required to generate ideas around a topic of their choice through self-directed learning and in-class discussion. This unique approach will help students to build knowledge, vocabulary and critical thinking skills that will enable them to develop ideas effectively communicate in English. Students will then have the opportunity to write short articles, provide peer feedback and present their paper in the classroom.</p> <p>The course will include lectures on presentation skills, organizing scientific information, principles of good writing, strategies for writing faster and with less anxiety, types, and format of biomedical articles, and other skills necessary to effectively communicate with different audiences.</p>							
[Course Goals]							
<ol style="list-style-type: none"> 1. To define and describe the process of academic communication 2. To familiarize with the process of simple scientific inquiry, reasoning, and critical thinking 3. To comprehend and adapt styles of written and oral communication including a systematic approach to drafting, revising and editing, and the development of logical, clear, concise, balanced arguments 4. To develop cultural literacy skills by exploring principles of non-verbal communication and a range of strategies designed to overcome barriers to communication 							
[Course Schedule and Contents]							
<p>In principle, the course will be offered as the following plan. However, it may change the order or the number of times for each theme depending on the progressive of the course or handling on current topics.</p> <ol style="list-style-type: none"> 1. Course introduction 2. Organising thoughts and ideas 3. Scientific methods, reasoning and hypothesis formation 4. Critical thinking: Developing inferences skills 5. Critical thinking: Examining opinions and beliefs 6. Evaluating and assessing scientific evidence 7. The communication process and cultural literacy 8. Writing academic communications 9. Academic speaking strategies 							
<small>Continue to ILAS Seminar-E2 :Critical thinking and Communication skills (批判的思考とコミュニケーション・スキル) (Q)</small>							

<small>ILAS Seminar-E2 :Critical thinking and Communication skills (批判的思考とコミュニケーション・スキル) (Q)</small>	
<ol style="list-style-type: none"> 10. One-to-one talk 11. Small group talk 12. Large group talk-Making academic presentations 13. Verbal & nonverbal communication skills 14. Visual aid in academic communications- Basics of slide design. 	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
<p>Active classroom participation: 30%</p> <p>Written report: 35%</p> <p>Presentation: 35%</p>	
[Textbook]	
Not used	
[Reference book, etc.]	
<p>(Reference book)</p> <p>Reference materials will be provided during the class.</p>	
[Regarding studies out of class (preparation and review)]	
Students are required to conduct a simple internet-based research activity for the duration of the course and present their findings.	
[Others (office hour, etc.)]	
<p>You may contact the instructor by email if you have any questions. The instructor will also be available for course-related consultation out of seminar hours is requested by the students. Please make an appointment by email (medsocio.kyodai@gmail.com).</p>	

Lecture code: Z002037

Course numbering		U-LAS70 10002 SE50			
Course title <English>	ILAS Seminar-E2 :Earthquakes & Volcanoes - Prediction and Hazards (地震・火山噴火の予知及び防災)		Affiliated department, Job title,Name	Graduate School of Science Associate Professor,ENESCU, Bogdan Dumitru	
	ILAS Seminar-E2 :Earthquakes & Volcanoes - Prediction and Hazards				
Group	Seminars in Liberal Arts and Sciences	Number of credits	2	Number of weekly time blocks	1
Class style	Seminar	Course offered year/period	2019・Second semester	Quota (Freshman)	15 (10)
Target year	Mainly 1st year students	Eligible students	For all majors	Day/period	Thu.5
Classroom	152, Faculty of Science Bldg. No.1 (North Campus)			Language	English
Keyword	Earthquakes (地震) / Volcanoes (火山) / Prediction (予知) / Hazard (ハザード)				
[Outline and Purpose of the Course]					
We are going to read scientific papers related to a topic that is important both scientifically and socially. Is it possible to predict the occurrence of large earthquakes and volcanic eruptions? What are the current scientific advances in this field? We will also learn about earthquake and volcano hazard and discuss ways to reduce the risk of associated disasters.					
[Course Goals]					
The course aims to show students the importance of studying about natural disasters caused by earthquakes and volcanoes, which may help finding better ways to reduce their risk. To facilitate understanding, some materials/vocabulary in Japanese will be provided during the seminar. 日本語のキーワード等もいたしますので、遠慮なく参加してください。近年重要度が高まっている地震・防災学を学びながら、英語の能力も向上しましょう！					
[Course Schedule and Contents]					
Each student is going to choose a paper and prepare a short report (few PowerPoint slides), summarizing the main ideas of the study. The paper can be chosen freely; some broad suggestions include: - The physics of great earthquakes (e.g., Tohoku-oki earthquake): any clues for predicting them? - Large volcanic eruptions and possibilities of prediction; - Earthquake and volcano hazard.					
The first class will give students some broad options of topics/papers. During the second class we will decide the paper that each student is going to present. I will exemplify with a research presentation during the third class. Starting with the fourth class, each student is going to present the chosen paper and get feedback for improving his report. In the examination day, each student should present briefly his updated/revised report.					
Depending on the number of students and available time, we are going to visit the underground seismic base isolation at the "Kyoto University Clock Tower", the nearby Hanaore Fault and/or the Disaster Prevention Research Institute (DPR), Kyoto University, to discuss with earthquake/volcano scientists.					
<small>Continue to ILAS Seminar-E2 :Earthquakes & Volcanoes- Prediction and Hazards 地震・火山噴火の予知及び防災 (2)</small>					

<small>ILAS Seminar-E2 :Earthquakes & Volcanoes- Prediction and Hazards 地震・火山噴火の予知及び防災 (2)</small>	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Grading will be based on attendance and participation (60%) and presentation of chosen paper (40%).	
[Textbook]	
Not used	
[Regarding studies out of class (preparation and review)]	
The student will have to prepare the assigned paper.	
[Others (office hour, etc.)]	
Students can meet me during office hours with prior appointment.	
	
<small>Continue to ILAS Seminar-E2 :Earthquakes & Volcanoes- Prediction and Hazards 地震・火山噴火の予知及び防災 (2)</small>	

Lecture code: Z002057

Course numbering		U-LAS70 10002 SE50					
Course title <English>	ILAS Seminar-E2 :Geo-Disaster Risk Reduction and Prevention (土砂災害の防災・減災学)		Affiliated department, Job title,Name	Graduate School of Agriculture Assistant Professor,VILAYVONG, Khonesavanh			
	ILAS Seminar-E2 :Geo-Disaster Risk Reduction and Prevention						
Group	Seminars in Liberal Arts and Sciences		Number of credits	2	Number of weekly time blocks	1	
Class style	Seminar		Course offered year/period	2019・Second semester		Quota (Freshman)	15 (15)
Target year	Mainly 1st year students	Eligible students	For all majors		Day/period	Thu.5	
Classroom	W302, Faculty of Agriculture Main Bldg. (North Campus)				Language	English	
Keyword	geodisaster / assessment / analysis / natural disaster / forest disaster						
[Outline and Purpose of the Course]							
This course introduces students to the basic principles that address mechanism, solution and management of hazards and disasters using basic science and engineering of water, soil and ecosystem. The course covers basic theories and methods useful to equip and enhance students' ability in analysis, prediction, assessment and monitoring of geo-disasters. For example: disasters from earthquake and heavy rain such as landslide, slope failure, debris flow, ground subsidence, and liquefaction. Roles of forests and relevant information communication technology (ICT) tools and risk reduction methods are discussed.							
[Course Goals]							
1. To introduce students with knowledge, concept and terminology on hazard and disaster in general 2. To encourage students' technical discussion and presentation on risk reduction assessment 3. To facilitate students in finding innovation and solution for geo-disasters prevention and risk reduction							
[Course Schedule and Contents]							
1. Introduction to earth science and disaster science 2. Geo-hazard in the environment - Landslide, rockfall, debris flow, soil erosion - Ground subsidence, liquefaction, tsunami, volcano 3. Dimension of hazard 4. Complexity, sustainability and vulnerability 5. Risk assessment 6. Reduction methods for earthquake and tsunami hazards 7. Reduction methods for volcano hazards 8. Student presentation (1) - Group Work 9. Reduction methods for mass movement hazards 10. Reduction methods for severe storm hazards 11. Reduction methods for hazards - weather extremes, diseases and wildfires 12. Reduction method for flood, drought, and technological hazard 13. Modelling hazards and disasters 14. Student Presentation (2) - Individual 15. Examination 16. Feedback							
<small>Continue to ILAS Seminar-E2 :Geo-Disaster Risk Reduction and Prevention (土砂災害の防災・減災学) (2) ↓ ↓ ↓</small>							

<small>ILAS Seminar-E2 :Geo-Disaster Risk Reduction and Prevention (土砂災害の防災・減災学) (2)</small>	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
- Class performance (25%) - Assignment report (25%) - Oral presentation (25%) - Examination (25%)	
[Textbook]	
Keith Smith 『Environmental Hazards (Sixth Edition)』 (Routledge) Additional study materials and handouts will be distributed.	
[Reference book, etc.]	
(Reference book) Introduced during class	
[Regarding studies out of class (preparation and review)]	
Students are expected to be independent in finding online resources to attain relevant issues of discussion during seminar to enhance student interaction and understanding during classes.	
[Others (office hour, etc.)]	
After class, student consultation will be arranged with prior notice.	

Lecture code: Z002035

Course numbering		U-LAS70 10002 SE50					
Course title <English>	ILAS Seminar-E2 :Insect and ecosystem sustainability (昆虫と持続可能な生態系)		Affiliated department, Job title, Name	Research Institute for Sustainable Humanosphere			
	ILAS Seminar-E2 :Insect and ecosystem sustainability			Senior Lecturer, YANG, Chin-Cheng			
Group	Seminars in Liberal Arts and Sciences		Number of credits	2	Number of weekly time blocks	1	
Class style	Seminar		Course offered year/period	2019・Second semester		Quota (Freshman)	5 (5)
Target year	Mainly 1st year students	Eligible students	For all majors		Day/period	Thu.5	
Classroom	Seminar room 22, ILAS Bldg.				Language	English	
Keyword	Insect biodiversity / Ecosystem / Edible insect / Field trip / Biology						
[Outline and Purpose of the Course]							
This is a small-sized seminar-type class for students anticipating to learn how insects work to maintain our Earth's sustainability.							
Most of the course content is case-driven, so students shall not worry about not having a relevant academic background, especially for those from the non-biology departments.							
This course comprises lecture/class discussion (8 weeks), field trip (5 weeks) and hands-on session (1 week). Students will be exposed to various live insects during the class and the field trips.							
[Course Goals]							
The course will help the student understand how important insects are in the ecosystem, and how much insects contribute to maintain sustainability of the ecosystems.							
[Course Schedule and Contents]							
In principal, the course will be offered as the following plan. However, the order or time for each theme may change depending on the progressive of the course or handling on current topics. Note that students may have to pay their own transportation fee for the proposed field trips.							
Week 01: Course introduction							
Week 02: Intro to insect diversity - Introduce the diversity of insect in our ecosystem							
Week 03: Insect hunting @ Yoshida campus - Collect insect at Yoshida campus, especially for pollinator							
Week 04: The role of insect in ecosystem - Introduce diverse roles that insect play in our ecosystem							
Week 05: Insects as pollinators - Examine pollinator specimens collected from Week 03, and introduce the role of pollinator in maintaining ecosystem sustainability							
Continue to ILAS Seminar-E2 :insect and ecosystem sustainability (昆虫と持続可能な生態系)(2) ↓ ↓ ↓							

ILAS Seminar-E2 :insect and ecosystem sustainability (昆虫と持続可能な生態系)(2)	

Week 06: Field trip @ Yoshida Mountain Trail (吉田山) - Collect insect at Yoshida Mountain Trail, especially for decomposers	
Week 07: Insects as decomposers - Examine decomposer specimens collected from Week 06, and introduce the role of decomposer in maintaining ecosystem sustainability	
Week 08: Field trip @ Kamogawa River (鴨川) - Collect insect at Kamogawa River, especially for biological control agents	
Week 09: Insects as biological control agents - Examine decomposer specimens collected from Week 08, and introduce the role of biological agent in maintaining ecosystem sustainability	
Week 10: Edible insects - how eating insects saves our ecosystem	
Week 11: Field trip @ Nishiki Market (錦市場) - Visit edible insect shops @ Nishiki Market	
Week 12: Threats to insect biodiversity and ecosystem sustainability - Introduce various threats to insect biodiversity and ecosystem sustainability	
Week 13: Hands-on session - Behavioral experiments on aggressiveness of invasive ants	
Week 14: Field trip @ Mino Park Insectarium (箕面公園昆虫館) - Introduce various insect species that provide ecosystem services and hands-on	
Week 15: Finals	
Week 16: Feedback	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
40% in - class discussion, 40% final, 20% presentation	
[Textbook]	
WJ Mitsch, SE Jørgensen 『Ecological engineering and ecosystem restoration』 (John Wiley & Sons, 2003)	
[Reference book, etc.]	
(Reference book) Introduced during class to be announced according to the content of a given class each week	

Continue to ILAS Seminar-E2 :insect and ecosystem sustainability (昆虫と持続可能な生態系)(2) ↓ ↓ ↓	

[Regarding studies out of class (preparation and review)]

Students are encouraged to express their ideas in class based on the readings the instructor assigns ahead of the class.

[Others (office hour, etc.)]

Lecturer: Chin - Cheng Yang (ccyang@rishi.kyoto - u.ac.jp)

Office: HW 412, Research Building No. 1, Uji Campus

Office hours: to be announced

Note: There is a possibility that the instructor may organize a field trip that normally is a one-day event on the weekend, instead of the regular slot of this lecture. The lecturer will discuss date and time with students for the field trip at the beginning of the semester. Students are advised to pay the travel expense. Also be advised to obtain the insurance for study and research “Personal Accident Insurance for Students Pursuing Ed. & Rsch.(学生教育研究災害傷害保険)” if you decide to take the class

Lecture code: Z002066

Course numbering		U-LAS70 10002 SE50			
Course title <English>	ILAS Seminar-E2 :Introductory Bioinformatics (バイオインフォマティクス入門)		Affiliated department, Job title,Name	Institute for Frontier Life and Medical Sciences Program-Specific Senior Lecturer,VANDENBON, Alexis	
	ILAS Seminar-E2 :Introductory Bioinformatics				
Group	Seminars in Liberal Arts and Sciences	Number of credits	2	Number of weekly time blocks	1
Class style	Seminar	Course offered year/period	2019・Second semester	Quota (Freshman)	10 (10)
Target year	Mainly 1st year students	Eligible students	For all majors	Day/period	Thu.5
Classroom	26, Yoshida-South Campus Bldg. No. 1			Language	English
Keyword	Bioinformatics / Computational biology / Sequence alignment / Evolution / Genomics				
[Outline and Purpose of the Course]					
Bioinformatics is an interdisciplinary field in which statistics, machine learning and computer programming are applied to biological data. Recently, computational approaches such as bioinformatics have become an essential part of biological research. This course will offer an overview of bioinformatics techniques, including sequence alignment, comparative and evolutionary genomics, protein structure prediction, analysis of sequencing data, systems biology, and widely used biological databases.					
[Course Goals]					
Students will gain insight into a variety of topics within the field of bioinformatics. By taking this course, students will acquire knowledge about fundamental bioinformatics analyses, and will gain understanding about how bioinformatics can contribute to studies in biology.					
[Course Schedule and Contents]					
In principle, the course will be offered according to the following plan. However, depending on the progress of the course the order or the number of lectures for each topic may change. Lectures 1 and 2. Introduction to Bioinformatics: What is bioinformatics? We will introduce various topics in bioinformatics, from the use of sequence alignments in making phylogenetic trees, prediction of protein structure, to the modelling of a simple regulatory network. Lectures 3 and 4. Genome organization and evolution. We will introduce the genomes of prokaryotes and eukaryotes and their content. Genome sequencing projects and metagenomics will be covered. Lecture 5. Scientific literature and Databases: Databases form the basis for most applications in bioinformatics, containing sequences, structures, annotations, pathways, and literature. We will go through the most widely used biological databases, and look at the types of data and tools they contain. Lecture 6. Alignments: Aligning sequences is one of the fundamental tasks in bioinformatics. We will start with an introduction to alignment, from dotplots to a dynamic programming algorithm. The usage and interpretation of pairwise sequence alignments will be covered. Lecture 7. Phylogenetics: We will extend pairwise alignments to alignments of multiple sequences. We will introduce methods for turning multiple alignments into phylogenetic trees. We will discuss different types of phylogenetic trees, their properties and interpretation. Lecture 8: Mid-term exam. Lectures 9 and 10: Structural bioinformatics. Starting from a review of the properties of amino acids, we will introduce protein structural alignments and approaches for predicting secondary, tertiary and quaternary					
Continue to ILAS Seminar-E2 :Introductory Bioinformatics (バイオインフォマティクス入門) (2) ↓ ↓ ↓					

ILAS Seminar-E2 :Introductory Bioinformatics (バイオインフォマティクス入門) (2)	
protein structure from amino acid sequences. In addition, we will briefly cover methods for predicting protein function.	
Lecture 11: Systems biology: Complex systems have properties that cannot easily be inferred from their individual components. In this lecture, we will introduce holistic approaches to the study of biology. Especially, we will focus on biological networks and their properties.	
Lecture 12 and 13: Practical NGS data analysis: Introduction to so-called “next generation sequencing” (NGS) approaches, and its applications. The information contained in a typical NGS dataset will be introduced, as well as practical steps in its processing, mapping, and interpretation.	
Lecture 14: Metabolic pathways and Review of course material. We will introduce classification systems for enzymes, and popular databases of metabolic pathways.	
Lecture 15. Final examination	
Lecture 16. Feedback	
[Class requirement]	
Students are expected to have basic knowledge about molecular biology.	
[Method, Point of view, and Attainment levels of Evaluation]	
Grading: attendance and active participation (20%), mid-term exam (20%), assignments (20%), and final exam (40%)	
[Textbook]	
Arthur Lesk 『Introduction to Bioinformatics (4th edition)』 (Oxford University Press) ISBN:978-0199651566	
The course lectures will follow the content of this textbook. Sections of the book to read in preparation of each class will be announced.	
[Regarding studies out of class (preparation and review)]	
The course will follow a textbook. At the end of each lecture I will specify the sections to read before the next lecture.	
[Others (office hour, etc.)]	
No fixed office hours. Students are requested to make appointments directly or by email.	

Lecture code: Z002053

Course numbering		U-LAS70 10002 SE50			
Course title <English>	ILAS Seminar-E2 :What is light? (光って何?)		Affiliated department, Job title,Name	Graduate School of Engineering	
	ILAS Seminar-E2 :What is light?			Senior Lecturer,DE ZOYSA, Menaka	
Group	Seminars in Liberal Arts and Sciences		Number of credits	2	Number of weekly time blocks
					1
Class style	Seminar		Course offered year/period	2019・Second semester	
				Quota (Freshman)	10 (10)
Target year	Mainly 1st year students	Eligible students	For all majors		Day/period
					Thu.5
Classroom	34, Yoshida-South Campus Academic Center Bldg. North Wing			Language	English
Keyword	Light / Optics				
[Outline and Purpose of the Course]					
This seminar is for students to learn about the basic properties of light such as reflection, transmittance, interference, diffraction, emission, and absorption with the help of experimental demonstrations. Students will be asked to join laboratory tours, which help to understand the front-line technologies related to light-control.					
[Course Goals]					
<ul style="list-style-type: none"> • Understand the properties of light with the help of experiments. • Learn about front-line technologies related to light-control. 					
[Course Schedule and Contents]					
1. Overview of the course, introduction to light waves (1 week) 2. Introduction to vector calculus (1 week) 3. Fundamentals of light, wave equations (3 weeks) 4. Reflection, transmittance, total internal reflection (2 weeks) 5. Laboratory tour and experiments (2 weeks) 6. Interference and diffraction theories (2 weeks) 7. Light emission and absorption (1 week) 8. Laboratory tour and introduction of front-line technologies (2 weeks)					
[Class requirement]					
None					
[Method, Point of view, and Attainment levels of Evaluation]					
Evaluation will be based on participation (30%), discussion (30%), and homework (40%).					
[Textbook]					
Not used					
[Reference book, etc.]					
(Reference book)					
Introduced during class					
[Regarding studies out of class (preparation and review)]					
Students are required to do their homework.					
[Others (office hour, etc.)]					
Office hour: Anytime by email and appointments should be made via email or during the seminars.					

Lecture code: Z002038

Course numbering		U-LAS70 10002 SE50			
Course title <English>	ILAS Seminar-E2 :Biochemistry Principles (生化学の塾)		Affiliated department, Job title,Name	Graduate School of Medicine Assistant Professor,Erik WALINDA	
	ILAS Seminar-E2 :Biochemistry Principles				
Group	Seminars in Liberal Arts and Sciences	Number of credits	2	Number of weekly time blocks	1
Class style	Seminar	Course offered year/period	2019・Second semester		Quota (Freshman) 15 (10)
Target year	Mainly 1st year students	Eligible students	For all majors	Day/period	Fri.5
Classroom	21, Yoshida-South Campus Bldg. No. 1			Language	English
Keyword	Biochemistry / Molecular Biology / Physiology				
[Outline and Purpose of the Course]					
In order to take this seminar, it is recommended to have some knowledge of biology or biochemistry or take the lecture [Introduction to biochemistry] at the same time.					
The content of the seminar is the same as that of the lecture. The difference is that, here we will take time to review and discuss the contents of the lecture. I will answer questions to make sure every student could understand everything they wanted to understand. This means that this seminar is a tutorial to the lecture. The Japanese subtitle 生化学の塾 emphasizes this.					
Students are welcome to ask any question at any time. We will also solve textbook problems to deepen our understanding of the matter.					
This seminar is given in English and active student participation is highly encouraged.					
[Course Goals]					
As all matter is composed of atoms, modern life science aims to explain all aspects of life comprehensively from the atomic level to that of the entire organism. In this seminar, students will attain a profound understanding of the atomic design of life, that is how biomolecules work and join forces to fulfill virtually all actions exerted by living beings.					
[Course Schedule and Contents]					
1. Introduction to biochemistry 2. DNA, genes, and genomes 3. DNA replication and gene expression 4. Proteins 5. Protein structure 6. DNA isolation and analysis 7. DNA cloning and PCR 8. Protein methods 9. Enzymes 10. Enzyme kinetics 11. Carbohydrates 12. Lipids 13. Metabolism					
Continue to ILAS Seminar-E2 :Biochemistry Principles (生化学の塾) (2) ↓ ↓ ↓					

ILAS Seminar-E2 :Biochemistry Principles (生化学の塾) (2)
14. Citric acid cycle and oxidative phosphorylation
[Class requirement]
None
[Method, Point of view, and Attainment levels of Evaluation]
Attendance and active participation [60%] Homework assignments [40%]
[Textbook]
Berg, Tymoczko and Stryer 『Biochemistry (any edition)』 (W. H. Freeman and Co.) ISBN:978-1-4292-7635-1
[Regarding studies out of class (preparation and review)]
Biochemical textbook problems will be given as homework. In addition, students are invited to prepare their own questions to the instructor in advance.
[Others (office hour, etc.)]
Office hour: any time.

Continue to ILAS Seminar-E2 :Biochemistry Principles (生化学の塾) (2) ↓ ↓ ↓

Lecture code: Z002070

Course numbering		U-LAS70 10002 SE50			
Course title <English>	ILAS Seminar-E2 :Let's simulate human movement (コンピューターで人を動かしてみよう)		Affiliated department, Job title,Name	Graduate School of Medicine Associate Professor,PATAKY, Todd	
	ILAS Seminar-E2 :Let's simulate human movement				
Group	Seminars in Liberal Arts and Sciences	Number of credits	2	Number of weekly time blocks	1
Class style	Seminar	Course offered year/period	2019・Second semester	Quota (Freshman)	6 (6)
Target year	Mainly 1st year students	Eligible students	For all majors	Day/period	Fri.5
Classroom	Seminar room 2, 2F, School of Human Health Sciences, Faculty of Medicine (Faculty of Medicine/Pharmaceutical Science Campus/University Hospital Campus)			Language	English
Keyword	computer simulation / physics / biomechanics				
[Outline and Purpose of the Course]					
Computer simulations of human movement help (a) clinicians understand movement disorders, (b) doctors make corrective surgery decisions, and (c) engineers design artificial limbs. This course will introduce you to human movement simulation, ranging from simple 1D motion to 3D, multi-segment muscle-driven motion. We will use the free physics simulators "OpenSim" and "Blender" to explore simulation possibilities and the various factors which affect simulation results. Computer programming experience is useful but not required.					
[Course Goals]					
Students will become familiar with the main concepts of human motion simulation. They will learn how to reproduce and modify example models and animations. Last, as a final project they will work to create their own human movement simulation.					
[Course Schedule and Contents]					
Over this 14-week lecture the following topics will be covered in each class:					
<ol style="list-style-type: none"> 1) Introduction to Blender and OpenSim 2) Simulation 1: Projectiles 3) Simulation 2: Walking 4) Experiment 1: Knee extension 5) Analysis 1-1: inverse kinematics in Blender 6) Analysis 1-2: inverse kinematics in OpenSim 7) Experiment 2: Maximum vertical jumping 8) Analysis 2-1: Inverse kinematics in Blender 9) Analysis 2-2: Inverse dynamics in OpenSim 10) Simulation 3: Muscle force estimation 11) Analysis 3: Experimental muscle force estimation 12) Final Project: Experiment day (kinematics and forces) 13) Final Project: Analysis & simulation (Blender, OpenSim or both) 14) Final Project presentations & Simulation optimization lesson 					
Continue to ILAS Seminar-E2 :Let's simulate human movement (コンピューターで人を動かしてみよう) (2) ↓ ↓ ↓					

ILAS Seminar-E2 :Let's simulate human movement (コンピューターで人を動かしてみよう) (2)	
[Class requirement]	
None	
[Method, Point of view, and Attainment levels of Evaluation]	
Students are expected to actively participate in class, to reproduce all examples discussed in class, and also to produce all simulations independently. Evaluation will be based on the following criteria: class participation (10%), assignments (60%; 10 assignments @ 6% each), final project (30%).	
[Textbook]	
None. All necessary materials will be distributed electronically and will be discussed in class.	
[Reference book, etc.]	
(Reference book)	
Introduced during class	
(Related URL)	
http://www.blender.org (The Blender software package will be used in some lectures.) http://opensim.stanford.edu (The OpenSim software package will be used in many lectures.) https://simtk-confluence.stanford.edu/display/OpenSim/OpenSim+Documentation (OpenSim documentation)	
[Regarding studies out of class (preparation and review)]	
There will be a small assignment most weeks based on lecture content; students should submit these assignments more than one day before the next lecture.	
[Others (office hour, etc.)]	

Lecture code: Z002076

Course numbering		U-LAS70 10002 SE50					
Course title <English>	ILAS Seminar-E2 :Technology and Modern Society - A Historical Perspective (日本の工業技術史と現代社会)		Affiliated department, Job title,Name	Graduate School of Engineering Senior Lecturer, ISLAM, A K M Mahfuzul			
	ILAS Seminar-E2 :Technology and Modern Society - A Historical Perspective						
Group	Seminars in Liberal Arts and Sciences		Number of credits	2	Number of weekly time blocks	1	
Class style	Seminar		Course offered year/period	2019・Second semester		Quota (Freshman)	10 (10)
Target year	Mainly 1st year students	Eligible students	For all majors		Day/period	Fri.5	
Classroom	Seminar room 21, ILAS Bldg.				Language	English	
Keyword	Technology / Semiconductor industry / Modern society						
[Outline and Purpose of the Course]							
The human history can be well described in terms of the evolution of technology and how it shaped the society around the world. The course will show that historical perspective on the evaluation of a technology gives a better understanding of the present society. We will also discuss how the historical knowledge can be used in taking better decisions. The aim of this course is to develop analyzing ability by surveying on a particular technology in terms of the relationship with society. To achieve that, an in-depth historical survey on semiconductor technology will be discussed as an example in the class. The students will submit their own survey results. The course will be tailored aiming at having the students to learn from each other, by presenting, commenting and discussing each others research results.							
[Course Goals]							
1. To develop ability to identify how arts, technologies, and other factors contributed to modern society. 2. To nurture ability to connect the values, and actions of past generations to modern society. 3. To be able to describe Japan's interactions with other parts of the world and how technological evolution can impact the economy largely.							
[Course Schedule and Contents]							
1. Technology and Society 2. Interaction between technology and society 3. What is modern society? 4. Technological evolution: a historical study on semiconductor technology a) History of semiconductor industry b) Impact on modern society c) Japan's role in semiconductor technology evolution d) Impact on Japan's economy 5. AI, robotics and future society							
[Class requirement]							
None							
Continue to ILAS Seminar E2 :Technology and Modern Society (日本の工業技術史と現代社会) (2) ↓ ↓							

ILAS Seminar E2 :Technology and Modern Society - A Historical Perspective (日本の工業技術史と現代社会) (2)	
[Method, Point of view, and Attainment levels of Evaluation]	
Assignments (50%) and term-end report (50%)	
[Textbook]	
Not fixed Handouts will be given and online materials will announced in the class.	
[Reference book, etc.]	
(Reference book) Introduced during class	
[Regarding studies out of class (preparation and review)]	
The students are encouraged to actively participate in the discussion, share their opinions and analyze other views.	
[Others (office hour, etc.)]	
Office hour will be announced in the class. Questions are always welcome by email.	

Lecture code: Z003006

Course numbering		U-LAS70 10003 SB50					
Course title <English>	ILASセミナー（海外）：Conflict Management[Global Water Issues]		Affiliated department, Job title, Name	Disaster Prevention Research Institute Professor, SUMI TETSUYA			
	ILAS Seminar (Overseas): Conflict Management[Global Water Issues]			Disaster Prevention Research Institute Associate Professor, Sameh Kantoush			
Group	Seminars in Liberal Arts and Sciences		Number of credits	2	Hours	30	
Class style	Seminar		Course offered year/period	2019・Intensive, First semester		Quota (Freshman)	8 (5)
Target year	Mainly 1st year students	Eligible students	For all majors		Day/period	Intensive	
Classroom	Vietnam			Language	English		
Keyword	ベトナム(Vietnam) / 国際河川(Transboundary river basins) / 水資源(Water Resources) / コンフリクトマネジメント(CONFLICT MANAGEMENT) / ダム(Dam)						
[Outline and Purpose of the Course]							
<p>越境河川であるメコン川では、上流のダム建設に伴う下流への水量変化など、多国間の利害が対立する水管理問題が顕在化している。本講義では、このような越境河川の水管理問題の解決のために、国際協調の枠組みがいかに重要かについて、現地状況の把握を踏まえながら考える。</p> <p>現地の受け入れ大学は、Ha Noi（ハノイ市）の Thuy Loi 大学(ベトナム水資源大学)であり、海岸浸食問題の生じている Da Nang（ダナン市）や、メコンデルタの中心である Can Tho（カントー市）、最後に Thuy Loi 大学の第二キャンパスのある Ho Chi Ming（ホーチミン市）を訪問し、講義受講や現地見学を通じて得られた情報をもとに、先方との学生を交えてミニワークショップを行う。</p>							
<p>It is generally accepted that water resources are under increasing stresses from a number of players, forces and parameters visible in this century. In particular for the sovereign countries will deal with increasing scarcity shared river basins. Geography has important responsibility, with location in the basin (upstream/downstream) and in the environment (arid/semi-arid climate) regarded as key factors in future water conflict. Global warming is also thought to pose particular challenges to water-stressed societies and communities that must develop mitigation and adaptation mechanisms in order to survive. In transboundary river basins such as the Mekong, Brahmaputra, Nile, and Ganges Rivers, water conflicts are arising among related countries such as great impacts on water resources by new construction of large dams upstream. The aim of this intensive course is to study transboundary water conflict and importance of multi-lateral mechanism to solve such conflicts. Moreover, to develop generation with rich sense of international cultural works, and understand social and cultural values by introducing students to modern and traditional aspects of various cultures.</p>							
[Course Goals]							
<p>メコン川の現状、将来に向けた課題を理解する 国際河川のコンフリクトをテーマに、国際問題、さらに、その調整の難しさを理解する 国際問題に対する日本からの貢献の可能性を考える 自己の将来のキャリア形成の動機づけを行う ベトナムの気候、風土、歴史、文化などを理解する 英語でのプレゼンテーション能力を高める</p>							
[Course Schedule and Contents]							
<p>1. 事前講義 (7-8月に3回)</p> <p>1) Introduction to Water Diplomacy 2) State of the Mekong River Basin</p>							
							
<small>Continue to ILASセミナー（海外）：Conflict Management(Global Water Issues)(2) ↓ ↓ ↓</small>							

ILASセミナー（海外）：Conflict Management(Global Water Issues)(2)	
<p>3) Water management in the Mekong Delta and the Development Projects</p> <p>2. 現地研修 (9月に10日間)</p> <p>1) Lectures</p> <ul style="list-style-type: none"> Impacts of Climate Change on the Mekong River Basin Water Resources Integrated Management and Master Plan of the Mekong Delta <p>2) Field survey and practices</p> <ul style="list-style-type: none"> Water resources management in the Mekong River Delta Water quality in the coastal zones of the Mekong Delta <p>3) Presentation</p> <ul style="list-style-type: none"> Making report and presentation at the workshop 	
	
[Class requirement]	
<p>参加者は、海外渡航資金を工面できること。必要な資金の詳細は4月に行われるオリエンテーションの時に説明する。参加者は自己責任の原則を自分と両親が了承し、必要な保険等を掛けること、海外滞在リスクを充分認識し自らを律することができること。受講定員を超える受講申込があった場合は、選考を行う。受講希望者は、事前講義へ必ず参加すること。安全講習の受講、学研災付帯海外留学保険への加入が確認できない学生は、ILASセミナー（海外）に参加することはできません。</p>	
[Method, Point of view, and Attainment levels of Evaluation]	
事前講義、現地研修への参加状況および研修レポートにより総合的に判断する。	
[Textbook]	
Not used	
[Reference book, etc.]	
(Reference book)	
Shafiqul Islam, Lawrence E. Susskind 『Water Diplomacy: A Negotiated Approach to Managing Complex Water Networks』 (RFF Press) ISBN:978-1617261039 (国際的な水問題の解説)	
Ben Boer, Philip Hirsch, Fleur Johns, Ben Saul, Natalia Scurrah 『The Mekong: A Socio-legal Approach to River Basin Development』 (Routledge) ISBN:978-1138788459 (メコン川の現状とコンフリクト問題の解説)	
その他必要に応じてプリントを配布する。	
(Related URL)	
http://www.kyoto-u.ac.jp/ja/international/events_news/office/kyoiku-suishin-gakusei-shien/kokusai-kyoiku-koryu/news/2015/150911_3.html (2015年の実施報告(京大HP)) http://en.tlu.edu.vn/Home.aspx (Thuy Loi 大学(ベトナム水資源大学))	
[Regarding studies out of class (preparation and review)]	
<p>メコン川の現状、将来に向けた課題を参考書などをもとに理解する。 国際河川のコンフリクトの問題と解決に向けた取り組みについて、メコン川やナイル川を例に理解する。 英語でのプレゼンテーション資料の作成について予習しておく。</p>	
[Others (office hour, etc.)]	
<p>本科目は、英語による討議、現地でのプレゼンテーションなど、学生側からの積極的な参加を期待している。</p>	
<small>Continue to ILASセミナー（海外）：Conflict Management(Global Water Issues)(3) ↓ ↓ ↓</small>	

ILASセミナー（海外）：Conflict Management(Global Water Issues)(3)

1 回生のみならず、2 回生以上の意欲ある学生の参加を大いに歓迎する。
採点報告日（8月中旬）以降に実施するため、成績報告が遅れる場合があります。

First semester of the 2019 academic year

Courses with codes highlighted in red meet two periods a week for a total of 2 units.

	Mon	Tue	Wed	Thu	Fri
1	H708001 Introduction to Educational Studies I-E2	N251001 Advanced Course of Electromagnetism-E2	H155001 Logic I-E2:Sentential Logic and Deductions	H937001 Economy and Society II-E2	N162001 Function Theory of a Complex Variable-E2
			H381001 Introduction to Linguistic Science-E2	W231001 Digesting Scientific English-E3	
			H727001 Pedagogy I-E2		
			H934001 Introduction to Economics-E2		
2	N371001 Essentials of Basic Physical Chemistry-E2	H281001 Japanese History I-E2	H149001 The History of Eastern Thought I-E2	H598003 Cultural Anthropology I-E2	H275002 Western History I-E2
	N917001 Fundamentals of Neuroscience-E2	H281002 Japanese History I-E2	H161001 Japanese Philosophy I-E2	H802002 Human Geography-E2	N174001 Quest for Mathematics I-E2
	N493001 Basic Plant Science-E2	H275001 Western History I-E2	H281003 Japanese History I-E2	N261001 Fundamental Physics A-E2	N106001 Advanced Linear Algebra
	N905001 Introduction to Ecology-E2	H277001 Introduction to World Religions-E2	H283001 Japanese Intellectual History I-E2	N272001 Fundamentals of Materials I-E2	N923001 Fundamentals of Cell and Molecular Biology-E2
		H287001 Japanese Popular Culture-E2	H715001 Advanced Lecture for Pedagogy I-E2	N368002 Basic Organic Chemistry I-E2	N533001 Introduction to Earth Science A
		H929001 Japanese Politics-E2	H808001 Food and Globalization I-E2	T052001 Introduction to Algorithms-E2	T056003 Practice of Basic Informatics-E2
		N178001 Mathematical Description of Natural Phenomena-E2	H935001 Principles of Economics-E2	Y221001 Sustainable Forest Environment-E2	T049001 Introduction to Coding Theory and Cryptography-E2
		N174002 Quest for Mathematics I-E2	H931001 Modern Classics in Political Science-E2		
		N262001 Introduction to Modern Optics-E2	N248001 Introduction to Cosmology-E2		
		N492001 Principles of Genetics-E2	N157001 Calculus with Exercises A		
		N159001 Linear Algebra with Exercises A	W229001 Business Thinking-E3		
		N157001 Calculus with Exercises A	W227001 Advanced Scientific English-E3(Debate) *Year-Round		
		N809001 Basic Data Analysis-E2	Y208001 Chemistry · Society and Environment-E2		
		W228001 Business English-E3			
3	H709001 Introduction to Educational Psychology I-E2	H151001 History of Modern Science-E2	H163001 Philosophy of Nature I-E2	H936001 Economy and Society I-E2	H589001 Environmental Anthropology-E2
	H598001 Cultural Anthropology I-E2	H721001 Sociology I-E2	H806001 Introduction to Urban Planning-E2	N928001 Introduction to Biological Data Analysis-E2	H930001 Introduction to European Law-E2
	N255001 Elementary Course of Physics A-E2	H813001 Contemporary Japanese Architecture-E2	H938001 Political Science I-E2	Y209001 Human-environmental Interactions-E2	N804001 Introductory Statistics-E2
	N253001 A Guide to Modern Physics A-E2	H591001 Introduction to Globalization I-E2	N494001 Introductory Plant Ecology-E2		U148001 Structures and Mechanisms of Human Movement-E2
	N365001 Basic Physical Chemistry (thermodynamics)-E2	N168001 Mathematical Description of Natural Phenomena	N374001 Fundamental Chemical Experiments-E2		W226001 Scientific English II-E3(Presentation & Discussion) *Year-Round
	N373001 Equilibrium and Energy-E2:A Macroscopic Perspective of Chemistry	N165001 Honors Mathematics B-E2	N374003 Fundamental Chemical Experiments-E2		
	N911001 Basic Biology-E2	N260002 Physics for All-E2	T050001 Processing and Analyzing Data I-E2:Shell-based data processing fundamentals		
	N159001 Linear Algebra with Exercises A	N254001 Analytic Dynamics-E2			
	U104001 Basics of the Human Body-E2	N366003 Basic Physical Chemistry (quantum theory)-E2			
	Y225001 Introduction to Biogeochemistry-E2	N363001 Introduction to Inorganic Chemistry A-E2			
		N491001 Introduction to Molecular Biotechnology-E2			
	U149001 Introduction to Basic Concepts of Health Psychology-E2:Communication Issues and Decision-making in Patient Care				

First semester of the 2019 academic year

Courses with codes highlighted in red meet two periods a week for a total of 2 units.

	Mon	Tue	Wed	Thu	Fri
4	N498001 Animal Behavior-E2	H159001 Theories of Religion in the Social Sciences-E2	H383001 Intercultural Communication I-E2	H598004 Cultural Anthropology I-E2	H712001 Introduction to Sociological Observation-E2
	U155001 Psychopathology I-E2	H722001 Introduction to Comparative Psychology-E2	H943001 International History 1900 to the Present-E2	H814001 Introduction to Urban Geography-E2	H927001 Law and Culture in Japan-E2
		H724001 Introduction to Globalization Studies-E2	N565001 Introduction to General Astronomy-E2	N175001 Quest for Mathematics II-E2	
		N383001 Chemistry in Solar Energy Conversion-E2	N374001 Fundamental Chemical Experiments-E2	N208001 Fundamental Physics A	
		N559001 Introduction to Hydrology-E2	N374003 Fundamental Chemical Experiments-E2	N207001 Physics of Wave and Oscillation	
		T008001 Practice of Basic Informatics		N378001 Revisiting Basic Organic Chemistry II-E2	
		W230001 Negotiation-E3		N381001 Revisiting Basic Physical Chemistry (thermodynamics)-E2	
				N361001 Organic Chemistry of Life-E2	
				N563001 How the Earth Works I-E2:Environmental Change	
				N813001 Data Analysis Practice I-E2	
				U136001 Basic Biology and Metabolism-E2	
				Y213001 Introduction to Sustainable Development-E2	
				Y210001 Insect-human Interactions-E2	
			T020001 Programming Practice (Matlab)-E2		
5	N496001 Conservation Biology-E2	N368001 Basic Organic Chemistry I-E2	N169001 Advanced Calculus I-Vector Calculus	H739001 Psychoanalysis-E2	N913001 Introduction to Behavioral Neuroscience A-E2
	T018001 Information and Society-E2	N904001 Chromosome Biology-E2	T051001 Basic Informatics-E2	N931001 Introduction to Biological Rhythms-E2	T056002 Practice of Basic Informatics-E2
		N925001 Biological Sciences through Scientific Articles I-E2		T020001 Programming Practice (Matlab)-E2	U145001 Biology and Sociology of Chronic Diseases-E2
		T057002 Fundamentals of Artificial Intelligence-E2			

Second semester of the 2019 academic year

Courses with codes highlighted in red meet two periods a week for a total of 2 units.

	Mon	Tue	Wed	Thu	Fri
1	H711001 Introduction to Educational Studies II-E2		H156001 Logic II-E2:Quantificational Logic and Deductions	W232001 Scientific Writing and Presenting in English-E3	
			H382001 Introduction to Japanese Linguistics I-E2		
			H728001 Pedagogy II-E2		
			N560001 Introduction to Earth Science B-E2		
2	N273001 Fundamentals of Materials II-E2	H282001 Japanese History II-E2	H150002 Science of Religion I-E2	H802003 Human Geography-E2	H274002 Western History II-E2
	N366002 Basic Physical Chemistry (quantum theory)-E2	H282002 Japanese History II-E2	H162001 Japanese Philosophy II-E2	N369002 Basic Organic Chemistry II-E2	N924001 Introduction to Plant Science-E2
	N918001 Introduction to Human Physiology-E2	H274001 Western History II-E2	H282003 Japanese History II-E2	N384001 Outline of Chemistry I(Its History and Fundamentals)-E2	
	N906001 Introduction to Evolution-E2	H280001 Introduction to Asian Societies-E2	H284001 Japanese Intellectual History II-E2	N566001 Science on Water, Soil and Ecosystems-E2	
		H733001 Disaster and Culture-E2	H716001 Advanced Lecture for Pedagogy II-E2	N558001 Introduction to Mineral Resources-E2	
		H928001 Japan's Political Economy-E2	H718001 Introduction to Society and Community Studies-E2	Y212001 Introduction to Food Sustainability-E2	
		H944001 An International History of East Asia 1839-1945-E2	H809001 Food and Globalization II-E2		
		N271001 Elementary Course of Physics B-E2	N249001 Theory of Special Relativity-E2		
		N490001 Introduction to Biochemistry-E2	N912001 Basic Genetic Engineering-E2		
		N490002 Introduction to Biochemistry-E2	N562001 Field Earth Science-E2		
		N804002 Introductory Statistics-E2	N158001 Calculus with Exercises B		
		N158001 Calculus with Exercises B	T048001 Fundamentals of Discrete Optimization-E2		
		N160001 Linear Algebra with Exercises B			
		T052002 Introduction to Algorithms-E2			
3	H710001 Introduction to Educational Psychology II-E2	H154001 Philosophy of Modern Science-E2	H164001 Philosophy of Nature II-E2	H815001 Topics in Cultural Anthropology I-E2	H801001 Environmental Histories of South Asia-E2
	H598002 Cultural Anthropology I-E2	H725001 Introduction to Social Research-E2	H717001 Introduction to Risk Communication-E2	H599001 Topics in Human Geography VII-E2(Population and Mobility)	N814001 Data Analysis Practice II-E2
	N367001 Chemistry of Sustainable Energy-E2	H812001 Theory of Landscape Design-E2:House and Gardens of Kyoto	H939001 Political Science II-E2	N264001 Fundamental Physics B-E2	U135001 Introduction to Medical Psychology-E2
	N372001 Introduction to Surface Chemistry-E2	H592001 Introduction to Globalization II-E2	N495001 Principles of Horticulture-E2	N365002 Basic Physical Chemistry (thermodynamics)-E2	
	N901001 Introduction to Genetics and Evolution-E2	N161001 Honors Mathematics A-E2	N256001 Elementary Experimental Physics-E2	N927001 Introduction to Computational Molecular Biology-E2	
	N929001 Introduction to Plant Physiology-E2	N211001 Advanced Dynamics	N374002 Fundamental Chemical Experiments-E2	N537001 Introduction to Engineering Geology	
	N160001 Linear Algebra with Exercises B	N260001 Physics for All-E2	N374004 Fundamental Chemical Experiments-E2		
	U106001 Introduction to Lifestyle Related Diseases-E2	N269001 Introduction to Plasma Science-E2	N158001 Calculus with Exercises B		
		N364001 Introduction to Inorganic Chemistry B-E2			
		N490003 Introduction to Biochemistry-E2			
		N490004 Introduction to Biochemistry-E2			
	U154001 Cultural Aspects of Health Care-E2				
	W228002 Business English-E3				

Second semester of the 2019 academic year

Courses with codes highlighted in red meet two periods a week for a total of 2 units.

	Mon	Tue	Wed	Thu	Fri
4	H926001 Jurisprudence-E2	H279001 Religion in Contemporary Society-E2	H287002 Japanese Popular Culture-E2	H815002 Topics in Cultural Anthropology I-E2	
	N497001 Comparative Cognition-E2	H740001 Psychoanalysis II-E2	H384001 Intercultural Communication II-E2	H814002 Introduction to Urban Geography-E2	
		H723001 Introduction to Primate Behavior and Cognition-E2	N257001 Introduction to Statistical Physics-E2	N175002 Quest for Mathematics II-E2	
		H726001 Sociology of Work and Organizations-E2	N256001 Elementary Experimental Physics-E2	N209001 Fundamental Physics B	
		H734001 Introduction to Ritual Studies-E2	N374002 Fundamental Chemical Experiments-E2	N362001 Everyday Life Chemistry-E2	
		N270001 Introduction to Quantum Physics-E2	N374004 Fundamental Chemical Experiments-E2	N377001 Revisiting Basic Organic Chemistry I-E2	
		T015001 Basic Informatics		N382001 Revisiting Basic Physical Chemistry (quantum theory)-E2	
		Y214001 Natural Disaster Science-E2		N380001 Chemical Kinetics and Molecular Reaction Dynamics-E2	
				N813002 Data Analysis Practice I-E2	
				T019001 Information Network-E2	
5	N564001 How the Earth Works II-E2:Earth's History	N369003 Basic Organic Chemistry II-E2	N170001 Advanced Calculus II-Differential Equations	T047001 Information Literacy for Academic Study-E2	N914001 Introduction to Behavioral Neuroscience B-E2
	T018002 Information and Society-E2	N907001 Practical Computing for Biologists-E2	T057001 Fundamentals of Artificial Intelligence-E2		N932001 Introduction to Molecular Cell Biology-E2
	T058001 Programming Practice (R)-E2	N926001 Biological Sciences through Scientific Articles II-E2			T056001 Practice of Basic Informatics-E2
					U144001 Nutrition and Health-E2

Intensive lecture

N499001 Zoo Biology-E2
N561001 Advanced Practice of Earth Science-E2

ILAS Seminars /1st semester of the 2019 academic year

	Mon	Tue	Wed	Thu	Fri
2				Z002043 ILAS Seminar-E2:Minds and Machines-Can a Machine Think (心と機械)	
4				Z002080 ILAS Seminar-E2 :Introduction to Probability (確率入門)	
5	Z002075 ILAS Seminar-E2:Global Environmental Issues (地球環境問題)	Z002071 ILAS Seminar-E2:Clinical and ethical issues within palliative care- the European Context (ヨーロッパにおける緩和ケア)	Z002010 ILAS Seminar-E2:First Step to Qualitative Research Methods - Field Surveys and Data Analysis (質的研究へのはじめの一步 - フィールド調査とデータ分析)	Z002041 ILAS Seminar-E2:Encounters with modern arithmetic (現代整数論との出会い)	Z002001 ILAS Seminar-E2:Contracts and Law in Modern Society (現代社会における契約と法)
	Z002002 ILAS Seminar-E2:Introduction to Computation and Logic (計算と論理への入門)	Z002040 ILAS Seminar-E2:Dams and Reservoirs (ダムと貯水池)	Z002008 ILAS Seminar-E2:Frontiers in Theoretical Physics I (理論物理学最前線I)	Z002046 ILAS Seminar-E2:Ethical issues in Health sciences (健康科学における倫理的課題)	Z002027 ILAS Seminar-E2:Introduction to life science and scientific conversation (生命科学へのいざない)
	Z002048 ILAS Seminar-E2:Introduction to Engineering in Biology and Medicine (医工学の基礎)	Z002058 ILAS Seminar-E2:Food Systems in Asia (アジアにおける食農システム)	Z002016 ILAS Seminar-E2:Frontiers in Theoretical Physics II (理論物理学最前線II)	Z002004 ILAS Seminar-E2:Frontiers of Earthquake Science (地震学の最前線)	Z002069 ILAS Seminar-E2:Let's create 3D computer animations (三次元アニメーションを作ってみよう)
	Z002026 ILAS Seminar-E2:Methods in Ecology and Natural History (生態学・自然史学の手法)	Z002078 ILAS Seminar-E2:Frontiers in psychopathology (精神病理学のフロンティア)	Z002012 ILAS Seminar-E2:Global Health (グローバルヘルス)	Z002019 ILAS Seminar-E2:How to Read a Scientific Paper (英語科学論文の読み方)	Z002021 ILAS Seminar-E2:Logic・critical thinking and argument (自然科学・工学に関する論理的・批判的思考法と議論)
	Z002003 ILAS Seminar-E2:The wonderful world of quantum physics (素晴らしい量子物理の世界)	Z002079 ILAS Seminar-E2:Nanostructured Materials (ナノ組織材料)	Z002014 ILAS Seminar-E2:Introduction to Human Genetics and Genetic Disease (人類遺伝学と遺伝病入門)	Z002022 ILAS Seminar-E2:Introduction to Stem and iPS Cells (幹細胞とiPS細胞入門)	
	Z002039 ILAS Seminar-E2:Topics in Frontier Physics (現代物理学の最先端)	Z002073 ILAS Seminar-E2:Robots in Japanese Popular Culture (日本の大衆文化のなかのロボット)	Z002020 ILAS Seminar-E2:Project-based data analysis seminar (プロジェクト型データ解析)	Z002017 ILAS Seminar-E2:Introduction to Biomedical Presentation and Debate (医学英語入門-プレゼンテーションとディベート)	
		Z002067 ILAS Seminar-E2:The Life and Work of Albert Einstein (アルバート・アインシュタインの生涯と業績)	Z002063 ILAS Seminar-E2:Wearable technology (ウェアラブル技術入門)	Z002018 ILAS Seminar-E2:Introduction to the biology of nematodes (線虫の生物学入門)	
		Z002031 ILAS Seminar-E2:What are Liquids? Answers from Physics, Chemistry and Engineering (液体は何? 液体の基礎物理学と化学)		Z002062 ILAS Seminar-E2:Introduction to robotics - a practical approach (ロボット工学入門-実践編)	
				Z002068 ILAS Seminar-E2:Programming for data analysis (データ解析のためのプログラミング)	
				Z002056 ILAS Seminar-E2:Regional Disaster Prevention (地域防災学)	
				Z002025 ILAS Seminar-E2:Smart Materials (Innovations in Materials Chemistry) (スマートマテリアル-材料化学の革新)	
				Z002050 ILAS Seminar-E2:The Invisible Universe (不可視の宇宙)	
				Z002024 ILAS Seminar-E2:Urban Pest Management (都市害虫の管理)	
			Z002052 ILAS Seminar-E2:Wonders of semiconductor (半導体のふしぎ)		

Intensive

Z002060	ILAS Seminar-E2:Introduction to anthropological thinking (人類学的アプローチ概論)
Z002061	ILAS Seminar-E2:Introduction to cross-cultural communication (異文化コミュニケーション入門)
Z003006	ILASセミナー (海外) : Conflict Management[Global Water Issues]

ILAS Seminars /2nd semester of the 2019 academic year

	Mon	Tue	Wed	Thu	Fri
2				Z002042 ILAS Seminar-E2:Introduction to Computational Neuroscience (計算論的神経科学入門)	
5	Z002029 ILAS Seminar-E2:Consumer Society and Law (消費生活と法)	Z002059 ILAS Seminar-E2:Food Systems in Asia (アジアにおける食農システム)	Z002064 ILAS Seminar-E2:An introduction to programming for engineers (エンジニア向けのプログラミング入門)	Z002034 ILAS Seminar-E2:Introduction to the biology of nematodes (線虫の生物学入門)	Z002038 ILAS Seminar-E2:Biochemistry Principles (生化学の塾)
	Z002049 ILAS Seminar-E2:Discussions in Biomechanics and Biophysics (バイオメカニクス・生物物理セミナー)	Z002013 ILAS Seminar-E2:How to Study Atoms and Molecules with the Help of Light (光を使って原子や分子を調べる)	Z002030 ILAS Seminar-E2:Socio-epidemiology in health research (ヘルスリサーチにおける社会疫学)	Z002065 ILAS Seminar-E2:An introduction to programming for everyone (一般向けのプログラミング入門)	Z002070 ILAS Seminar-E2:Let's simulate human movement (コンピューターで人を動かしてみよう)
	Z002036 ILAS Seminar-E2:Introduction to Bird Study - Ornithology (鳥類研究のすすめ)	Z002074 ILAS Seminar-E2:Radical Art and Politics in Japan 1960-70 (1960年から70年の日本における前衛芸術と政治)		Z002033 ILAS Seminar-E2:Biochemistry Principles (生化学の塾)	Z002076 ILAS Seminar-E2:Technology and Modern Society - A Historical Perspective (日本の工業技術史と現代社会)
		Z002072 ILAS Seminar-E2:Understanding and critical appraisal of qualitative research methods in health care (ヘルスケアにおける質的研究)		Z002045 ILAS Seminar-E2:Critical thinking and Communication skills (批判的思考とコミュニケーション・スキル)	
				Z002037 ILAS Seminar-E2:Earthquakes & Volcanoes - Prediction and Hazards (地震・火山噴火の予知及び防災)	
				Z002057 ILAS Seminar-E2:Geo-Disaster Risk Reduction and Prevention (土砂災害の防災・減災学)	
				Z002035 ILAS Seminar-E2:Insect and ecosystem sustainability (昆虫と持続可能な生態系)	
			Z002066 ILAS Seminar-E2:Introductory Bioinformatics (バイオインフォマティクス入門)		
			Z002053 ILAS Seminar-E2:What is light? (光って何?)		

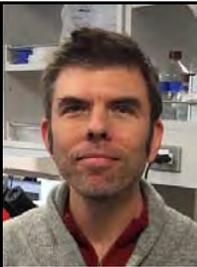
Instructors 教員紹介

	<p>ALCANTARA AVILA, Jesus Rafael</p> <p>Senior Lecturer Graduate School of Engineering</p>	<ul style="list-style-type: none"> ● Revisiting Basic Physical Chemistry (thermodynamics)-E2 (page 171) ● Revisiting Basic Physical Chemistry (quantum theory)-E2 (page 172) ● Fundamental Chemical Experiments-E2 (page 164,165)
<p>I was born in Leon (Mexico). I did a BSc. and MSc. in Chemical Engineering in Mexico. When I was in 4th year University, I joined in an exchange program, and I studied at West Virginia University (USA) for one semester. At that time, I made many friends from Japan, so I became very interested in Japan. I came to Japan to pursue a Ph.D. degree in Chemical Engineer. After getting my degree, I started to work at Kyoto University as a fellow researcher; then I worked at Tokushima University as an assistant professor for five years. I came back to Kyoto University in 2018.</p> <p>My research interests include the enhancement of chemical processes by using optimization tools targeting sustainable manufacturing and mass transfer in multiphase systems with or without chemical reactions. I am very passionate about chemistry, mathematics, and making things. I also like cycling and outdoor activities. I hope to see you soon in my classes or around campus!</p>		
	<p>ANAGNOSTOU, Despoina</p> <p>Associate professor Graduate School of Medicine</p>	<ul style="list-style-type: none"> ● Introduction to Basic Concepts of Health Psychology-E2:Communication Issues and Decision-making in Patient Care (page 248) ● ILAS Seminar-E2:Clinical and ethical issues within palliative care- the European Context (ヨーロッパにおける緩和ケア) (page 280) ● Cultural Aspects of Health Care-E2 (page 252) ● ILAS Seminar-E2:Understanding and critical appraisal of qualitative research methods in health care (ヘルスケアにおける質的研究) (page 328)
<p>I recently joined Kyoto University as an associate professor at the Graduate School of Medicine. With a first degree in Nursing and clinical experience in various settings in Athens, Greece, I moved to the UK to enhance my knowledge. I completed an MSc in Advanced Nursing Practice from the University of Edinburgh, before obtaining my PhD from King's College London. I then worked as a researcher in the UK academia in the field of palliative care. My research interests include decision-making in palliative care, measuring quality of care, support systems for families and patients, and transcultural aspects of end-of-life care.</p> <p>Courses: Introduction to Health Psychology introduces concepts of integration of psychosocial and biomedical models of care and explores the impact of health psychology on the treatment of chronic illness, pain management and palliative care. Cultural Aspects of Health Care will enhance students' knowledge about the interplay between culture and health care and will examine concepts of medical authority, treatment compliance, decision-making, and communication styles in different cultural contexts. Palliative care within the European context will enable students to develop awareness of international approaches to palliative care and the European attitudes to current ethical challenges. Critical appraisal of qualitative research will provide students with critical understanding of a range of qualitative research methodologies and of their application in health care.</p> <p>The courses are designed to be interactive with short lectures, class discussion, student-led sessions and a variety of material, so that students are can engage actively in the class.</p>		
	<p>ANDERSON, James R.</p> <p>Professor Graduate School of Letters</p>	<ul style="list-style-type: none"> ● Introduction to Comparative Psychology-E2 (page 62) ● Digesting Scientific English-E3 (page 260) ● Introduction to Primate Behavior and Cognition-E2 (page 61) ● Scientific Writing and Presenting in English-E3 (page 261)
<p>As a comparative psychologist, I am interested in various aspects of social behavior, learning and cognition in humans and other species, especially nonhuman primates. In the social domain, topics I have studied include the influence of dominance status in the context of competitive feeding tests, and the effects of brief separations and social tension on social and self-grooming.</p> <p>My studies in cognition have examined self-recognition and mirror-image reactions in various primate species including humans, and tool-use by macaques and capuchin monkeys. Other work involved training primates to control and memorize the expression of natural behaviors such as scratching, yawning, and facial expressions. I have also studied nonhuman primates' and human children's processing of nonverbal communicative signals; this work developed into studies of intentional communication (including deception) and understanding of third-party interactions.</p> <p>I am also interested in behavioral adaptations in natural environments, having conducted fieldwork on macaques, baboons, and chimpanzees. I also have a long-standing interest in environmental enrichment for zoo and laboratory-housed animals, having conducted and supervised studies of abnormal behaviors and the effects of providing inanimate objects, foraging substrates, and small swimming pools as enrichment for primates in captivity.</p>		

	<p>ARSENIY Aleksandrovich, Kuzmin Senior Lecturer Graduate School of Engineering</p>	<ul style="list-style-type: none"> ● Quest for Mathematics I-E2 (page 112) ● Elementary Course of Physics B-E2 (page 138) ● Introduction to Plasma Science-E2 (page 153) ● Introduction to Quantum Physics-E2 (page 152)
<p>Originally from Russia, I received my Ph.D. from Moscow Engineering and Physics University. There I studied plasma-material interactions. In Japan I worked as a researcher on two big experimental devices: spherical tokamak QUEST in Kyushu University and Large Helical Device in Gifu prefecture. These devices are devoted to the development of the electrical powerplants based on the thermonuclear fusion.</p> <p>In my introductory lectures for all majors, “Quest for Mathematics” and “Introduction to Plasma Science”, there will be no need for complicated computations and any students are welcome. I will explain main concepts of complex numbers and how to understand and to use them. In the “Introduction to Plasma Science” you will learn about various types of plasma and I will share some of my experiences. The lecture “Elementary Course of Physics B” is oriented for those who did not learn physics at high school. This course covers Electrostatics and Thermodynamics. The course “Introduction to Quantum Physics” covers development of quantum mechanics and will introduce essential concepts and tools, such as wave functions and Schrodinger equation.</p>		
	<p>BAARS, Roger C. Senior Lecturer Graduate School of Global Environmental Studies</p>	<ul style="list-style-type: none"> ● Human Geography-E2 (page 75,76) ● Introduction to Urban Geography-E2 (page 86,87)
<p>I am a Senior Lecturer at the Graduate School of Global Environmental Studies, Kyoto University. Originally from Hamburg (Germany), I have received my PhD in Human Geography from The University of Auckland, New Zealand. Before coming to Kyoto, I have held academic appointments at Goethe University Frankfurt (Germany) and The University of Auckland (New Zealand).</p> <p>I am interested in the relationships between social change and governance particularly as they relate to politically desired social orders, values and practices. My research agenda is organised along the three interrelated themes of spatial identity and belonging, social change and reproduction and new forms of affective environmental governance.</p> <p>My courses on Human and Urban Geography are concerned with the spatial organisation and transformation of human life. We will examine how most global phenomena are intrinsically spatial and how a geographical lens allows us to understand these global processes in a more comprehensive way.</p>		
	<p>BABER, William Associate professor Graduate School of Management</p>	<ul style="list-style-type: none"> ● Business English-E3 (page 256) ● Business Thinking-E3 (page 258) ● Negotiation-E3 (page 259)
<p>Will Baber has combined education with business throughout his career. His work has included economic development in the State of Maryland, language services in the Washington, DC area, supporting businessstarters in Japan, and teaching business students in Japan and Europe. Currently he is at Kyoto University teaching and researching negotiation and other topics as an Associate Professor in the Graduate School of Management. He is lead author of the 2015 textbook “Practical Business Negotiation”.</p>		

	<p>BARNETT, Craig Antony Associate professor Graduate School of Science</p>	<ul style="list-style-type: none"> ● Introduction to Ecology-E2 (page 206) ● ILAS Seminar-E2:Methods in Ecology and Natural History (生態学・自然史学の手法) (page 277) ● Introduction to Evolution-E2 (page 207) ● ILAS Seminar-E2:Introduction to Bird Study - Ornithology (鳥類研究のすすめ) (page 324)
<p>I obtained my first degree in Zoology from Victoria University of Wellington and my M.Sc. degree also in Zoology from the University of Canterbury in Christchurch, which are both in New Zealand. I then completed a Ph.D. in the United Kingdom at Newcastle University. Since completing my Ph.D., I have worked as a researcher and professor in many countries including the United States, Japan, New Zealand, and China. My current research interests include the evolution of aposematism and cheating, the adaptive significance of animal personalities, animal communication, the relations between animal's behaviour and their physiology, and life history evolution.</p> <p>I teach four courses for the Institute of Liberal Arts and Sciences: (1) Introduction to Ecology, (2) Introduction to Evolution, (3) Methods in Ecology and Natural History (MENH), and (4) Introduction to Bird Study (Ornithology). I emphasize the importance of critical thinking, problem-solving, and team-work in my courses and many class exercises may incorporate these aspects. My overall aim is to design courses that are interesting and topical and also provide students with an opportunity to learn new skills.</p>		
	<p>BAUTISTA, Julius Associate professor Center for Southeast Asian Studies</p>	<ul style="list-style-type: none"> ● Theories of Religion in the Social Sciences-E2 (page 25) ● Introduction to World Religions-E2 (page 38) ● Religion in Contemporary Society-E2 (page 40) ● Introduction to Asian Societies-E2 (page 39)
<p>Dr Julius BAUTISTA, an Australian of Filipino descent, is Associate Professor at the Center for Southeast Asian Studies, Kyoto University. He has been teaching courses on world religion and Asian culture since 2005, and has also published several books and journal articles that focus on the political and cultural dynamics or religious beliefs, rituals and institutions.</p> <p>A message to students: I believe that our understanding of some of the world's most crucial political and social problems is enhanced by a comparative examination of the world's religions. This is the basic premise that guides my teaching. I invite you to join me in studying the fundamental principles of religion through its artistic depictions, the stories of its main protagonists and its ritual expressions, among other aspects of faith. We shall also explore some of the scientific and philosophical theories that have characterized the attempt to makes sense of the human relationship with the divine, particularly in the Asian region. No prior knowledge of any religion or belief is required -- just an open mind and a willingness to discuss religion-related issues without fear or prejudice.</p>		
	<p>BAUCAMP, Anthony Tadeus Herve Senior Lecturer Graduate School of Engineering</p>	<ul style="list-style-type: none"> ● Advanced Course of Electromagnetism (page 141) ● Introduction to Modern Optics (page 145) ● Elementary Experimental Physics (page 136)
<p>I am an optical scientist working for the department of micro-engineering, with a background in theoretical and applied physics from top institutions in France, England and Japan. I have spent my career at the edge of optics fabrication, in particular X-ray imaging optics for astrophysics (such as the ASTRO-H space-mission).</p> <p>My lectures cover electromagnetics, optics, and experimental physics. Having worked 10 years in industry and 5 years in academia, I can give my students a strong theoretical foundation together with a practical approach to problem solving. I will share with you many experiences of applying scientific theories to solve engineering problems, and help you get ready for the "real-world" that awaits after graduation.</p>		

	<p>BHATTE, Pallavi Kamlakar Program-Specific Senior Lecturer Graduate School of Human and Environmental Studies</p>	<ul style="list-style-type: none"> ● Western History I-E2 (page 34,35) ● Western History II-E2 (page 36,37)
<p>Dr. Pallavi Bhatte is a lecturer in Western and Contemporary History at the Graduate School of Human and Environmental Studies of Kyoto University. She graduated from the Faculty of Commerce, University of Bombay and arrived in Japan in the year 2000. She received a Bachelor of Arts in Japanese Language at the Department of Asian Studies, Faculty of International Culture, Tenri University. Thereafter, she obtained her Master and Doctoral degrees from the Department of Cultural Coexistence, Graduate School of Human and Environmental Studies, Kyoto University.</p> <p>Current teaching duties include: Western History I; Western History II for the Liberal Arts & Science Courses under the Humanities and Social Sciences Group. ILAS Seminar: Contemporary History under the Seminar in Liberal Arts & Sciences Group. Introductory Seminar: Contemporary History for the Faculty of Integrated Human Studies Course.</p> <p>Research Interests: Contemporary History; Transnational History; South Asian History; Modern Indian History; British History; Empire; Imperialism; Colonialism; Nationalism; Nationalist Resistance Movements; Political History; Postcolonial Studies; 19th and 20th Century British Imperial and Commonwealth History; Diaspora Studies; Migration; Subaltern Studies; Colonial Discourse; South Asian Literature; World War I; Second World War; Interwar Years; Pan-Asianism; Japanese Studies</p> <p>Message to Students: Learning and teaching is reciprocal. Motivation comes from willingness to do something. Learning history is not about memorizing dates. These courses are aimed at instilling the ability to think critically, develop a historical consciousness to gain a better understanding of humanity, society, and contemporary politics. Students from diverse disciplines are encouraged to join.</p>		
	<p>BROWN, John Junior Associate professor Graduate School of Medicine</p>	<ul style="list-style-type: none"> ● Logic I-E2:Sentential Logic and Deductions (page 19) ● Processing and Analyzing Data I-E2:Shell-based data processing fundamentals (page 243) ● ILAS Seminar-E2:Project-based data analysis seminar (プロジェクト型データ解析) (page 295) ● Logic II-E2:Quantificational Logic and Deductions (page 20)
<p>I find it a joy every time a student "sees the light" and understands anew concept. In my classes, I hope that students repeatedly see the light and understand both the reasoning behind what I am teaching, and equally important, how to apply the reasoning forward to new problems. This is true for any of the classes I teach, which are currently data processing and logic. I hope that students come motivated to my classes, ready to push themselves to new levels, and walk out of my classes more skillful than then they entered. I also hope that students realize that failure and learning what not to do is also a part of the process in succeeding, and therefore students should be active participants in classes.</p> <p>While I am focused in the medical and biochemical sciences, I enjoy motivating discussions from students in engineering, law, literature, economics, or other disciplines. If you have data about your field but don't know what to do with it, then you've come to the right place to learn how to analyze it.</p>		
	<p>CANDEIAS, Marco Marques Junior Associate professor Graduate School of Medicine</p>	<ul style="list-style-type: none"> ● ILAS Seminar-E2:Introduction to Human Genetics and Genetic Disease (人類遺伝学と遺伝病入門) (page 294) ● ILAS Seminar-E2:Introduction to Stem and iPS Cells (幹細胞とiPS細胞入門) (page 303) ● Introduction to Biochemistry-E2 (page 192,193)
<p>Marco grew up in Portugal and DR Congo and did his graduate studies in France, where he obtained his PhD from the University of Paris 7, under the supervision of Robin Fahraeus who first described the human p53 isoform p53/47 (also known as delta40p53). Marco's PhD research led to the discoveries of the Internal Ribosome Entry Site (IRES) and the RNA non-coding functions in p53 mRNA. During his postdoctoral training and in collaboration between France's INSERM and Kyoto University, Marco further strengthened this new concept of mRNAs with non-coding trans-acting functions by showing that the p53 mRNA can sequester p53 protein's negative regulator MDM2 in the nucleolus. Marco is now a Junior Associate Professor in Kyoto University where he teaches Human Genetics and Genetic Disease, Developmental Biology and iPS Cells and Biochemistry. His most recent research interests include investigating the role of hotspot synonymous mutations and mRNA non-coding functions in cancer formation and development. For more information on Marco's research and educational activities please visit: areap53.com</p> <p>Message to the students: In the Human Genetics and Genetic Disease classes the students will learn about genetics from examples of human genetic diseases. In Developmental Biology and iPS Cells the students will learn the basics of human development in order to understand the principles and functionalities of Stem and iPS Cells. For both courses we will choose diseases of interest to the students and discuss and present, in group, their genetic bases or therapeutic strategies, respectively.</p>		

	<p>CARLTON, Peter Associate professor Graduate School of Biostudies</p>	<ul style="list-style-type: none"> ● Chromosome Biology-E2 (page 201) ● ILAS Seminar-E2:Introduction to the biology of nematodes (線虫の生物学入門) (page 306,307) ● Practical Computing for Biologists-E2 (page 202)
<p>Originally from the United States, I received my Ph.D. from the University of California at Berkeley, where I studied chromosomes and meiosis. I continued my studies as a researcher at UC San Francisco, where I began using advanced microscopy and image analysis tools that I still use daily in my own research. I came to Kyoto University in 2010 as a principal investigator in the Institute for Integrated Cell-Material Sciences, and now am located in the Graduate School of Biostudies.</p> <p>The combination of biological and computational experimentation has become an essential part of modern research. My classes will introduce you to fascinating questions in diverse areas of biology, from both the “wet” side (how does a worm grow from an egg? how do our cells divide?) and the “dry” side (how can we use computers to design changes in DNA, or see objects smaller than light itself?). Hands-on experience and opportunities to observe biology in action will be provided as much as possible.</p>		
	<p>CATT, Adam Alvah Senior Lecturer Graduate School of Letters</p>	<ul style="list-style-type: none"> ● The History of Eastern Thought I-E2 (page 21) ● Introduction to Linguistic Science-E2 (page 45) ● Science of Religion I-E2 (page 22) ● Introduction to Japanese Linguistics I-E2 (page 46)
<p>I grew up in rural Arkansas in the heart of the Ozark mountains. While this was a great place to spend my childhood, it wasn't until I was a freshman in college that I came into contact with people from other cultures and linguistic backgrounds. This experience prompted me to learn more about other languages, cultures, and religions. After spending three years in a Zen temple in Kyoto, I received my MA degree at Otani University in the field of Buddhist Studies. Most of my work involved Sanskrit, an important Indo-European language of India, and I became interested in how Sanskrit fit into the larger historical context of the Indo-European language family. I later received my MA and PhD in Indo-European historical linguistics from Kyoto University. My current research focuses on the history of the Indo-European languages, in particular the old languages of India and Iran, and how an understanding of these languages can help us interpret religious texts from ancient cultures.</p> <p>Languages are curious entities. As children, we have no choice about what language(s) we will speak, and even though we learn to speak our native tongue with fluency, we often have little or no conscious awareness of what we are doing. Linguistics seeks to shed light on this area to reveal what it is we know when we say we "know" a language. I hope that students who come to my classes leave with a greater sense of wonder and curiosity about language and an understanding of how central language is for interpreting texts from other cultures and times.</p>		
	<p>CHANG, Kai-Chun Junior Associate professor Graduate School of Engineering</p>	<ul style="list-style-type: none"> ● Mathematical Description of Natural Phenomena (page 109) ● Advanced Linear Algebra (page 119) ● Basic Informatics (page 229)
<p>Dr. Kai-Chun Chang is a Junior Associate Professor in the Department of Civil Engineering and Earth Resources Engineering, Kyoto University (KU). His main research interests are in bridge structural health monitoring, bridge dynamics and vibrations, and data analysis techniques.</p> <p>Chang received his Ph.D. degree from National Taiwan University (NTU) and worked at the same university as a postdoctoral researcher for two years. During his research career at NTU, he worked mainly on the vehicle-bridge interaction problems, especially on their application to extracting bridge dynamic characteristics. Currently he is working in the Lab of International Management of Civil Infrastructures, KU, and focusing on developing bridge structural health monitoring techniques and systems, solving bridge dynamics and vibrations problems, and many data-analyzing techniques that support the above tasks. He also worked in the Lab of Innovative Techniques for Infrastructures, KU, where his research interest expanded to elastic wave-based nondestructive inspections, especially for concrete structures.</p> <p>Chang’s lectures aim to bridge the gap between the courses in high school and university. In our classes, we have no complicated computations, but illustrative examples provided to link the high school mathematics with natural phenomena; no difficult vocabularies and grammars, but logical rules helpful to read and write scientific papers, and many others awaiting your discoveries.</p>		



CHAO, Zenas C.
 Junior Associate Professor
 Graduate School of Medicine

- Fundamentals of Neuroscience-E2 (page 197)
- ILAS Seminar-E2:Minds and Machines- Can a Machine Think (心と機械) (page 297)
- Introduction to Human Physiology-E2 (page 198)
- ILAS Seminar-E2:Introduction to Computational Neuroscience (計算論の神経科学入門) (page 332)

I have always been fascinated by the human mind, and curious about the possibility of a machine with human-like intelligence and consciousness. After graduating from college in Taiwan with degrees in Life Science and Chemistry, I went to Georgia Institute of Technology in the United States to study Biomedical Engineering. During my PhD, I grew neurons in a petri dish and connected them to a robot, and demonstrated that a robot with an artificial organic brain can learn purposeful behavior. After graduation, I came to Japan and joined RIKEN Brain Science Institute, then National Institute for Physiological Sciences, and now Kyoto University to study how to read minds of humans and monkeys and how to enable the controls of a robot or a computer by thoughts.

The classes I teach mostly surround the topics of the mind and the brain, such as “Minds and Machines- Can a Machine Think?”, “Introduction to Computational Neuroscience”, and “Fundamentals of Neuroscience”. During my time working in different disciplines (biology, chemistry, and engineering) and with different approaches (in vitro, in vivo, and in silico), I have learned that you can always learn new things if you are curious and passionate. So, I want to create an active learning environment where students from any background can enjoy my classes. Particularly, I will de-emphasize materials that have little connection to big picture ideas (those will be forgotten soon anyway!) and emphasize real-world assignments, where students learn by doing things relevant to the world outside the classroom.



COKER, Caitlin Christine
 Senior Lecturer
 Graduate School of Human and Environmental Studies

- Cultural Anthropology I-E2 (page 73,74)
- Topics in Cultural Anthropology I-E2 (page 77,78)

I am a cultural anthropologist specializing in dance anthropology as well as theories concerning human bodies and physical experience. Until now, my research has mainly focused on butō performers in Japan, specifically the performers who developed butō in the 1960s and 70s. Along with writing about butō, I am currently in a period of surveying cabaret-style shows and pole dance in Japan for my next research project. My research interest is in how dance is made and what that process suggests regarding our physical experience as bodies.

I teach two classes at this university: one is a general introduction to Cultural Anthropology and the other is a class specific to how the body, namely bodily experience, has been presented and theorized in Anthropology. The main objective of both classes is for the student to become able to consider phenomena from a multi-faceted and open-ended Anthropological way of thinking. I believe this skill will become a valuable tool for the student when considering the lives and perspectives of many different people.



COLLINS, Benoit Vincent Pierre
 Associate Professor
 Graduate School of Science

- Linear Algebra with Exercises A (page 107)
- Honors Mathematics A-E2 (page 121)
- Linear Algebra with Exercises B (page 108)

Profile: I studied mathematics at ENS Paris and got my PhD degree from Universite Paris 6 in France. Before arriving in Kyoto, I held postdoctoral positions and visiting positions in Japan, and permanent academic positions in France and Canada.

Message: For mathematicians, English has become the standard communication language. In my experience, many students from non-english speaking countries get their first exposure to mathematical english by the time they actually need to start research. A sudden dive into a new world of research and into in a new language simultaneously is definitely double challenge. Fortunately, most students overcome it, but difficulties to communicate appropriately one’s research at an international level sometimes remain.

One main purpose of my courses is to address this point by giving a chance to the students to get used to mathematics in English at an early stage, so that they can focus better on research in due time, without linguistic worries.

Excellent English skills are not a preliminary to join my class: I am not evaluating English skills, just mathematical skills — the contents and marking scheme are the same as the Japanese counterpart of my class. However, I expect that taking a mathematics class in English will be like killing two birds with one stone...

	<p>CROMIERES, Fabien Program-Specific Associate Professor Graduate School of Informatics</p>	<ul style="list-style-type: none"> ● Practice of Basic Informatics-E2 (page 228) ● Fundamentals of Artificial Intelligence-E2 (page 240,241) ● Information Literacy for Academic Study-E2 (page 242)
<p>I graduated from Kyoto University with a PhD in Computer Sciences in 2011. Since then, I have been working on various research projects related to NLP (Natural Language Processing). What is Natural Language Processing? It is an area of study concerned with processing human language with computers (for applications, think “Google Translate” or “Apple Siri”). One could say its ultimate goal is to make machines that “understand” human language, which is why it is considered a sub-domain of Artificial Intelligence. Like many other fields, Natural Language Processing has been recently revolutionized by new Neural Networks techniques commonly referred to as “Deep Learning”. The goal of the “Fundamentals of Artificial Intelligence” class will be to explain what is Deep Learning and how it is used to make computers that can recognize a cat in a picture or predict your mood given a tweet, for example. This class will try to cover a lot of content in a relatively short time, therefore you might need to review each lesson on your personal time as well. The goal will be that you get a concrete understanding of what is “Deep Learning” and not just a rough overview. Still, I will only assume knowledge of High-School mathematics from the students so that it is accessible to any motivated student.</p>		
	<p>CROYDON, David Associate Professor Research Institute for Mathematical Sciences</p>	<ul style="list-style-type: none"> ● Mathematical Statistics-E2 (page 125,126) ● ILAS Seminar-E2:Introduction to Probability (確率入門) (page 298) ● Second Course in Statistics-E2 (page 128) ● Function Theory of a Complex Variable-E2 (page 120) ● Quest for Mathematics I-E2 (page 111)
<p>Profile: I am a mathematician specialising in probability theory. Having completed my undergraduate studies at the University of Cambridge and doctorate at the University of Oxford, I spent twelve years at the University of Warwick. During this time, I enjoyed a number of academic visits to Japan, and am very happy to have recently joined the Kyoto University faculty.</p> <p>Message: As mathematicians, we revel in the beauty of our subject matter. Just as a gifted musician gains satisfaction from turning the technical notation written on the page into something that is a delight to listen to, it can be similarly rewarding for a mathematician to see a flow of ideas lead to its conclusion in the proof of a theorem. Unlike music, however, where even a non-expert can appreciate the end result, the output of a mathematician is not always so accessible. Thus, to help students understand the motivation for the fundamental mathematical techniques that will be introduced in my courses, I plan to include links between these and illustrative applications from the natural sciences, engineering, and also social science.</p>		
	<p>DANIELL, Thomas Professor Graduate School of Engineering</p>	<ul style="list-style-type: none"> ● Contemporary Japanese Architecture-E2 (page 81) ● ILAS Seminar-E2:Robots in Japanese Popular Culture (日本の大衆文化のなかのロボット) (page 286) ● Theory of Landscape Design-E2:House and Gardens of Kyoto (page 82) ● ILAS Seminar-E2:Radical Art and Politics in Japan 1960-70 (1960年から70年の日本における前衛芸術と政治) (page 327)
<p>Thomas Daniell holds a B.Arch with honors from Victoria University of Wellington, an M.Eng from Kyoto University, and a Ph.D from RMIT University. He is an external reviewer for ACSA (Association of Collegiate Schools of Architecture) and SAHANZ (Society of Architectural Historians of Australia and New Zealand), an Expert of International Standing for the ARC (Australian Research Council), and a founding board member of ADAN (Architectural Design Association of Nippon). Widely published, he is on the editorial boards of the architecture journals Mark, Volume, Log, and Enquiry: The ARCC Journal of Architectural Research. A two-time recipient of publication grants from the Graham Foundation for Advanced Studies in the Fine Arts, he is author of FOBA: Buildings (Princeton Architectural Press, 2005), After the Crash: Architecture in Post-Bubble Japan (Princeton Architectural Press, 2008), Houses and Gardens of Kyoto (Tuttle, 2010, second edition 2018), Kiyoshi Sey Takeyama + Amorphe (Equal Books, 2011), Kansai 6 (Equal Books, 2011), and An Anatomy of Influence (Architectural Association, 2018).</p>		

	<p>DE BRECHT, Matthew Senior Lecturer Graduate School of Human and Environmental Studies</p>	<ul style="list-style-type: none"> ● Programming Practice(Matlab)-E2 (page 233) ● ILAS Seminar-E2:Introduction to Computation and Logic (計算と論理への入門) (page 275) ● Information Network-E2 (page 239)
<p>My research interests span several fields, including computer science, artificial intelligence, cognitive neuroscience, mathematical logic, and general topology. The underlying theme of my research has been to better understand information and computation from various perspectives, from mathematically rigorous formulations to its realization in computers and the human brain.</p> <p>My first visit to Japan was in 2000, but I have been living here continuously since 2003. I received my bachelor's degree from the University of Texas at Austin in 2002, where I studied computer science and Japanese. From 2003 to 2005, I was employed in a research project to develop a neural network model to explain parts of the human visual attention system. I was a graduate student from 2005 to 2010 in the Informatics department of Kyoto University, where I studied formal models of inductive inference and its connections with universal algebra and topology. After receiving my PhD, I worked as a researcher to develop machine learning methods to analyze human brain activity measured non-invasively by MEG and fMRI. Meanwhile, I have also been continuing research on the relationships between computation, logic, and topology, with a particular interest in descriptive set theory and domain theory.</p>		
	<p>DE FELICE, Antonio Associate Professor Yukawa Institute for Theoretical Physics</p>	<ul style="list-style-type: none"> ● Introduction to Cosmology-E2 (page 154) ● ILAS Seminar-E2:Frontiers in Theoretical Physics I (理論物理学最前線 I) (page 291) ● Theory of Special Relativity-E2 (page 150)
<p>My profile: My name is Antonio De Felice. I am a cosmologist, who has worked in several countries: USA, UK, Belgium, Japan, Thailand, and now, once more in Japan. I have learned many things by knowing so many different cultures. By meeting so many nice people in my work and life. In my free time, I like cooking Southern Italian bread, and making cheese.</p> <p>My message: Cosmology is one of the most fascinating branch of theoretical physics. It tries to give a reason for the astonishing beauty of the cosmos, that we can already see by our own naked eyes, and an explanation for the evident majestic structure the universe endows. It studies the evolution of our universe, from its origins up to our time. In this course, I will give an introduction to this fascinating topic. We will study the big-bang model, its success and the most recent controversies in today's cosmological theories. I think that any student who is interested in understanding the beauty of our universe should attend this class. I will try to make it as exciting as it deserves to be, with your appreciated help.</p>		
	<p>DE ZOYSA, Menaka Senior Lecturer Graduate School of Engineering</p>	<ul style="list-style-type: none"> ● Introduction to Light Control-E2 (page 146) ● ILAS Seminar-E2:Wonders of semiconductor (半導体のふしぎ) (page 315) ● Fundamental Physics B-E2 (page 135) ● ILAS Seminar-E2:What is light? (光って何?) (page 341)
<p>I came to Japan after my high school. Finishing one year course of Japanese language at Tokyo University of Foreign Studies, I entered to the Kyoto University. I received the BSc., MSc. and Ph.D. degrees in Electronic Science and Engineering from the Kyoto University. After spending two years as a post-doctoral fellow, I joined the faculty of Kyoto University in 2014. My research focuses on light control to develop next generation optoelectronic devices such as high-power and high-quality lasers, high-efficiency solar cells and narrow-band thermal emission sources.</p> <p>To the students: During my lectures, I will introduce the fundamentals of light. To obtain a better understanding of the concepts, some experiments will also be carried out during the lectures. I will also share my knowledge with the students about the cutting-edge technologies of light control. Students who would like to learn the basics of light, optoelectronic devices (LEDs, lasers, solar cells etc.) and cutting-edge technologies of light, are welcome.</p>		

	<p>D'SOUZA, Rohan Ignatious Associate Professor Graduate School of Asian and African Area Studies</p>	<ul style="list-style-type: none"> ● History of Modern Science-E2 (page 23) ● Environmental Anthropology-E2 (page 79) ● Philosophy of Modern Science-E2 (page 24) ● Environmental Histories of South Asia-E2 (page 85)
<p>As an environmental historian, my early research and publications were devoted to discussing the emergence of modern flood control and water management in South Asia. At heart, most of my early efforts were aimed at debating the political and environmental consequences of large dams in the Asian sub-continent.</p> <p>In our contemporary globalized world, riven as it is by anxieties about global warming and abrupt climate change, scholarship today is drawn towards an interdisciplinary mood. The “two cultures” of science and the humanities are now more than ever required to find a shared vocabulary with which to debate political solutions and explore imaginations for sustainability at the planetary level.</p> <p>The courses in the History of Modern Science, Philosophy of Modern Science, Environmental Anthropology, and Environmental Histories of South Asia are intended to explore these big questions of our time by reviewing cutting edge perspectives in history, philosophy, ecology and anthropology.</p>		
	<p>ENESCU, Bogdan Dumitru Associate Professor Graduate School of Science</p>	<ul style="list-style-type: none"> ● How the Earth Works I-E2:Environmental Change (page 215) ● ILAS Seminar-E2:Frontiers of Earthquake Science (地震学の最前線) (page 301) ● How the Earth Works II-E2:Earth's History (page 216) ● ILAS Seminar-E2:Earthquakes & Volcanoes - Prediction and Hazards (地震・火山噴火の予知及び防災) (page 336)
<p>Profile: My field of study is Geophysics, in particular Earthquake Science. I got my Ph.D. degree from Kyoto University in 2004 and afterwards did research in Japan, Germany, and US. I am interested to understand the physics of earthquakes and find ways to reduce the earthquake risk.</p> <p>Message to students: During classes and seminars we will explore together how the Earth works. You are going to learn about scientific topics that are both fascinating and have an important social impact: the climate change and global warming, the formation of the Solar System and the Earth, the birth and evolution of Life. You will find out about frontier research topics in Earthquake & Volcano Science, as well as Disaster Prevention and Management. I welcome anyone interested to attend.</p> <p>Teaching style: English is nowadays the main language used to communicate Science. Nevertheless, it can be challenging at times to learn and communicate in a non-native language. I will therefore adjust lectures to address the learning needs of all students and use graphic-rich teaching materials during classes. Keywords will be provided in both English and Japanese.</p>		
	<p>EPRON, Daniel Professor Graduate School of Agriculture</p>	<ul style="list-style-type: none"> ● ILAS Seminar-E2 :Global Environmental Issues (地球環境問題) (page 274) ● Introduction to Biogeochemistry-E2 (page 264) ● Introduction to Plant Physiology-E2 (page 212) ● Programming Practice (R)-E2 (page 234)
<p>Daniel Epron is plant ecophysiologicalist. He has developed research projects related to the adaptation of trees to environmental changes, and to the carbon budget of forests and tree plantations, both in temperate and tropical areas, with a special attention to environmental controls and to carbon partitioning among ecosystem compartments. He has a long experience of teaching plant physiology and ecology to undergraduate and graduate students.</p> <p>To the students:</p> <p>The courses Daniel Epron give for the Institute of Liberal Arts and Sciences focus on plant physiology, biogeochemistry, global environmental issues and programming for statistical analyses using R, with a special attention to questions related to environment, agriculture and forestry. He is convinced that sound scientific knowledges, logical reasoning and rigorous analyses are required to propose appropriate policies and sustainable management options to address the major environmental issues facing our planet and jeopardizing our future.</p>		

	<p>FEUER, Hart Nadav Program-Specific Senior Lecturer Graduate School of Agriculture</p>	<ul style="list-style-type: none"> ● Food and Globalization I-E2 (page 89) ● ILAS Seminar-E2:Food Systems in Asia (アジアにおける食農システム) (page 282,283) ● Food and Globalization II-E2 (page 90)
<p>When I grew up in Portland, Oregon (USA), I met many immigrant families that encouraged me to learn languages, travel, and be a thoughtful person. This led me to study and live in many places, but especially in East Asia. Now as a specialist of Southeast Asian agriculture and food, I hope I can share with you how beautiful, healthy, and tasty the cuisines of this region are, and how important it is to understand and support the farmers who have made it possible.</p> <p>The lessons I teach, 'Food Systems in Asia' and 'Food and Globalization', explore history, economics, nature, and culture and will help students learn the skills to understand their own country's and other countries' food systems. My classes include interactive experiences tasting, smelling, and analyzing food and give students many chances to explore the exciting food movements such as organic, Fairtrade, local, artisanal, and hipster. My teaching draws on my background as a student and researcher in the USA, England, Germany, Israel, Cambodia and here in Kyoto. I hope this worldwide view brings students a unique and fun learning experience, and will also make you a bit hungry!</p>		
	<p>FLORES, Giancarlo Associate Professor Graduate School of Engineering</p>	<ul style="list-style-type: none"> ● Scientific English II-E3(Presentation & Discussion) (page 254) ● Introduction to Earth Science A (page 213) ● Practice of Basic Informatics (page 224) ● Introduction to Engineering Geology (page 220)
<p>If you were to drill a borehole in Asia through the other side of the world, and jumped in a-la-Mario-Bros, you'd end up in South America, where I'm from. The world is not really upside-down over there, and all physical forces work (basically) the same way. But, hopefully, my antipodean perspective will help you see the world in a different and—I wish—a more interesting way.</p> <p>Besides being an antipodeanean, I'm a Civil Engineer with practical construction and operational experience in the petroleum industry—having worked at Shell Oil for nearly a decade in Peru—and with research and academic experience in the geoenvironmental engineering area—having worked at Kyoto University for the last decade in Japan.</p> <p>While I teach several classes aimed at students of sciences and civil engineering, four of them are open to all students as part of the Liberal Arts curricula: “Introduction to Earth Science A”, “Introduction to Engineering Geology”, “Practice of Basic Informatics”, and “Scientific English II-E3”.</p> <p>In “Introduction to Earth Science A” and “Introduction to Engineering Geology” classes, you'll gain a basic understanding on how our planet behaves; In “Practice of Basic Informatics” class, you'll learn the basics on computer programming; And in “Scientific English II”, you'll learn how to present ideas in a powerful and convincing way. All of these classes, hopefully, will make of you a better professional, whatever your field. And if you learn to think in an antipodean way, even better yet!</p>		
	<p>FUSTIN, Jean Michel Associate Professor Graduate School of Pharmaceutical Sciences</p>	<ul style="list-style-type: none"> ● Basic Biology and Metabolism-E2 (page 253) ● Introduction to Biological Rhythms-E2 (page 199) ● Introduction to Molecular Cell Biology -E2 (page 200)
<p>Dr. Fustin graduated from The University of Namur (Belgium), then moved to Aberdeen (Scotland) where he obtained his PhD on seasonal rhythms in mammals. In 2008, he started a postdoc at the Graduate School of Pharmaceutical Sciences in Kyoto University. With the support of mentors of the faculty, he started his own independent Laboratory of Molecular Metabolism in 2018.</p> <p>Dr. Fustin has been active in circadian research since 2008 and has published 27 papers, 24 on circadian and seasonal rhythms in mammals. His breakthrough came in 2013, when he established a landmark in molecular biology by demonstrating the role mRNA methylation for the function of the biological clock, which became a highly-cited publication in Cell. Since then Dr. Fustin and his team have continued their productive investigations on the link between methyl metabolism and the biological clock, in collaboration with intercontinental laboratories. Through his lectures, Dr Fustin wants to communicate his passion for research to the new generation or researchers.</p> <p>The aim of the “Basic Biology and Metabolism” and “Introduction to Molecular Cell Biology” lectures is to give basic knowledge in how living beings function by looking at the most fundamental unit of Life: the cell. These two courses are especially tailored for students not familiar with biology, and students who are familiar with the subject but want to brush up their English.</p> <p>“Introduction to Biological Rhythms” will be taught assuming solid background knowledge in biology and physiology. It is tailored to students who wish to know more about the intimate relationship that exists between LIFE and TIME.</p>		

	<p>GAO, Si Senior Lecturer Graduate School of Engineering</p>	<ul style="list-style-type: none"> ● Fundamentals of Materials I-E2 (page 147) ● ILAS Seminar-E2 :Nanostructured Materials (ナノ組織材料) (page 285) ● Outline of Chemistry I(Its History and Fundamentals)-E2 (page 166) ● Fundamentals of Materials II-E2 (page 148)
<p>I received my Bachelor degree in materials physics from Lanzhou University, China in 2009, master and PhD degree in material science and engineering from Kyoto University in 2013 and 2016. Since 2016, I started working as a post-doctoral researcher in the department of materials science and engineering, Kyoto University. My research work has been focusing on understanding the relationship between microstructures and mechanical properties of the structural metallic materials such as steels and aluminum alloys, in order to design stronger and tougher metallic materials that are important to our social infrastructure.</p> <p>My lecture <Fundamental of Materials I & II> is a two-semester introductory course that gives concise but comprehensive knowledge of all main classes of materials: metals, polymers, ceramics and composites. The ILAS seminar <Nanostructured materials> aims to introduce the frontier research of the nanostructured metallic materials having various unexpected physical properties that the conventional metallic materials do not. <Elements, Matter and Materials> intends to introduce the chemical elements and matter in the natural world, as well as the man-made materials composed of those elements. I hope these courses will satisfy your curiosity and interests in materials science!</p>		
	<p>HEIM, Stephane Associate Professor Graduate School of Letters</p>	<ul style="list-style-type: none"> ● Sociology I-E2 (page 53) ● Introduction to Globalization Studies-E2 (page 63) ● Introduction to Social Research-E2 (page 64) ● Sociology of Work and Organizations-E2 (page 65)
<p>I received my PhD degree in Sociology at Strasbourg University (France) in 2011, and I am currently Associate Professor at the Faculty of Letters, Department of Sociology (since March 2015). Previously, I was Research Engineer at GERPISA (http://gerpisa.org/en), the international network of social scientists on the automotive industry hosted by Paris-Saclay University, ENS Cachan, France. I am, among others, member of the GERPISA's international steering committee, of the International Journal of Automotive Technology and Management's Editorial Board (http://www.inderscience.com/jhome.php?jcode=ijatm), and my current main research interests cover the development of Asian automotive industries, the Japanese higher education system, and the Japanese welfare regime.</p> <p>In the lecture Sociology I, we will explore the social construction of reality and society. In the lecture Introduction to Globalization Studies, we will focus on the economic, social and political dimensions of globalization. In the lecture Introduction to Social Research, students will learn the basic knowledge to become social scientists. In the lecture Sociology of Work and Organizations, we will put the emphasis on work as a central institution of our contemporary societies. In my courses, I aim at providing students with basic knowledge on each field, while enabling them to express themselves freely in English on each topic. I am looking forward to teaching these topics and learning from students in Japan.</p> <p>Link towards my homepage: https://kyouindb.iimc.kyoto-u.ac.jp/e/dA11S</p>		
	<p>HEJNA, James Professor Graduate School of Biostudies</p>	<ul style="list-style-type: none"> ● Basic Biology-E2 (page 188) ● ILAS Seminar-E2:How to Read a Scientific Paper (英語科学論文の読み方) (page 302) ● Introduction to Genetics and Evolution-E2 (page 187) ● Basic Genetic Engineering-E2 (page 189)
<p>Profile: James Hejna received his PhD in Biological Sciences at the University of California, Irvine. He is primarily interested in how cells maintain their genomes, and the diseases that result when these critical maintenance pathways are defective, but his interests are actually quite broad. He is active in teaching graduate students to effectively communicate their results in English. He joined Kyoto University in 2010.</p> <p>Message to students: My courses cover the basics of molecular and cellular biology, genetics, and an introduction to genetic engineering techniques and scientific literature. When I was an undergraduate student, many years ago, the power of genetic engineering was just beginning to revolutionize biology, and it is even more powerful and amazing now. I aim to convey the sense of excitement in a field where every week there is a novel discovery.</p> <p>Undergraduate students just entering Kyoto University may have better English skills than first-year graduate students! I hope to capitalize on your proficiency to build a strong foundation of basic biology with an English vocabulary. Even for students who don't continue in biology, I hope that the courses will train you to be good "followers" of biology, if not "practitioners", and that the courses will be valuable experiences.</p>		

	<p>HELMKE, Stefan Assistant Professor Research Institute for Mathematical Sciences</p>	<ul style="list-style-type: none"> ● ILAS Seminar-E2: The Life and Work of Albert Einstein (アルバート・アインシュタインの生涯と業績) (page 287)
<p>I am a researcher at the Research Institute for Mathematical Sciences. When I was a high school student, I thought I want to become a physicist with some strong interest in mathematics. But when I actually studied physics, I found out that my interests in mathematics were overwhelming, and so I became a mathematician with some strong interest in physics instead.</p> <p>In particular, Einstein's theory of General Relativity always fascinated me. Unfortunately, the subject is usually only presented to some more advanced science students with the necessary background in mathematics and physics, while it should be also of great interest to other students. I hope that my class, which is much less ambitious than a standard course in General Relativity, focusing more on the developments of geometry in the 19th century and the outer circumstances of Einstein's life, will fill this gap and make this beautiful theory more accessible to a wider audience.</p>		
	<p>HIJINO, Ken Associate Professor Graduate School of Law</p>	<ul style="list-style-type: none"> ● Japan's Political Economy-E2 (page 100) ● Japanese Politics-E2 (page 101) ● Modern Classics in Political Science-E2 (page 102)
<p>Lecturer profile: I am a political scientist with an MPhil and PhD in Japanese Studies from Cambridge University (UK) and a BA in East Asian history from Wesleyan University (USA) with a short career as Tokyo correspondent for the Financial Times of London. My current research interests are the organization of political parties, local government, and the ideas of legitimacy in political reform in Japan and elsewhere. My father is Japanese and my mother is Swedish. I have lived in numerous countries including Japan, Sweden, UK, USA, France, Taiwan, and China. I like walking, talking, thinking and eating, but usually not all at once.</p> <p>Japan's Political Economy in The Post-war Period: The following are clichés, but need to be repeated: To understand the present, you must understand the past. To avoid failures, you must analyze ones already made. To move forward, you must know where you came from. This applies not only in our own personal lives, but in the lives of nations. This course tries to understand Japan's political economy today by investigating its post-war history since 1945. It looks at how Japan's politics, economy, society, and foreign relations have evolved over the last seven decades. How did Japan recover from its post-war rubble and emerge as an economic superpower by the 1990s? Why did it drift into a deep economic and political crisis during the "Lost Decades"? How should Japan move out of this morass? If you are interested in these issues, this class may be for you.</p> <p>Japanese Politics in Comparative Perspective : Why do Japanese prime ministers change so often? Why are there so few female politicians in Japan? Why does Japan not have an influential environmental (Green) party, as in many other European countries? Why has the Liberal Democratic Party (LDP) been so strong throughout Japan's post-war history? Why is voting turnout so low for Japanese youth? Why is Tokyo becoming more crowded and wealthier as many rural areas are becoming more depopulated and poorer? These are all questions about Japanese politics that are best answered by comparing Japan's situation with those of other countries. If you are interested in the general process of politics in Japan and elsewhere, and the specific answers to the above questions, this class may be for you.</p> <p>Modern Classics in Japanese Politics: Reading an academic essay or book in a foreign language is challenging and frustrating at times. But an engaged and critical reading is highly rewarding, particularly if the work is one that has survived and been identified as a "classic" in its field. This small seminar-type class will guide you in how to read and question classic texts about politics and democracy. What is democracy? Why does it seem to fail so often? How can we make it work better? The books we will read are some of the most ambitious responses to these difficult questions. By analyzing and discussing these texts, you will have a chance to improve your English reading, writing, and presentation abilities.</p>		
	<p>ISLAM, A K M Mahfuzul Senior Lecturer Graduate School of Engineering</p>	<ul style="list-style-type: none"> ● Mathematical Description of Natural Phenomena-E2 (page 110) ● Physics for All-E2 (page 143) ● Practice of Basic Informatics-E2 (page 226) ● ILAS Seminar-E2 :Technology and Modern Society - A Historical Perspective (日本の工業技術史と現代社会) (page 344)
<p>My research field is in large-scale integrated circuit. My research interest is in exploring new circuit theories for low-power operation, understanding the noise behavior of MOS transistors and how to design with the noisy transistors for high reliability. We design analog and digital circuits, do statistical analysis, analyze electromagnetic interference, and measure fabricated chips.</p> <p>I came to Japan in 2003 after my high school. Since then, I have been living in Japan. I went through Japanese language school, Oita national college of technology, Kyoto University and the University of Tokyo. I obtained by bachelor, masters and PhD all from Kyoto University. From 2015 to 2018, I have been a research associate at the department of Informatics and Electronics. I have a Junior Associate Professor since October, 2018.</p> <p>I am passionate about philosophy. In my courses, I will try to visually present the concepts. I will always ask why and then try to show the paths that lead to a particular solution. Students are encouraged to explore different paths and think from outside the box. Students are also encouraged to learn a programming tool and play with the mathematical models to develop a feel. Seeing is believing is my motto of teaching.</p>		

	<p>KANTOUSH, Sameh Associate Professor Disaster Prevention Research Institute</p>	<ul style="list-style-type: none"> ● Introduction to Hydrology-E2 (page 222) ● ILAS Seminar-E2:Dams and Reservoirs (ダムと貯水池) (page 281) ● Natural Disaster Science-E2 (page 273) ● ILASセミナー (海外) : Conflict Management[Global Water Issues] (page 345)
<p>I have joined Kyoto University at the capacity of an Associate Professor at Disaster Prevention Research Institute. I received my BSc degree in Civil Engineering from Alexandria University in Egypt. I pursued my MS in civil engineering and PhD in environmental engineering at Saga University in Japan and EPFL in Switzerland, respectively. Prior to joining Kyoto, I worked at The German University in Cairo in the Civil Engineering Program. My research interests span dam impacts, and water resources management.</p> <p>My teaching style is centered around grooming my students with solid knowledge and broad background in multidisciplinary areas -primarily environment, human health and engineering. In the classroom, I am generally energetic and prefer interactive teaching style especially during my seminar course on Dams and Reservoirs. I am also teaching Introduction to Hydrology course, where students learn and understand how elementary concepts and interdisciplinary subjects are related to their lives. Natural Disaster Science and Conflict Management in Global Water Issues courses are designed to promote independent reading and critical analysis for case studies. This is believed to sharpen students' soft skills including presentation, writing reports, leadership, innovation and critical thinking. I encourage students to openly discuss and formulate water- and environmental-related problems either of local or global nature. In delivering such curriculum, I balance between theory and practice via interactive learning, hands-on experimentation, field trips, and project-based learning.</p> <p>In conclusion, I strive to equip my students for the competitive job market through practical assignments-that build on the fundamental concepts. This will require promoting their soft skills and practice leadership, and innovation. My research in the area of integrated river basin and sediment management is pivotal for maintain sustainable reservoir and river basin environment. Such challenge shall be bravely taken to endure changing water supply storage, flood control, irrigation and power generation. It is hoped that my academic expertise and potential contribution encourage the university body to engage and collaborate in areas of common interest.</p>		
	<p>KARAIKOS, Antonios Associate Professor Graduate School of Law</p>	<ul style="list-style-type: none"> ● Law and Culture in Japan-E2 (page 92) ● Introduction to European Law-E2 (page 99) ● ILAS Seminar-E2:Contracts and Law in Modern Society (現代社会における契約と法) (page 316) ● Jurisprudence-E2 (page 91) ● ILAS Seminar-E2:Consumer Society and Law (消費生活と法) (page 322)
<p>Profile: Antonios Karaiskos studied law at the University of Athens (Greece) where he obtained a LL.B. and a LL.M. degree, and at Waseda University (Japan) where he obtained a doctorate in law (LL.D.). After working as research associate at Waseda University, assistant professor at Kyoto Gakuen University (Japan) and Rissho University (Japan) and associate professor at Kansai University (Japan), he joined Kyoto University in April 2016 as associate professor at the Graduate School of Law. He was a lawyer registered in Greece (Athens Bar Association). His research interests focus on civil law (contract law) and consumer law, both Japanese and international (particularly European law).</p> <p>About the lectures: Japanese and international students interested in deepening their understanding of Japanese society and culture, by getting a basic knowledge of how the Japanese legal system works are all welcome. "Law and Culture in Japan" will give an outline of the basic legal institutions in Japan, explain the cultural and social elements behind them, and demonstrate the mutual relation between law and culture in Japan. "Jurisprudence" will give an outline of Japanese law, by explaining the basics of constitutional, criminal, civil and enterprise law in Japan, and introducing their structure and major elements. "Introduction to European Law" will give an overview of the European Union, its history and legal framework. Further, two ILAS seminars ("Contracts and Law in Modern Society" and "Consumer Society and Law") will also be provided, where a comparative analysis of Japanese and European contract and consumer law respectively will be attempted.</p>		
	<p>KIM, Sunmin Associate Professor Graduate School of Engineering</p>	<ul style="list-style-type: none"> ● Physics of Wave and Oscillation (page140) ● Advanced Dynamics (page 139)
<p>Dr. Sunmin Kim got his doctoral degree at Department of Urban and Environmental Engineering of Kyoto University after he finished his undergraduate and master course at Chungnam National University, Korea. His research background is based on civil engineering and hydrology specializing in water resources management and flood risk management. He is interesting in solving various types of international water problems from an engineering aspect considering environmental change and climate change. He is giving several lectures for undergraduate course with subjects related to physics and engineering mathematics, which are Physics of Wave and Oscillation, Probabilistic and Statistical Analysis and Exercises, Advanced Dynamics, Scientific English 1B. Feel free to come to his exciting classes and enjoy his energetic lectures.</p>		

	<p>KNAUDT, Till Associate Professor Institute for Research in Humanities</p>	<ul style="list-style-type: none"> ● Japanese History I-E2 (page 31) ● Japanese History II-E2 (page 33)
	<p>Till Knaudt specializes in Modern Japanese History with focus on twentieth-century history of ideas, social history, and history of technology. He took his PhD in 2014 at Heidelberg University (Germany), writing on the history of the Japanese New Left from the 1960s and to early the 1970s. While continuing to work on this topic, he is also interested into the social history of post-war Hokkaidō, the socialist Left in the 1920s and 1930s, and the history of (home-)computerization in 1980s Japan. Since March 2019 he is an Associate Professor at the Institute for Research in Humanities (Jinbun kagaku kenkyūjo) at Kyōto University.</p> <p>In the Class "Japanese History I" the participants will engage into learning about the history of modern Japan, from the last years of the Tokugawa-era to the end of the Second World War. Special emphasis will be put on analyzing key texts from English-language research literature, discussing methodology and the logic of the argument, as well as on analyzing primary sources. By doing so the participants will work on questions of Meiji-era nation building and political representation, post-World War I industrialization and its social impact, and politics and culture in Japanese Empire in times of peace and total war.</p>	
	<p>LAHOURNAT, Florence Junior Associate Professor Disaster Prevention Research Institute</p>	<ul style="list-style-type: none"> ● Introduction to Ritual Studies-E2 (page 69) ● ILAS Seminar-E2:Topics in social anthropology (社会人類学各論) (page 320) ● Disaster and Culture-E2 (page 70) ● ILAS Seminar-E2:Introduction to cross-cultural communication (異文化コミュニケーション入門) (page 321)
	<p>Florence Lahournat is a junior associate professor at the Disaster Prevention Research Institute. Her research interest is in cultural anthropology and material culture studies, with a special focus on Japan. She holds a PhD from the National Institute of Oriental Languages and Civilizations (Paris, France). As a cultural anthropologist, she is interested in the mechanisms of culture, particularly the adaptive nature of cultural practices: how human rituals – from habits to local traditional practices, adapt to changing circumstances. Part of her current research focuses on the link between local traditions and disaster-affected communities.</p> <p>Message to the students: I have designed these courses as interactive spaces where students are expected to engage actively with the content and take an active part in the class experience. We will use class discussion, readings, student-led sessions and a variety of materials and activities to make the most of our time together. The objective of this interactive approach is for you to master new knowledge, as well as develop your communication skills. While no prior knowledge is required for these courses, an open-mind and the willingness to participate are expected.</p>	
	<p>LANDENBERGER, Kira Beth Senior Lecturer Graduate School of Engineering</p>	<ul style="list-style-type: none"> ● Revisiting Basic Organic Chemistry II-E2 (page 170) ● Fundamental Chemical Experiments-E2 (page 164,165) ● ILAS Seminar-E2:Smart Materials (Innovations in Materials Chemistry) (スマートマテリアル-材料化学の革新) (page 311) ● Revisiting Basic Organic Chemistry I-E2 (page 169)
	<p>Profile: Kira Landenberger is currently pursuing research as well as teaching at Kyoto University in the Graduate School of Engineering in the Department of Polymer Chemistry as a Lecturer. She was born and raised in Michigan in the United States and earned her Ph.D. in Materials Chemistry at the University of Michigan studying the cocrystallization of small molecules under Professor Matzger. After completing her doctorate, she started post-doctoral research at Osaka University under Professor Aoshima studying the precision synthesis of stimuli-responsive polymers using living cationic polymerization. Her research interests include the synthesis, self-assembly and application of stimuli-responsive, functional polymer systems.</p> <p>To the students: Revisiting Basic Organic Chemistry I and II are intended to follow the courses as provided one semester earlier and to give students a chance to review the information again in English. The seminar entitled “Introduction to Environmentally Friendly Chemistry” introduces the concept of environmentally friendly chemistry and the basic principles for achieving cleaner and safer methods in research for students at an early stage with the intention that they can apply these principles in their research from the beginning. The seminar entitled “Smart Materials: Innovations in Materials Chemistry” is intended to equip students with a basic understanding of what might be defined as a smart material and how these materials are present in current research and applications and to inspire students to pursue creativity in future research or studies.</p>	

	<p>LE GALL, Francois Program-Specific Associate Professor Graduate School of Informatics</p>	<ul style="list-style-type: none"> ● Introduction to Coding Theory and Cryptography-E2 (page 238) ● Introduction to Algorithms-E2 (page 235,236) ● Fundamentals of Discrete Optimization-E2 (page 237)
	<p>I am an associate professor working at Kyoto University in the Department of Communications and Computer Engineering. I received a Ph.D. in computer science from the University of Tokyo in 2006. My research interests include algorithms, computational complexity and quantum computation, a new and exciting computation paradigm based on the laws of quantum mechanics.</p> <p>Message to students: Algorithms are not only useful and important, they are also beautiful and fun to learn! My lecture “Introduction to Algorithms” provides a broad introduction to the subject, while my other lecture “Fundamentals to Discrete Optimization” gives an accessible presentation of methods for solving hard problems in practice. The lecture “Introduction to Coding Theory & Cryptography” focuses on other related fascinating aspects in computer science, such as techniques to compress and protect (against noise or malicious third parties) information, which are essential to today’s communications.</p>	
	<p>LEE, Shiu Hang Junior Associate Professor Graduate School of Science</p>	<ul style="list-style-type: none"> ● Introduction to General Astronomy-E2 (page 217) ● ILAS Seminar-E2:The Invisible Universe (不可視の宇宙) (page 312) ● Elementary Experimental Physics-E2 (page 136)
	<p>I am an astrophysicist and a brand new staff member at the Department of Astronomy. Born in Hong Kong, I obtained my Bachelor degree from the Hong Kong University of Science and Technology (HKUST), and my PhD in Physics from Stanford University in the sunny California. I mainly study exploded stars (supernova!) and the beautiful nebulae they leave behind, among other cool things like cosmic-rays.</p> <p>Message to students: My introductory lecture will bring you to the fascinating world of modern astronomy and astrophysics. We will start from our Solar neighborhood, and gradually depart into the vast interstellar space, seeing many awesome astrophysical objects en route through our Milky Way galaxy. We will then charge forward to encounter other galaxies and ultimately have an outlook over the Universe itself. Let’s enjoy the cosmic journey together!</p>	
	<p>LIN, Donghui Program-Specific Associate Professor Graduate School of Informatics</p>	<ul style="list-style-type: none"> ● Information and Society-E2 (page 231,232) ● Basic Informatics-E2 (page 230) ● Practice of Basic Informatics-E2 (page 227)
	<p>I have been an associate professor in Graduate School of Informatics, Kyoto University since April 2018. I received my M.E. degree in computer science and engineering at Shanghai Jiao Tong University in 2005, and Ph.D. degree in social informatics at Kyoto University in 2008. During 2008 to 2011, I was a researcher of National Institute of Information and Communications Technology, Japan. After that, I have worked as an assistant professor in Graduate School of Informatics at Kyoto University until March 2018. My research interests include services computing, multiagent systems, and intercultural collaboration.</p> <p>I am highly motivated to teach English courses in Institute for Liberal Arts and Sciences because I have conducted the research on computer-mediated intercultural collaboration and multilingual communication for more than ten years. For the education of informatics, I aim to create a network among students with different backgrounds by stimulating the students who major in informatics to be interested in real problems in the society, and the students who do not specialize in informatics to get interested in informatics as much as possible. I believe that the cultivated network will become important as the students’ grade increases.</p>	

	<p>LINTULUOTO, Juha Associate Professor Graduate School of Engineering</p>	<ul style="list-style-type: none"> ● Basic Organic Chemistry I-E2 (page 160) ● Basic Organic Chemistry II-E2 (page 162) ● Fundamental Chemical Experiments-E2 (page 165)
<p>I studied organic chemistry at The University of Helsinki in Finland to obtain M.Sc. After working for a while in petrochemical industry, in 1993 I entered Kyoto University Graduate School of Engineering and later obtained PhD in Synthetic and Biological Chemistry. The above listed courses are taught for undergraduate students on 2019-2020. I also teach Supramolecular Chemistry, Advanced Engineering Economy, Presentation Skills and Engineering Project Management for Graduate School of Engineering Students.</p>		
	<p>LOPEZ, Mario Ivan Associate Professor Center for Southeast Asian Studies</p>	<ul style="list-style-type: none"> ● Cultural Anthropology I-E2 (page 71,72) ● Introduction to Globalization I-E2 (page 83) ● Introduction to Globalization II-E2 (page 84)
<p>I am a cultural anthropologist who works on transnational migration, care for ageing societies and sustainability issues in Southeast Asia and the Asian pacific region. My introduction to globalization courses offer students the chance to engage and discuss core processes that underlie present day human movement and also learn about issues that impact contemporary societies. A series of themes act as stepping-stones for students to learn and explore the different aspects of globalization that play out in Asia-pacific, Southeast Asia, and other regions in the world. Students will look at themes such as modern-day migration, prosperity and growth, ageing, global consumption and our core values as a species. My cultural anthropology courses offer students a chance to see how anthropology can have practical relevance in understanding modern day societies and cultures. Students will be introduced to the discipline's basic core concepts and all classes engage with real life examples to place the study of cultures and societies and issues in identifiable contexts with the aim of deepening student's knowledge and interest of other societies and cultures. One course will focus specifically on the broad diversity of gender experiences available in contemporary societies. It hopes to provide students with an analytical framework to contextualize gender diversity and its continual transformation over the past couple of centuries to situate our own experiences.</p>		
	<p>MACINTOSH, Andrew Associate Professor Primate Research Institute</p>	<ul style="list-style-type: none"> ● Conservation Biology-E2 (page 183) ● Animal Behavior-E2 (page 184) ● Zoo Biology-E2 (page 185) ● Comparative Cognition-E2 (page 182)
<p>I am an Associate Professor at Kyoto University's Primate Research Institute, where I work in the Center for International Collaboration and Advanced Studies in Primatology and the Department of Ecology and Social Behavior. I graduated with a PhD degree from the Division of Biological Sciences of Kyoto University in 2010, after studying biological anthropology at the University of Calgary during my undergraduate and Master's degree programs in my home country of Canada. I have studied primate behavioral ecology on 3 continents over the last 20 years. My current work links primate behavior with infectious disease ecology, both in Japan and in tropical forest ecosystems such as in Borneo. I also work with various penguin species to understand links between foraging behavior, resource distributions and ecological challenges like infectious disease and climate change. My courses are about the scientific study of animals, their behavior and ecology, their conservation, and the mechanisms underlying their activities, right from their genes to their minds. As a long-time student of animal behavior myself, I really look forward to embarking on these journeys with students enrolled in the courses. Watching animals in nature, at zoos or aquariums, at wildlife parks or sanctuaries, or even at farms is always a rewarding experience, but understanding the roots of what we see, discovering why animals do what they do and even think what they think, can bring our animal encounters to new heights. Join these courses if you want to learn more about the science of animal behavior, about the threats pushing animals across the planet towards the brink of extinction, and about how zoos and conservationists are using science to protect natural areas and endangered species before they are lost, so that we can all enjoy the natural world for generations to come.</p>		

	<p>MANALO, Emmanuel Professor Graduate School of Education</p>	<ul style="list-style-type: none"> ● Introduction to Educational Studies I-E2 (page 58) ● Introduction to Educational Psychology I-E2 (page 56) ● Introduction to Educational Psychology II-E2 (page 57) ● Introduction to Educational Studies II-E2 (page 59)
	<p>I am a New Zealander and a professor at the Graduate School of Education of Kyoto University. I completed a PhD in psychology at Massey University in New Zealand, and have previously held academic appointments at the University of Auckland in New Zealand and Waseda University in Tokyo. My research area is educational psychology: much of my research has focused on student use of learning strategies, like critical thinking, mnemonics, and diagrams in problem solving and communication. I have over a hundred research publications – including, recently, articles in journals like Quarterly Journal of Experimental Psychology; Thinking Skills and Creativity; and Mind, Brain and Education.</p> <p>I have designed the courses I teach so that students will not only learn content about the education-related topics covered in those courses, but also develop their thinking and communication skills. Thus, in those courses, students do not just listen to me talking – they also have to complete various tasks, work collaboratively with other students, and report back on what they have achieved and opinions they have formed. I provide detailed information about the requirements and expectations of each course, and how exactly students will be assessed and graded.</p>	
	<p>MCLELLAN, Benjamin Associate Professor Graduate School of Energy Science</p>	<ul style="list-style-type: none"> ● Chemistry, Society and Environment-E2 (page 265) ● Introduction to Sustainable Development-E2 (page 266) ● ILAS Seminar-E2:Logic · critical thinking and argument (自然科学・工学に関する論理的・批判的思考法と議論) (page 319) ● Introduction to Mineral Resources-E2 (page 223)
	<p>The courses I teach are described briefly below, but in general aim to bridge the natural and social sciences – hopefully providing useful alternative perspectives for students of both areas.</p> <p>Introduction to Sustainable Development: Sustainability is a globally important, locally relevant, concept covering a broad range of academic disciplines and reflecting various aspects of society, environment and economy; and a critical issue of our time. This course encourages students to start the journey of understanding sustainability in context.</p> <p>Chemistry, Society and Environment: This class will introduce some of the important chemical processes and products that shape modern society, as well as examining the influence that they have on the environment. Students will understand the importance of chemistry and its role in the modern world.</p> <p>Logic, critical thinking and argument: It is important to be able to process information that is presented to us with an understanding of the implications of certain arguments – both the stated and the unstated. Moreover, it is important to be able to present our own information clearly, with justifiable conclusions. Students will participate in extracting themes, understanding bias in documents and in their own work, and in critically analysing documents to develop their writing skills.</p> <p>Introduction to Minerals Resources: Many of the products and services that we use today rely heavily on minerals extracted from the Earth’s crust. This subject will help students understand how these minerals are geologically accumulated and industrially extracted, so that they can understand the limitations and potential of these resources. It will also address the social, economic and environmental implications of these resources and processes.</p>	
	<p>MURPHY, Mahon Program-Specific Associate Professor Graduate School of Law</p>	<ul style="list-style-type: none"> ● International History 1900 to the Present-E2 (page 103) ● Japanese Popular Culture-E2 (page 43,44) ● An International History of East Asia 1839-1945-E2 (page 104)
	<p>Originally from Ireland, I completed my PhD in International History at the London School of Economics and Political Science (LSE). I am a global historian focused on the First World War with a particular interest in international law and the changing nature of imperialism during warfare. Before joining ILAS I was a research fellow here at Kyoto University focusing on Japan’s political and cultural interactions with the wider world during the Taisho period (1912-1926).</p> <p>The first course I teach an International History of the modern world from the beginning of the twentieth century to the present focusing on the main developments that have shaped the present such as the rise and fall of Communism, decolonization in Africa, Europe’s trajectory from Fascism to integration, the current ‘war on terror’ and of course the two World Wars.</p> <p>Second, I teach on the international history of East Asia from 1839-1945. This traces the global entanglements that shaped East Asian history from the first ‘Opium War’ in 1839 to Japan’s defeat in the Second World War. It will look at Empire building and the resistance to it from the perspectives of the main geographical players.</p> <p>Lastly, I lecture on the development of Japanese popular culture in the modern period. The course investigates how Japanese pop culture was and indeed remains a site for struggle over personal and collective identities, interaction with other countries, the control of public memory, gender values, standards of decency, and how Japan’s international image constantly shifted throughout the modern period.</p>	

	<p>NEWTON, Jonathan Charles Scott Associate Professor Institute of Economic Research</p>	<ul style="list-style-type: none"> ● Economy and Society I-E2 (page 97) ● Introduction to Economics-E2 (page 95) ● Economy and Society II-E2 (page 98) ● Principles of Economics-E2 (page 96)
	<p>I am a game theorist specializing in evolutionary game theory in the social sciences, particularly in economics. Much of my work has been on incorporating ideas of collective agency - making decisions together with others, into evolutionary game theory. This involves tackling questions of how the inclusion of such agency affects economic outcomes and in what circumstances we can expect collective agency and jointly intentional decision making to emerge in populations. An example of such jointly intentional decision making is the organization of a hunt that requires several people to collaborate. Another example is found in matching problems, such as marriage, in which decisions on partnerships have to be agreed by more than one person. Aside from its relevance to economic decision making, my work has also been influenced by and bears some relation to certain subfields of philosophy, computer science and psychology.</p> <p>I shall be teaching courses in introductory economics and principles of economics, as well as specialist seminars related to the emergence of norms and conventions, topics that can be studied using the tools of game theory.</p> <p>I was born in Scotland, but have lived in a few places and completed my doctorate at the University of Cambridge.</p>	
	<p>OKEYO, Kennedy Omondi Senior Lecturer Institute for Frontier Life and Medical Sciences</p>	<ul style="list-style-type: none"> ● Fundamental Physics A-E2 (page 133) ● ILAS Seminar-E2:Introduction to Engineering in Biology and Medicine (医工学の基礎) (page 276) ● Physics for All-E2 (page 144) ● ILAS Seminar-E2:Discussions in Biomechanics and Biophysics (バイオメカニクス・生物物理セミナー) (page 323)
	<p>Hello and nice to meet you. My name is Kennedy Okeyo. I was born and raised in Kenya until after high school when I came to Japan for further studies. So it's been over 17 great years living in Japan, both as a student and, now, as a working adult. Throughout these years, I have enjoyed the wonderfulness of nature and the subtleness of the Japanese culture. Additionally, my life has been touched and enriched by the many wonderful persons I have had the opportunity to interact with.</p> <p>As a young and aspiring professor, one of my priorities is to listen attentively to my students and grow up together with them intellectually through research as well as discussions on various scientific topics. Given my background in mechanical engineering and research interest in biotechnology—a multidisciplinary field encompassing biology, engineering and physics—I place emphasis on multidisciplinary discussions with my students and tries to impact upon them the ability to integrate knowledge acquired from different courses toward solution of complex problems.</p> <p>As an alumni of Kyoto University, I am excited to be back and contribute to the advancement of research and intellectual growth at this great institution. Nothing can be more rewarding than to get an opportunity to live again in the beautiful city of Kyoto. I'm a soccer and marathon enthusiast. So please invite me for a run along Kamogawa river. I look forward to great years ahead working together with both colleagues and students at Kyoto University.</p>	
	<p>PARK, Jaehong Senior Lecturer Graduate School of Engineering</p>	<ul style="list-style-type: none"> ● Basic Physical Chemistry (quantum theory)-E2 (page 158) ● Chemistry in Solar Energy Conversion-E2 (page 178) ● Basic Physical Chemistry (thermodynamics)-E2 (page 156) ● Chemical Kinetics and Molecular Reaction Dynamics-E2 (page 179)
	<p>Profile: Dr. Jaehong Park received his bachelor's degree in chemistry and earth system sciences from Yonsei University (South Korea). After his experience in the industrial sector (Samsung Electronics), Dr. Park pursued his doctorate in physical chemistry from the University of Pennsylvania, under the supervision of Professor Michael J. Therien. Following his graduate studies, Dr. Park joined the Chemistry and Nanoscience Center at National Renewable Energy Laboratory (NREL) as a postdoctoral researcher in Dr. Garry Rumbles' group. In 2017, he joined the Department of Molecular Engineering in Kyoto University as a lecturer. His current research interest spans fundamental understanding of charged carrier and exciton dynamics in nano-sized structures, including organic/inorganic hybrid perovskites, organic-based architectures, and semiconducting single-walled carbon nanotubes, using experimental physical chemistry methods.</p> <p>Message to students: In my classes, I aim to help students become independent learners and thinkers regardless of their scientific goals. In general, my focus is on arousing students' ability of identifying chemical problems around them, and to guide students in establishing the skills and habits of logical thinking so that they can further address solutions using scientific knowledge. Especially, in my physical chemistry courses, I hope to introduce basic principles that govern the behaviors of molecules.</p>	

	<p>PASCA, Roman Associate Professor Graduate School of Letters</p>	<ul style="list-style-type: none"> ● Japanese Philosophy I-E2 (page 26) ● Philosophy of Nature I-E2 (page 28) ● Japanese Philosophy II-E2 (page 27) ● Philosophy of Nature II-E2 (page 29)
<p>Originally from Romania, I got my PhD from the University of Bucharest with a thesis in comparative philosophy. My main area of interest is the philosophy of nature, with a particular focus on Japanese premodern philosophy. In my research, I look at the ways in which we as human beings understand, interact with, and represent nature in all its shapes and forms. In my classes, I try to learn as much as possible with my students and from my students. Questions are always welcome, and discussions take up a big chunk of the time.</p>		
	<p>PATAKY, Todd Associate Professor Graduate School of Medicine</p>	<ul style="list-style-type: none"> ● Structures and Mechanisms of Human Movement-E2 (page 249) ● ILAS Seminar-E2:Let's create 3D computer animations (三次元アニメーションを作ってみよう) (page 318) ● Data Analysis Practice II-E2 (page 131) ● ILAS Seminar-E2:Let's simulate human movement (コンピューターで人を動かしてみよう) (page 343)
<p>Profile: I am from Toronto, Canada's largest city and only 14 hours from Japan. I studied Kinesiology (Human Movement Science) and Mathematics as an undergraduate student at the University of Western Ontario from 1995 to 1999. I obtained a Ph.D. in Kinesiology and Mechanical Engineering from the Pennsylvania State University, USA in 2004. I then held postdoctoral research positions in functional neuroimaging and biomechanical simulation in Japan and the UK. At Kyoto University I am developing techniques to simulate, quantify, and objectively analyze complex three-dimensional human joint motion.</p> <p>Lecture content: My lectures will cover a variety of topics related to my research including: human functional anatomy, computer modeling, numerical simulation, applied statistics and data science. Most of the skills you will learn can be applied to other courses, and also to a variety of real-world problems.</p> <p>Message to students: In my lectures I aim to create an open environment, where students interactively work to solve problems based on fundamental concepts from lectures. Let's learn together, and let's build skills together! I'll do my best to give you a challenging but also enjoyable and memorable experience. I look forward to seeing you in class!</p>		
	<p>PERRON, Amelie Senior Lecturer Institute for Chemical Research</p>	<ul style="list-style-type: none"> ● Basic Organic Chemistry I-E2 (page 161) ● Organic Chemistry of Life-E2 (page 176) ● Everyday Life Chemistry-E2 (page 167) ● Basic Organic Chemistry II-E2 (page 163)
<p>I am a Senior Lecturer at the Institute for Chemical Research of Kyoto University. After completing a Ph.D. in Neuroscience at McGill University (Canada), I have spent over ten years in Japan conducting research on fluorescent probes and transcription factor inhibitors at the Institute for Cell-Material Sciences (iCeMS) and RIKEN Brain Science Institute. My current research focuses on small chemical tools to better understand biology and control cell behavior.</p> <p>My courses are intended for Japanese and international students interested in learning chemistry in English. "Basic Organic Chemistry I" and "Basic Organic Chemistry II" cover the fundamental concepts of organic chemistry, while "Organic Chemistry of Life" highlights revolutionizing ideas at the interface between chemistry and biology to spark off your creative power and make you generate your own ideas. Last but not least, "Everyday Life Chemistry" will explain the chemistry behind coffee, bacon, chocolate, shampoo and much more!</p>		

	<p>PETERS, Robert Senior Lecturer Graduate School of Science</p>	<ul style="list-style-type: none"> ● Elementary Course of Physics A-E2 (page 137) ● Analytic Dynamics-E2 (page 151) ● ILAS Seminar-E2:The wonderful world of quantum physics (素晴らしき量子物理の世界) (page 278) ● Introduction to Statistical Physics-E2 (page 149)
<p>I am a Lecturer at the Kyoto University in the Graduate School of Science. I studied physics at the University of Göttingen, which became famous as one of the birth places of quantum mechanics 100 years ago. After my time in Göttingen, I worked in Kyoto and at RIKEN as a researcher. In my research I am interested in quantum theory, especially in quantum manybody phenomena. Bringing together many quantum particles at one place, fascinating and unimaginable things can occur. If you cool certain materials and put them above a magnet, the electrons in the material will arrange themselves, and the material begins to levitate. In other materials the electrons align when being cooled, and the material becomes a magnet.</p> <p>In my courses I will explain how to understand such phenomena. While in the courses of “Elementary Physics”, “Analytic Dynamics”, and “Introduction to statistical Physics” we will use mathematics to understand and predict the behavior of classical objects, in the seminar “The wonderful world of quantum physics” we will forget (nearly) all mathematics and learn about the fascinating phenomena possible in the quantum world.</p>		
	<p>PHILAMORE, Hemma Senior Lecturer Graduate School of Engineering</p>	<ul style="list-style-type: none"> ● ILAS Seminar-E2:An introduction to programming for engineers (エンジニア向けのプログラミング入門) (page 329) ● ILAS Seminar-E2:An introduction to programming for everyone (一般向けのプログラミング入門) (page 333) ● ILAS Seminar-E2:Introduction to robotics - a practical approach (ロボット工学入門－実践編) (page 308) ● ILAS Seminar-E2:Wearable technology (ウェアラブル技術入門) (page 296)
<p>My research within the Mechatronics Lab at the Graduate School of Engineering, Kyoto University, is about energy-autonomous, bio-hybrid and soft robots. I studied Mechanical Engineering at Queen Mary, University of London, UK before obtaining my PhD within the Bristol Robotics Lab at the University of Bristol, UK.</p> <p>My courses about robotics, programming (Python), and wearable technology combine taught theory with weekly in-class practical activities. I aim to provide students with opportunities to develop applied engineering skills that are relevant to their broader studies in other subject areas and to current and exciting areas within industry.</p>		
	<p>PILLER, Garry John Associate Professor Graduate School of Agriculture</p>	<ul style="list-style-type: none"> ● Basic Plant Science-E2 (page 203) ● Introductory Plant Ecology-E2 (page 204) ● Principles of Horticulture-E2 (page 205) ● Introduction to Food Sustainability-E2 (page 262)
<p>I joined the Graduate School of Agriculture in April 2012, with teaching responsibilities in sustainable agriculture and scientific communication.</p> <p>Prior to this, my career spanned from horticultural research in a research institute to agricultural extension in both the public and private sector. The latter was mainly undertaken in a developing country context. This extensive field experience brought home to me the value of mastering basic concepts, as well as the adaptability to quickly self-learn new skill sets, when and where needed. These two values underline my passion for my role (as I see it) here at Kyoto University as a “facilitator for capacity building” in the field of plant science.</p> <p>My personal philosophy on education: “Education is not about content delivery, or teaching students “everything they need to know”, but about capacity building: enabling students to become skilled, flexible, self-propelled learners, capable of taking on the next unknown challenge around the corner”.</p>		

	<p>POUDYAL, Hemant Assistant Professor Graduate School of Medicine</p>	<ul style="list-style-type: none"> ● Biology and Sociology of Chronic Diseases-E2 (page 247) ● ILAS Seminar-E2:Ethical issues in Health sciences (健康科学における倫理的課題) (page 300) ● Nutrition and Health-E2 (page 246) ● ILAS Seminar-E2:Critical thinking and Communication skills (批判的思考とコミュニケーション・スキル) (page 335)
<p>Personality of students take final shape at the University. I hope to offer courses and content that will enable our students to learn new life skills and also shape their unique philosophical outlooks that will help them develop their personality. I also believe that learning should not be a stressful process rather it should be enjoyable and curiosity driven. I aim to make my classes very practical and present information in a simple format. I like to use technology in the classroom to make the learning process very relevant for the current generation of students. I received my Master's and PhD degrees from University of Queensland, Australia and subsequently came to Japan in 2014 as a Hakubi Researcher. As a nutritional physiologist, my research aims to understand the effects what we eat on our organs, particularly the heart. As a common trait in physiologists, I am also interested in things that are outside my area of expertise and sometimes even outside the boundaries of medical sciences such as local culture, traditions and religion!</p>		
	<p>QURESHI, Ali Gul Associate Professor Graduate School of Engineering</p>	<ul style="list-style-type: none"> ● Advanced Calculus I-Vector Calculus (page 117) ● Fundamental Physics A (page 132) ● Advanced Calculus II-Differential Equations (page 118) ● Fundamental Physics B (page 134)
<p>Profile: Dr. Qureshi has earned a doctoral degree in Engineering from Department of Urban Management, Kyoto University. He has also got a Master of Engineering degree from the Asian Institute of Technology, Thailand, and a Bachelor of Engineering degree from Mehran university of Engineering and Technology, Pakistan. Message and Courses Specialization (Liberal Arts and Sciences): A sound knowledge of advanced mathematics and basic sciences such as physics, are vital to be successful in a wide range of fields of studies in science including many fields of engineering. The courses on Advanced Calculus A and Advanced Calculus B introduce many basic and advanced topics, such as vector fields, line and surface integrals, differential equations and their solutions with some applications. Fundamental physics A covers the concepts of classical physics such as laws of motion, conservation laws of energy, momentum etc. A variety of topics related to electricity and magnetism are covered in the course on Fundamental Physics B. I believe teaching is also a form of learning, therefore, lets join to learn and explore together. Other Subjects at Faculty of Engineering: Transport Policy, Urban and Regional Planning, City Logistics, Probabilistic and Statistical Analysis and Exercise, Planning and Management of Social Systems, Engineering Mathematics B1</p>		
	<p>RAJENDRAN, Arivazhagan Junior Associate Professor Institute of Advanced Energy</p>	<ul style="list-style-type: none"> ● Basic Physical Chemistry (thermodynamics)-E2 (page 157) ● Essentials of Basic Physical Chemistry-E2 (page 155) ● Basic Physical Chemistry (quantum theory)-E2 (page 159) ● Chemistry of Sustainable Energy-E2 (page 168)
<p>Profile: Arivazhagan Rajendran received his Master degree with specialization in Inorganic Chemistry from University of Madras, India. After completing his Master degree, he participated in many short-term research trainings at various institutes such as Tohoku University, Japan, Max Planck Institute for Bioinorganic Chemistry, Germany, and Central Leather Research Institute, India. He then began doctoral research in Bioanalytical Chemistry working with Prof. Norio Teramae at Tohoku University. After earning Ph.D. in 2008, he joined at Frontier Institute for Biomolecular Engineering Research, Konan University as a Postdoctoral Researcher. Then, he moved to Institute for Integrated Cell-Material Sciences, Kyoto University and worked on scaffolded DNA origami based Nano-Biotechnology. After working at Life Science Center of Tsukuba Advanced Research Alliance, University of Tsukuba as an Assistant Professor, in 2015 he joined at Institute of Advanced Energy, Kyoto University as a Junior Associate Professor. Message to the students: The aim of the courses mentioned above is to teach the advanced energy science through fundamental physical chemistry starting from the structure and electronic properties of atoms. These basic courses will help the students to understand the chemistries involved in sustainable energy, energy production, storage, environmental issues, and so on. Besides the technical aspects, I can speak little Japanese which will greatly help me to communicate with the students.</p>		

	<p>RAKERS, Christin Senior Lecturer Graduate School of Pharmaceutical Sciences</p>	<ul style="list-style-type: none"> ● Introduction to Biological Data Analysis-E2 (page 210) ● Data Analysis Practice I-E2 (page 129, 130) ● Introduction to Computational Molecular Biology-E2 (page 211)
<p>Profile: I studied biochemistry and biomedicine in Germany and obtained a PhD in computational pharmaceutical sciences from the Freie Universitat Berlin. Before coming to Kyoto, I pursued postdoctoral studies at Nagoya University. My interests are computational molecular design, medicinal chemistry, chemo-/bioinformatics, and data science.</p> <p>Message to the students: The purpose of my courses is not the sole memorisation of facts, but to provide a framework that helps students to develop their own questions and to find their way to potential answers. To quote Albert Einstein: “It is not that I’m so smart. But I stay with the questions much longer.”.</p>		
	<p>RAPPLEYE, Jeremy Associate Professor Graduate School of Education</p>	<ul style="list-style-type: none"> ● Pedagogy I-E2 (page 50) ● Advanced Lecture for Pedagogy I-E2 (page 54) ● Pedagogy II-E2 (page 51) ● Advanced Lecture for Pedagogy II-E2 (page 55)
<p>What are you doing here at Kyoto University? How will you spend your short time here? At the center of any university is the interaction between students and teachers that we call ‘teaching and learn’. This exchange seems easy and straightforward, but arguably nothing is more complex or more important. Strangely, however, most of us have never stopped to think deeply about how real learning occurs. What is learning? What is the best way to teach? What assumptions underpin common ways of teaching/learning in modern schools and universities? Is there any better way?</p> <p>My classes will introduce students to the wonderfully complex world of education, specifically teacher-student relations, an interaction we simply call ‘pedagogy’. Most of us think we know about pedagogy because we have attended school all our lives. You might ask: What could be so complicated? Come to my class and you will find out.</p> <p>I grew up in California, attending Yale as an undergraduate and Oxford for my PhD. I have researched and/or taught at Japan’s leading universities, including Tokyo University, Osaka University, and ICU. Now I am an Associate Professor at the Graduate School of Education at Kyoto University. For students aiming to become global leaders and escape a parochial outlook, I strongly recommend this course: differences in cultures and thought begin with the way we are taught in school. After taking my class, you will be able to think critically about how you are being taught in all your Kyoto University courses. I hope this will help you make the most of your short time here.</p>		
	<p>SAMADDAR, Subhajyoti Associate Professor Disaster Prevention Research Institute</p>	<ul style="list-style-type: none"> ● Introduction to Urban Planning-E2 (page 88) ● ILAS Seminar-E2:First Step to Qualitative Research Methods - Field Surveys and Data Analysis (質的研究へのはじめの一歩 - フィールド調査とデータ分析) (page 289) ● Introduction to Risk Communication-E2 (page 67) ● Introduction to Society and Community Studies-E2 (page 68)
<p>I joined as an Associate Professor at Disaster Prevention Research Institute in Kyoto University. I have an interdisciplinary academic background including social anthropology, urban planning and disaster risk management. I did my PhD from Kyoto University, Japan and Master of Urban Planning from School of Planning and Architecture, New Delhi, India.</p> <p>My academic interest encompasses at knowing why different people perceive risk differently, what are their motivations to take risk preventive actions and how these local people can be more meaningfully involved in the risk management process. I had the opportunity to conduct in-depth field surveys in in different countries such as - India, Bangladesh, and Japan and recently in Ghana (Africa) in different disaster risk contexts.</p> <p>I believe the greatest source for human learning is to pursue their own individual motivations. So in my class I wish to encourage and stimulate students to pursue their own motivations, their own interests to learn the social system and explore the world around them. I wish that in my classes there will not be any hierarchy between teachers and students, but learning and teaching would be through reciprocal and interactive dialogues, exchanging ideas, learning mutually from real-life challenges and then to challenge the existing ideas and thoughts.</p>		



SCHMÖCKER, Jan-Dirk
 Associate Professor
 Graduate School of Engineering

- Advanced Scientific English-E3(Debate) (page 255)

My research interests are understanding people's travel behaviour and transport planning. This combines social psychology, operations research, economics as well as other disciplines. Exciting opportunities as well as challenges arise in this research field nowadays through the availability of "big data" and key developments such as sharing economy, electromobility and autonomous driving.
 Together with six other teachers I am teaching the "English Scientific Debate". I hope students will learn to better express and discuss the complexities of challenges engineers face nowadays. We see this as an important topic also because putting successful research into practice often requires difficult discussions with different stakeholders. We hope this class can contribute to equipping students for this.



SINGER, Jane
 Associate Professor
 Graduate School of Global Environmental Studies

- Introduction to Sociological Observation-E2 (page 66)
- Human-environmental Interactions-E2 (page 267)
- Topics in Human Geography VII-E2(Population and Mobility) (page 80)
- Introduction to Sustainable Development-E2 (page 268)

Professional background: Jane Singer is associate professor of the Graduate School of Global Environmental Studies. She has a master's degree in international affairs from Columbia University and a Ph.D. in global environmental studies from Kyoto University. An American with 30 years' residence in Japan, she was formerly a professional magazine and newspaper journalist and editor. She specializes in development studies, focusing on human migration and displacement and community resilience, with a regional focus on Southeast Asia.

Message about my courses: I'm interested in how people are affected by the process of economic development and environmental change, and in my courses we will study human interactions, and those of people and the environment, using readings, videos, lectures, and classroom discussion. Students will also conduct their own research on topics that interest them, to share with others in the class. Even students without much background in the social sciences should find many topics that will relate to their studies and their interest in a rapidly changing world impacted by globalization, technological innovation and climate change. The English language is the communicative tool used for study and expression, but the objective of these courses is to master the content – development studies, environmental studies, human geography or sociology in an interactive, student-directed learning approach.

Professional background: Jane Singer is associate professor of the Graduate School of Global Environmental Studies. She has a master's degree in international affairs from Columbia University and a Ph.D. in global environmental studies from Kyoto University. An American with 30 years' residence in Japan, she was formerly a professional magazine and newspaper journalist and editor. She specializes in development studies, focusing on human migration and displacement and community resilience, with a regional focus on Southeast Asia.

Message about my courses: I'm interested in how people are affected by the process of economic development and environmental change, and in my courses we will study human interactions, and those of people and the environment, using readings, videos, lectures, and classroom discussion. Students will also conduct their own research on topics that interest them, to share with others in the class. Even students without much background in the social sciences should find many topics that will relate to their studies and their interest in a rapidly changing world impacted by globalization, technological innovation and climate change. The English language is the communicative tool used for study and expression, but the objective of these courses is to master the content – development studies, environmental studies, human geography or sociology in an interactive, student-directed learning approach.



SUGIMOTO, S. Pilar
 Junior Associate Professor
 Graduate School of Medicine

- Basics of the Human Body-E2 (page 244)
- ILAS Seminar-E2:Global Health (グローバルヘルス) (page 293)
- Introduction to Lifestyle Related Diseases-E2 (page 245)
- ILAS Seminar-E2:Socio-epidemiology in Health Research (ヘルスリサーチにおける社会疫学) (page 331)

Self Introduction: S.Pilar Sugimoto is Junior Associate Professor at the Medical Education Center in the Graduate School of Medicine, Kyoto University. She is third generation Japanese Peruvian, born and raised in Lima, Peru. Dr. Sugimoto earned her medical degree from Universidad Peruana Cayetano Heredia in Peru and her PhD degree from Kyoto University. She collaborates with the Department of Global Health and Socio-epidemiology in the School of Public Health in several qualitative and quantitative socio-behavioral studies related to HIV and non-communicable diseases in Japan and abroad.

Message to students: These are basic courses prepared for all majors. You are expected to be motivated to learn, do your best, engage in class discussions, and enjoy every step of the way.



SVADLENKA, Karel
 Associate Professor
 Graduate School of Science

- Calculus with Exercises A (page 105)
- Calculus with Exercises B (page 106)
- Honors Mathematics B-E2 (page 122)

Profile: Originally from Czech Republic, I got my PhD from Charles University in Prague and also from Kanazawa University, Japan. My research focuses on using mathematics (especially partial differential equations) to understand various natural phenomena, including modeling and numerical simulation.

Message: The calculus course provides the very basic knowledge necessary in any field of science and engineering, which has some connection to mathematics. This means mainly the differentiation and integration of functions of one real variable (first semester) and several variables (second semester). However, we will start from the fundamental concepts, such as “What is a real number?” or “How do we precisely define continuity?”. After finishing this course, you should be able, for example, to find maxima of a function, to compute volume of an object or to solve differential equation modeling some natural phenomenon. There are a lot of things to learn in order to master the basic calculus and everything has to be done precisely because it is mathematics. Nevertheless, I hope you will be brave enough to join the class and to learn math or maybe just to practice your scientific English.



TAN, Fucheng
 Senior Lecturer
 Research Institute for Mathematical Sciences

- Quest for Mathematics II-E2 (page 113,115)
- ILAS Seminar-E2:Encounters with modern arithmetic (現代整数論との出会い) (page 299)

Fucheng Tan is a researcher from Research Institute for Mathematical Sciences. He obtained his PhD in Mathematics from MIT, and had taught in the US for 5 years before joining in Kyoto University in 2016. He works on Arithmetic Geometry, which can be understood as the study of arithmetic problems using the tools from algebra and geometry. For teaching, he believes in continuous communication between teachers and students, and encouragement. He likes to discuss mathematics with students who enjoy mathematics, not only math majors but also students in other fields.

The materials taught in both classes are rooted in the ancient problems in number theory, which at the most basic level can be regarded as the study of the set of integers. On the other hand, the first class is with emphasis on elementary number theory, and the second class will focus on modern algebra, the foundation of algebraic number theory. He intends to make the classes accessible to most undergraduate and graduate students. In these classes, he will try to explain the basic concepts and solutions in mathematics with minimal requirements for the student’s background. In the meantime, the classes will help the student improve their oral communication skill in English, via discussions and presentations.



TAKENAKA, Mizuki
 Program-Specific Associate Professor
 Graduate School of Science

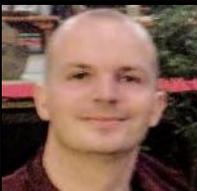
- Fundamentals of Cell and Molecular Biology-E2 (page 180)
- Biological Sciences through Scientific Articles I-E2 (page 208)
- Introduction to Plant Science-E2 (page 181)
- Biological Sciences through Scientific Articles II-E2 (page 209)

My Profile: After receiving the PhD at the Kyoto University, I worked at the Ulm University (Germany) until 2017. I am currently working at the laboratory of plant molecular genetic in the Graduate School of Science in the Kyoto University. My research interest is molecular mechanism of C to U RNA editing, which is indispensable for proper expression of gene function in plant organelles. Recent our data suggested different types of proteins form dynamic complexes to pursue the reaction. We are searching for missing components in the complexes and analyzing how the complexes assemble in plant organelles.

Message: Plant biology has been an important subject from the earliest study of life processes. Research on plant system will also tell us how to approach problems in agriculture, health, and the environment. In my lecture courses, I will teach basic of cell biology and plant biology with introduction of recent research topics. In the seminar courses, we will read recent scientific literatures especially on plant biology. You will be expected to learn basic skills for reading manuscripts, summarizing the contents, and giving presentations on them. You will be also encouraged to discuss the topics in English. However, you will not be expected to speak native-like English, therefore, don’t hesitate to express yourself at the course.

	<p>TAJAN, Nicolas Pierre Associate Professor Graduate School of Human and Environmental Studies</p>	<ul style="list-style-type: none"> ● ILAS Seminar-E2 :Frontiers in psychopathology (精神病理学のフロンティア) (page 284) ● Psychoanalysis-E2 (page 52) ● Psychopathology I-E2 (page 250) ● Psychoanalysis II-E2 (page 60)
	<p>If you want to learn how to diagnose mental disorders (e.g., autism, schizophrenia, depression, bipolar disorder, PTSD), psychopathology class is the right place for you. Psychopathology is the interdisciplinary study of mental disorders, and my ILAS seminar introduces major disciplines contributing to the field. But wait a second. Why should we always think in terms of “disorders”? Are there other ways to approach human distress? Yes, there are, and one of them has a very specific status among scientific disciplines: psychoanalysis. My classes are a very rare and unique opportunity to learn from a psychoanalyst, in the academic setting, about Freudian and Lacanian theories and clinics.</p> <p>Students sharing the ideal of an Enlightenment knotting East and West and willing to bring a renewed horizon for the next generations are warmly welcome to attend these classes. For their path to success in the global economy cannot be achieved without a genuine awareness of the burden, and the challenges of mental health issues.</p> <p>In France, where I grew up, I had a clinical practice as a psychologist in hospitals, welfare services, guidance center, and I was trained as a psychoanalyst (2003-2011). Then I researched at Kyoto University Institute for Research in Humanities (2011-2017), Ritsumeikan University (2018), and I am now an Associate Professor at the Graduate School of Human and Environmental Studies, Kyoto University (2019-).</p>	
	<p>TANGSEEFA, Decha Associate Professor Center for Southeast Asian Studies</p>	<ul style="list-style-type: none"> ● Intercultural Communication I-E2 (page 47) ● Political Science I-E2 (page 93) ● Intercultural Communication II-E2 (page 48) ● Political Science II-E2 (page 94)
	<p>Although trained in political science and philosophy, I have since 2000 been conceptually situating my research at the intertwining relations of four notions: violence, difference, marginality, and temporality. It is thus crucial for my research to always blur different genres of various disciplines of the human sciences: political science, philosophy, anthropology, and history. My research fields lie at the nexus between migration studies and border studies, focusing especially on the Thai-Myanmar borderlands – a border region to where most of my publications on the following issues have devoted: death & atrocity; refugee; music & youth; ethnicity; marginal migrant workers; "cultural fluency"; community engagement; malaria elimination; and special economic zone. I approach my four courses – Political Science (I & II) and Intercultural Communication (I & II) – with such orientation and invite students to explore kaleidoscopic landscapes of "the political" and "the cultural" from their loci of enunciation.</p>	
	<p>TASSEL, Cedric Associate Professor Graduate School of Engineering</p>	<ul style="list-style-type: none"> ● Fundamental Chemical Experiments-E2 (page 164,165) ● Introduction to Inorganic Chemistry A-E2 (page 174) ● Introduction to Inorganic Chemistry B-E2 (page 175)
	<p>Cédric Tassel is an Associate Professor in the Department of Energy and Hydrocarbon Chemistry. He was born in France where he obtained a Bachelor and Master Degree in Solid State Chemistry from the University of Rennes I. Cédric holds a PhD in Engineering from the Graduate School of Engineering, Kyoto University. In 2012, he became a Hakubi Assistant Professor with his research focusing on the synthesis of novel oxide materials via exotic synthetic techniques. More recently, his interests are in the preparation of mixed anionic structures oxide-hydride and oxide-nitride towards the realization of functional materials.</p> <p>To the students: The “Introduction to Inorganic Chemistry A·B” lectures will introduce the basic concepts of chemistry from the structure of atoms and molecules to the study of their bonding, interactions and reactions. Chemistry surrounds us and I hope that this course will provide students with a better understanding of its impact on our daily lives and environment.</p>	

	<p>THUERMER, Stephan Program-Specific Associate Professor Graduate School of Science</p>	<ul style="list-style-type: none"> ● Equilibrium and Energy-E2:A Macroscopic Perspective of Chemistry (page 173) ● ILAS Seminar-E2 :What are Liquids? Answers from Physics, Chemistry and Engineering (液体は何? 液体の基礎物理学と化学) (page 288) ● Introduction to Surface Chemistry-E2 (page 177) ● ILAS Seminar-E2:How to Study Atoms and Molecules with the Help of Light (光を使って原子や分子を調べる) (page 325)
	<p>Before coming to Japan in 2013 my home was Berlin, Germany. I initially studied and graduated in physics, but over time my research was drifting more and more towards chemistry. In my days as graduate student I became interested in studying the phenomena underlying chemical reactions on the molecular level in liquid water and solutions. I am continuing this work here at the Department of Chemistry. I study molecular properties in liquids using spectroscopy, that is, utilizing the interaction of light with matter to learn about processes on the invisible atomic scale.</p> <p>The quest in natural sciences is always to think about and find the underlying mechanisms for the observed effects or processes. I would like bring this philosophy of exploration and critical thinking to the lecture as an important skill of scientific research. In the courses we look at phenomena which are closer to our daily experiences than the dry theory and without getting lost in difficult details. We approach topics from physical chemistry by working our way down from the observation in nature or use in technology to the underlying processes and finally chemical and physical laws. I encourage everybody to come to the courses who is interested to learn about nature's sometimes surprising laws and how these effect our lives from a physical chemistry viewpoint.</p>	
	<p>VAN STEENPAAL, Niels Associate Professor Graduate School of Education</p>	<ul style="list-style-type: none"> ● Japanese History I-E2 (page 30) ● Japanese Intellectual History I-E2 (page 41) ● Japanese History II-E2 (page 32) ● Japanese Intellectual History II-E2 (page 42)
	<p>Dr. Van Steenpaal is an intellectual historian with a primary research interest in “moral culture”, a term that he uses to describe the pathways, processes and media through which morality and material culture mutually influence each other. Since all history is forged from curiosity and skepticism, I strongly encourage these values in my classroom as well. Feel free to speak up at any time to ask questions or (kindly and respectfully!) challenge either me or your fellow students.</p>	
	<p>VANDEBON, Alexis Program-Specific Senior Lecturer Institute for Frontier Life and Medical Sciences</p>	<ul style="list-style-type: none"> ● Basic Data Analysis-E2 (page 127) ● ILAS Seminar-E2:Programming for data analysis (データ解析のためのプログラミング) (page 309) ● Introductory Statistics-E2 (page 124) ● ILAS Seminar-E2:Introductory Bioinformatics (バイオインフォマティクス入門) (page 340)
	<p>My self-introduction: After studying biochemistry in Belgium, I completed a PhD degree in the University of Tokyo, where I investigated the sequence and structure of regulatory DNA sequences using bioinformatics. After graduating, I conducted research in the fields of bioinformatics and immunology in Osaka University, and since 2017 in Kyoto University. My main research interest is the regulation of gene expression.</p> <p>We are living in the age of “big data”, and research is increasingly data-driven. But data is not the same as knowledge. Our goal is to extract knowledge from data, and this process is the focus of my courses. My course on statistics introduces how to analyse and draw conclusions from observations. The course on data analysis explores machine learning techniques to find patterns in data, and in the programming course you can learn how to write scripts to easily perform data analysis. Finally, the course on bioinformatics gives a broad introduction to data-oriented research in biology, genomics and proteomics.</p>	

	<p>VEALE, Richard Edmund Assistant Professor Graduate School of Medicine</p>	<ul style="list-style-type: none"> ● Introduction to Behavioral Neuroscience A-E2 (page 195) ● Introductory Statistics-E2 (page 123) ● Introduction to Behavioral Neuroscience B-E2 (page 196) ● Introduction to Medical Psychology-E2 (page 251)
	<p>VILAYVONG, Khonesavanh Assistant Professor Graduate School of Agriculture</p>	<ul style="list-style-type: none"> ● Sustainable Forest Environment-E2 (page 263) ● ILAS Seminar-E2:Regional Disaster Prevention (地域防災学) (page 310) ● Science on Water, Soil and Ecosystems-E2 (page 218) ● ILAS Seminar-E2:Geo-Disaster Risk Reduction and Prevention (土砂災害の防災・減災学) (page 337)
	<p>Born in the Land of Million Elephants or Laos, my first degree was from Nanyang Technological University in Singapore. My advanced degrees were conferred by Kyushu University in the field of civil and structural engineering. My academic and research interests are in the field of environment and climate-related disaster prevention. Besides, I actively participate in the field of environmental assessment. Most of my previous project experiences were from multi-national and multi-cultural international organizations (For example: UNDP, UNEP, JICA, SNV), where I served as a national advisor, a technical staff, a researcher, and a worker.</p> <p>Welcome to my courses. As a student of globalized, globally recognized and connected mind at Kyoto University, you are cordially invite to enroll to my courses. In the courses, you will learn about the basic elements of the environment: air, water, minerals and soils and their vital functions and roles in agriculture, forests, ecosystem systems, and environmental sustainability. In detail, what are the connections between the elements and natural systems, which enable favorable conditions for our existence, or otherwise adverse consequences such natural and man-made hazard and disaster (famine, deforestation, climate change, flood, earthquake, and tsunami)? What kind of basic sciences, measures and technologies available to deal with such calamity? Besides conventional method of learning science at a tertiary level, you will embark on skill building toward academic, practical and career-oriented perspective. Definitely, if you keep constant effort and commitment on acquiring new knowledge, you ought to make an educated progress in your endeavor.</p>	
	<p>WALINDA, Erik Assistant Professor Graduate School of Medicine</p>	<ul style="list-style-type: none"> ● ILAS Seminar-E2:Introduction to Biomedical Presentation and Debate (医学英語入門-プレゼンテーションとディベート) (page 304) ● ILAS Seminar-E2 :Introduction to life science and scientific conversation (生命科学へのいざない) (page 317) ● ILAS Seminar-E2:Biochemistry Principles (生化学の塾) (page 334,342)
	<p>Research. After getting my degree in Biochemistry in Germany from the Free University of Berlin, I joined a PhD course at Kyoto University where I studied protein-protein interactions using biophysical methods such as calorimetry, fluorescence and nuclear magnetic resonance spectroscopy. I am particularly interested in a cellular pathway called macroautophagy, which is the degradation system of bulk matter such as the amorphous protein aggregates that are associated with all kinds of neurodegenerative diseases such as Huntington's, Alzheimer's and Parkinson's diseases. I am also always interested in developing new biophysical tools to analyze and understand protein motion and function.</p> <p>Education. In all of my classes, students get the chance to talk and discuss in English. To join the class, you need a tiny bit of courage, but afterwards your speaking and listening skills will definitely be improved. You also learn about science. Yay! This year I will teach three ILAS seminars Presentation and Debate on Biomedical Science, Biochemistry Principles and Introduction to Life Science and Scientific Discussion. The presentation and debate class is an introduction on how to present your ideas to an international audience (in English). We focus on simplicity. We do not make things complicated. We also discuss and debate about some specific topics. The biochemistry seminar Introduction to Biochemistry introduces the field of biochemistry. We also solve biochemical problems in class to check our understanding. Introduction to life science and scientific discussion is something like a mixture of them. It has both presentation and molecular biology in it. It is my hope that all students enjoy their time here at Kyoto University and in the time being here discover some aspect of science that they truly interested in.</p>	

**WENDELL, Roger**

Associate Professor

Graduate School of Science

- A Guide to Modern Physics A-E2 (page 142)
- ILAS Seminar-E2:Topics in Frontier Physics (現代物理学の最先端) (page 279)
- Elementary Experimental Physics-E2 (page 136)

Physics is a powerful tool for understanding the natural world starting from sets of fundamental principles. This is true of all branches of physics, from the classical study of motion with Newtonian mechanics, to the quantum mechanical description of radioactivity and beyond.

Moreover, our modern description of nature is built upon a foundation of experimentation and observation, which can be referenced or reproduced to reaffirm and propagate our understanding to others. Lecture material will accordingly be supported by concrete example and reference to relevant experiments.

While it may seem daunting to learn physics at any level in a foreign language, English is currently the primary language used to communicate ideas in the fields of science and technology, so training oneself early will provide access to a wide and wonderful world of scientific thought and inquiry.

Most of my research is dedicated to the study of neutrino oscillations and this pursuit brought me to Japan in 2008. Primarily I work on the Super-Kamiokande experiment, which was awarded the 2015 Nobel Prize in physics, and the T2K experiment. Prior to joining the faculty of Kyoto University I was a researcher at the University of Tokyo's Institute for Cosmic Ray Research. Far prior to that I was born in and later trained in science at various institutes in the United States.

**WERNER, Marcus Christian**

Program-Specific Assistant Professor

Yukawa Institute for Theoretical Physics

- ILAS Seminar-E2:Frontiers in Theoretical Physics II (理論物理学最前線 II) (page 292)

Profile: After receiving the PhD in astrophysics at the University of Cambridge (UK), I worked at Duke University (USA) and Kavli IPMU (University of Tokyo) before joining Kyoto University as a Hakubi assistant professor. Based at the Yukawa Institute for Theoretical Physics, I study gravity theories and lensing tests.

Message: Now is an exciting time to do physics: the recent discoveries of the Higgs boson and gravitational waves have not only corroborated earlier theoretical predictions, but opened up new avenues for research. In this course, we will sample the current literature of theoretical physics, with a bias towards astrophysical topics. While the emphasis is on physical content, this will also be a good opportunity to practise English, which is indispensable in current research.

**YANG, Chin-Cheng**

Junior Associate Professor

Research Institute for Sustainable Humansphere

- Insect-human Interactions-E2 (page 271)
- ILAS Seminar-E2:Urban Pest Management (都市害虫の管理) (page 313)
- Introduction to Biological Invasion-E2 (page 269)
- ILAS Seminar-E2:Insect and ecosystem sustainability (昆虫と持続可能な生態系) (page 338)

Profile: Chin-Cheng Scotty Yang is currently a Junior Associate Professor with Research Institute for Sustainable Humansphere at Kyoto University (Uji campus). He completed his Ph.D. in Entomology from National Taiwan University (NTU) and received postdoctoral training at Biodiversity Research Center at Academia Sinica. Before joining Kyoto University, he was with NTU as an Assistant Professor for 5 years. Research activities in his lab "Laboratory of Urban Pestology" have been focused on pursuing a better understanding of urban pest arthropods, particularly studies of the ecology, behavior and genetics of invasive/urban pests such as ant.

Message: Keywords for my courses include "insect", "invasive species", "pest control" and "ecosystem". Students who would like know more about insects and how important they are on this planet should not miss my courses. For students with biology background (or to some extent), you would be able to get more delicate taste of these six-legged animals from a totally different angle. Students with limited background in biology are as welcomed, and you certainly do not have to worry because my courses are mostly case-driven. For all students, you will learn new things in my class through field trip, hands-on and in-class activities in addition to regular lecture. More importantly, you are encouraged to express yourself whenever you have something to say in the class, and I believe this is how we start to jointly build a positive, interactive, pleasant classroom atmosphere.

	<p>YOUSSEFIAN, Shohab Professor Graduate School of Medicine</p>	<ul style="list-style-type: none"> ● Introduction to Molecular Biotechnology-E2 (page 194) ● Principles of Genetics-E2 (page 186) ● Introduction to Biochemistry-E2 (page 190,191)
	<p>Growing up I was always amazed how science could tell us about the past, present and future - dinosaurs, how our bodies work and next month's weather. I was particularly excited about biology; especially how genes controlled our lives. After studying genetics/ biochemistry at university, I traveled through Africa for several months and witnessed the tragic effects of hunger. I therefore returned to England, determined to help develop crops that could feed such people. After finishing my MPhil and PhD in plant genetics at Cambridge, I moved to Akita, where for the next 26 years I worked on plant molecular biology, developing novel resources for improving crop plants. Just recently, I have moved to Kyoto where I now hope to share my passion and wonder about our biological world. So, here I hope to show in my 'Biochemistry' course the common thread that runs throughout all life; in my 'Genetics' course, the intricate complexities of how genes function and are regulated, and finally through my 'Molecular Biotechnology' lectures how to exploit these resources for man's benefit while preserving our environment. There are still many basic questions and puzzles about life that must be answered so that all humanity can benefit from our advances, and I am certain that you are the ones that will solve these!</p>	
	<p>ZWINGMANN, Horst Friedrich August Professor Graduate School of Science</p>	<ul style="list-style-type: none"> ● Introduction to Earth Science B-E2 (page 214) ● Field Earth Science-E2 (page 219) ● Advanced Practice of Earth Science-E2 (page 221)
	<p>Geologist investigating earthquakes and timing of tectonic processes. Horst Zwingmann joined Kyoto University in 2015 as a Professor for Geotectonics. His research involves investigation of surface tectonic processes and constraining the timing of deformation zones using isotopic dating methods. Research introduction to students: The understanding of geological fault processes is important for numerous reasons such as regional correlation of shallow fault activity, of critical importance for the evaluation of earthquake hazards with applications for civil engineering and resources exploration (ore bodies, hydrocarbons) and in accessing suitability of waste storage sites including nuclear waste.</p>	



英語で学ぶ全学共通科目

Liberal Arts and Sciences to learn in English 2019

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