



UNIVERSITY OF
BIRMINGHAM

Student Handbook 2016

Mathematical Finance and Financial Time Series Analysis

BIRMINGHAM INTERNATIONAL SUMMER SCHOOL



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Useful Telephone Numbers

Emergencies (police, ambulance, fire) – 999

University telephone numbers

University of Birmingham

Edgbaston

Birmingham

B15 2TT

University Switchboard – 0121 414 3344

University Security Services – 0121 414 3000

Accommodation

Victoria Hall

17 Grange Road

Birmingham

B29 6BL

Telephone number: **0121 256 7000** (24 hours)

Taxi

TOA Taxis: 0121 427 8888

Castle cars: 0121 472 2222

A Warm Welcome

I am delighted that you have chosen the Birmingham International Summer School (BISS) programme. At the University of Birmingham we offer an elite education and an inspiring learning experience. You will study at the UK's most beautiful campus, taught by outstanding academics, and have the opportunity to immerse yourselves into the rich British cultural experience.



The Mathematical Finance and Financial Time Series Analysis programme allows you to gain fundamental knowledge in financial engineering, which is a highly specialised and rapidly growing area. You will explore the computational skills as well as the underlying mathematical and statistical theory to prepare for a career on the computational end of quantitative finance. The social programme, which includes trips to Shakespeare's Birthplace in Stratford-upon-Avon, to the exciting capital city of London, as well as experiencing a traditional English Pub night, will introduce you to some of the fun aspects of British heritage and popular culture.

This Student Handbook will give you all the information you need about the programme, the lecturers, the social events and practical information to find your way around the University and the City. If you have any further questions, please feel free to contact our BISS team members or the College designated coordinator.

I hope you will have an enjoyable and inspirational experience while you are with us at Birmingham.

A handwritten signature in black ink, which appears to read 'Jon Green', followed by a horizontal line.

Professor Jon Green

Deputy Pro-Vice-Chancellor (Education)

Meet the Team

We look forward to welcoming you to the University of Birmingham family of staff, students and alumni, and hope that Birmingham will become your 'home away from home'. At BISS we pride ourselves on the personal touch so throughout your stay our core team of staff will be available to answer your questions and help you get the most out of your time here in Birmingham.



Julie Kaul, BISS Officer

I am an International Development Project Officer based in the University's International Relations team. As the Birmingham International Summer School Officer I organise and manage the non-academic component of the programme. I look forward to spending time with you and helping you to immerse yourself into British Culture through the exciting social programme that we have planned. I will also be providing you with any general support throughout the programme.

BISS Student Ambassadors

Meet our student ambassadors who are here to provide you with support throughout the summer school and to ensure that you have an unforgettable experience!

Olivia Mitchell, Student Ambassador

I am a current student on MSci Psychology and Psychological Research. I am an active member of a number of societies: Birmingham university dance society, 'Brumsurf' (surf society), Psychosoc (Psychology society) and Salsa and Latino society. I have been a student ambassador, as well as taking part in University activities including a psychology prize bursary and international work experience bursary, which funded a psychology counselling placement in Ghana and a mental health placement in Sri Lanka. I've worked in psychiatric hospitals and undertaken voluntary work with children with special and complex needs at Midland Mencap. I thoroughly enjoyed working for last year's international summer school, and the experience really enriched my summer break. I look forward to meeting you!



Shantel Edwards, Student Ambassador

My name is Shantel Edwards and I am first year PhD student in the Department of English Literature, researching the marketing of contemporary Black British and British-Asian authors. I am currently a Project Assistant for a College of Arts and Law online resource that supports students when embarking, and returning, from a year abroad. I have undertaken all my four years of study at the University of Birmingham, have worked at the University and have lived in Birmingham for most of my life, so hopefully I know the campus and the city well by now and look forward to introducing you to it!



Ebunoluwa Ajewole, Student Ambassador

I am a 3rd year Dentistry student at the University of Birmingham (UoB). Being in a multicultural environment was something that was key in choosing a place to study and UoB provides exactly that! I have been able to enrich my interests in various cultures through the dynamic social life the University and City has to offer. During my time so far I have been able to get involved with various community projects that I am very passionate about. This includes feeding the homeless through voluntary work for the United Nations Millennium Development Goals committee and the Islamic Medical Society. I have been able to take advantage of the many opportunities that this research intensive institution has to offer which includes representing UoB at the very first INSPIRE dental conference. I am really enjoying my time at UoB and hope to continue making fond memories here!



Judit Pelikan, Student Ambassador

I am in my final year of my Master study, which is River Environments and their Management MSc. My undergraduate degree is Environmental Engineering, which I did in Hungary. I am involved into the Enactus Birmingham as Head of Finance, I am part of the University of Birmingham's International Students Association (ISA), Postgraduate & Mature Student Association (PGMSA) and I run with the Cool Runnings Athletic Club. I work at the Guild of Students as a Reception Assistant and I am a Postgraduate Ambassador. I was a Volunteer in Czech Republic and I participated at a short international course, 'Life cycle of an oil field', at University of Belgrade.

**Michelle Mumbi Gathigi, Student Ambassador**

I joined the University of Birmingham in September 2015 courtesy of the highly esteemed Chevening UK government scholarship. My time at the university has been wonderful, mostly because of the people I have met- individuals of diverse cultures, with great personalities and skills. The environment around the campus is vibrant and friendly, and one of the things I love most is the academic support that students receive, every step of the way during their course. When I'm not in class or studying, I participate in activities organized by the Postgraduate & Mature Student Association (PGMSA) and the Guild of Students. I am a member of the Salsa dance club, one of the best societies on campus! When I joined the university I received a warm welcome from fellow student ambassadors who made the transition process easy for me. In a similar fashion, I would love to share my experiences with other students, to help them fit in and show them how great this institution is.

**Judah Chandra, Student Ambassador**

My name's Judah and I am a fourth year Social Policy student. Last year I became the very first person to go on a year abroad in my department. I was in Copenhagen and it was such a fantastic experience. Now in my final year, I enjoy going to kickboxing twice a week and I find the exercise helps me to concentrate better in my studies. In the past, I was involved in really cool societies such as the acapella society (where I was a beatboxer), the social policy society (which I led for one year!), and various martial arts societies. At the moment, one of my current hobbies is doing KeyBoxing (Playing keyboard and beatboxing at the same time) and I've performed at a few events this semester. I've also been to India and China on study trips and am grateful for the University who helped me fund these fantastic experiences. University has a range of opportunities in which you can develop yourself and have fun. So get stuck in and I hope you enjoy Birmingham as much as I have!

**Hannah Cooper, Student Ambassador**

My name is Hannah and I have just completed my fourth year studying at the University of Birmingham. I study Psychology and hope to complete a doctorate in Clinical Psychology in the future, having spent the past year on placement in mental health services for older adults. During my time at university I have been a part of the gymnastic and pole fitness society, as well as the surfing society, and visited Morocco on a surfing trip in third year. Last summer I was on a mental health placement in Sri Lanka which gave me the opportunity to experience and work in an exciting and different culture.

**Dominic Morgan, Student Ambassador**

My name is Dominic and I'm in my second year studying a BEng in Mechanical Engineering. Throughout my time at university, I have taken part in many extracurricular activities including UBRacing, rugby and badminton. I also represent my school as a student representative and have worked for the guild as a student mentor. I have really enjoyed my time at university so far and hope to give you the same great experience.



The University of Birmingham

The University of Birmingham was established by Queen Victoria by Royal Charter in 1900 and was the UK's first civic or 'redbrick' university. It is a member of the prestigious Russell Group of research universities and a founding member of Universitas 21.

The University grew out of the radical vision of our first Chancellor, Joseph Chamberlain, and represented a new model for higher education, where students from all religions and backgrounds were accepted on an equal basis.

Since the mid-19th century to the Millennium, the University has made world-changing breakthroughs in medicine, science and engineering; it has championed excellence in the arts, impacted on government policy and made significant investments in campus facilities. Birmingham's global profile expanded greatly during this era, launching it into the arena of the top-100 universities in the world.

Birmingham has continued to be a university unafraid to do things a little differently, and in response to the challenges of the day. It was a founder member of the National Union of Students and the first university in the country to:

- be built on a campus model
- establish a faculty of commerce
- incorporate a medical school
- offer degrees in dentistry
- create a women's hall of residence
- have a purpose-built students' union building

The student population now includes circa 19,000 undergraduate and 9,000 postgraduate students, making it the largest university in the West Midlands region, and the 11th largest in the UK.

The University is home to the Barber Institute of Fine Arts, housing works by Van Gogh, Picasso and Monet, the Lapworth Museum of Geology, and the Joseph Chamberlain Memorial Clock Tower, which is a prominent landmark visible from many parts of the city, and the tallest free-standing clock tower in the world. Alumni include former British Prime Minister Neville Chamberlain and eight Nobel laureates.



Campus Facilities

The Library

The Library at the University of Birmingham provides more than 2 million printed books and manuscripts, over 50,000 electronic journals, 500,000 electronic books, and several hundred databases. Group, quiet and silent study areas are available in the Main Library in a modern, inspirational setting; subject specific site libraries provide support for medicine, dentistry and other subjects. PCs and group study facilities are bookable online. Instant help is available online across a range of platforms, as well as in person at the point of need.



As well as providing an excellent collection, specialist advisors are available to help students develop, improve and consolidate essential skills as they learn to succeed academically. Library Services provides a wide range of online and face-to-face opportunities for students to develop their research and study skills, as well as expertise in maths, academic writing, digital literacy and use of information technology.

Students can access training and support via the student portal (<http://www.my.bham.ac.uk/>) We are committed to providing excellent services and facilities and we always try to learn from student feedback.

Students can tell us what they think by:

- speaking to a member of staff at any library service desk.
- completing the form at <http://intranet.birmingham.ac.uk/library/feedback>

More information about library services is available on the Student Portal at <http://www.my.bham.ac.uk/>

Key links:

www.findit.bham.ac.uk

www.resourcelists.bham.ac.uk

facebook [facebook.com/UniBirminghamLibrary](https://www.facebook.com/UniBirminghamLibrary)

twitter [@UoBLibServices](https://twitter.com/UoBLibServices)



University Centre

University Centre is home to a wide range of facilities that you can use during your stay.

The food court is open between 8.30am and 4.30pm serving a variety of hot and cold dishes throughout the day. There is a 'Spar' convenience store next to the food court. Other amenities situated in University Centre include banks with cash machine facilities, a card shop with post office, a

bookshop (John Smith's student store), a hairdresser and opticians.

Starbucks & Costa Coffee

There are coffee outlets in the Muirhead Tower, Bramall Music Building, University Centre and the Guild of Students. There is also a coffee outlet in the Munrow Sports Centre.

Outlets are open between 8am and 5pm and you can enjoy a wide selection of the highest quality coffees as well as a wide range of food options.



Food and drink; shops and services on campus:

<http://www.birmingham.ac.uk/community/university-campus/retail/index.aspx>

Sports Centre

University of Birmingham Sport (UBSport) enjoys some of the best sports facilities of any redbrick University in the country. The Munrow Sports Centre is the hub of UBSport, where many facilities are based.



The gym has a comprehensive range of cardiovascular equipment and resistance machines, as well as a dedicated free-weights area with Olympic plates and bars.

The 25m swimming pool is equipped to accommodate swimming galas with 6 lanes, starting blocks, turning boards and anti-wave lane ropes. It also has a hoist to assist disabled swimmers.

UBSport have a variety of courts and pitches, including; two water based synthetic pitches, 50 acres of grass pitches, seven squash courts and three tennis courts.

University Sport: <http://www.sport.bham.ac.uk>

Wi-Fi

Wi-fi facilities are available across the whole campus. During your induction you will be given individual log in details and passwords which will enable you to make use of this throughout your stay.



Overview of the Birmingham International Summer School

The Birmingham International Summer School has been designed to offer you an opportunity to immerse yourself in the culture of another country and to study in one of the most diverse cities in the UK. Our Summer School has been specifically designed for students based overseas who would like to experience studying abroad for a short period, whilst gaining a valuable insight into the fascinating culture and heritage of Britain.

The Mathematical Finance and Financial Time Series Analysis programme covers the fundamental knowledge in financial engineering, which is a highly specialised and rapidly growing area. You will be able to explore the computational skills as well as the underlying mathematical and statistical theory to prepare for a career on the computational end of quantitative finance.

As well as the academic side of the course, you will also experience a varied and exciting social programme. A traditional pub night and a trip to Shakespeare's Birthplace in Stratford-upon-Avon are just some examples of the social activities you will have the chance to experience.

The three week programme is equivalent to an accredited undergraduate course (20 UK credits or 10 ECTS), and students on this programme can work towards obtaining credit. All students attending our courses will receive a certificate of attendance from the University of Birmingham on successful completion of their course.

The Mathematical Finance programme is delivered by University faculty who are experts in their field, through lectures, 'hands-on' computer lab demonstrations and work on mini-projects.

We hope that your experience on the Summer School will stay with you and that you will feel inspired to come back to visit the UK and Birmingham in the future.



BISS Week 1 Programme

Arrivals Sunday 17th July

	Monday 18 July	Tuesday 19 July	Wednesday 20 July	Thursday 21 July	Friday 22 July	Saturday 23 July	Sunday 24 July
Week 1							
09:00 - 09:30	BISS Induction	Departmental session	Departmental session	Departmental session	Departmental session	BISS Social Day Cambridge / London	
09:30 - 10:30							
10:30 - 11:30							
11:30 - 12:30							
12:30 - 14:00	BISS Welcome Lunch	Lunch	Lunch	Free time	Lunch		
14:00 - 14:30	Module Induction	Departmental session	Departmental session		Departmental session		
14:30 - 15:00							
15:00 - 15:30							
15:30 - 16:00							
16:00 - 16:30							
16:30 - 17:00							
18:00 - 21:00			BISS Social Quiz Night				

Academic lectures / workshops/self study

Free time

International Relations leading/staffing

(This schedule is correct at time of print but may be subject to change. A detailed timetable will be provided on arrival)

BISS Week 2 Programme

	Monday 25 July	Tuesday 26 July	Wednesday 27 July	Thursday 28 July	Friday 29 July	Saturday 30 July	Sunday 31 July		
Week 2									
09:00 - 09:30	Departmental session	Departmental session	Departmental session	Departmental session	BISS Social: Liverpool / Oxford				
09:30 - 10:30									
10:30 - 11:30									
11:30 - 12:30									
12:30 - 14:00	Lunch	Lunch	Free time	Lunch					
14:00 - 14:30	Departmental session	Departmental session		Departmental session					
14:30 - 15:00									
15:00 - 15:30									
15:30 - 16:00									
16:00 - 16:30									
16:30 - 17:00		BISS Social: Pub Night/ Cinema							
18:00 - 21:00									

Academic lectures / workshops/self study

Free time

International Relations leading/staffing

(This schedule is correct at time of print but may be subject to change. A detailed timetable will be provided on arrival)

BISS Week 3 Programme

	Monday 01 Aug	Tuesday 02 Aug	Wednesday 03 Aug	Thursday 04 Aug	Friday 05 Aug	Saturday 06 Aug	Sunday 07 Aug
Week 3	BISS Social Stratford Upon Avon	Departmental session	Departmental session	Departmental session	Assessments	Departure Day	
09:00 - 09:30		Departmental session	Departmental session	Departmental session	Assessments		
09:30 - 10:00							
10:00 - 10:30							
10:30 - 11:00							
11:00 - 11:30							
11:30 - 12:00							
12:00 - 12:30							
12:30 - 14:00		Lunch	Lunch	Lunch	Lunch		
14:00 - 14:30		Departmental session	Departmental session	Free time	Presentation ceremony 14:00 - 17:00		
14:30 - 15:00							
15:00 - 15:30							
15:30 - 16:00							
16:00 - 16:30							
16:30 - 17:00							
18:00 - 21:00	BISS Social: Balti						

	Academic lectures / workshops/self study
	Free time
	International Relations leading/staffing

(This schedule is correct at time of print but may be subject to change. A detailed timetable will be provided on arrival)

Social Events

(all of these events are free to attend)

The inclusive social programme is a great opportunity to get to know each other, with lots of fun activities designed to complement your experience of living and studying in Birmingham. Starting with the Welcome Lunch, the varied programme includes locally based activities such as a traditional pub night to activities further afield such as the opportunity to explore the historical city of Cambridge or the exciting capital city London. At the end of the programme there is a farewell event to celebrate your time and achievements at BISS.

Week 1

Monday 18th July BISS Welcome Lunch

We will be hosting a Welcome Lunch for Summer School students and staff on the first day of the course. The event will be a great opportunity to meet and network with your tutors and fellow course mates in an informal setting.



Wednesday 20th July On campus Quiz Night

Join in on a fun night of testing your arts and craft skills and finding your way around campus through the 'University quiz'. This ice breaker session is a great way to get to know your peers and the University better.

Saturday 23rd July Day trip to Cambridge

We have organised a coach to take you to Cambridge for a day of sightseeing.

The iconic city boasts spectacular architecture in the form of its colleges and churches, with culture abounding in the shape of museums, galleries, art centres and theatres, combined with beautiful scenery of green parks, wide open spaces and the River Cam, which winds through its heart.



Or choose.....

Saturday 23rd July London City Day Trip

Visit England's capital City! There is so much to discover in London. Whether you are interested in history, culture, entertainment, food or shopping this exciting city offers something for everyone!



Week 2

event**

Tuesday 26th July
Traditional English Pub Night

Experience an important part of British culture – and evening visiting some of Birmingham’s pubs while you socialise with friends and meet local people.

**please ensure that you bring your passport or driver’s license to this

Or choose....



Tuesday 26th July
Electric Cinema

Enjoy a summer blockbuster movie at the oldest working cinema in the UK. With its original 1930’s Art deco look you will truly be transported back in time!

Friday 29th July
Day trip to Liverpool

Explore the cultural city of Liverpool! Liverpool is a historic maritime city in northwest England and a designated UNESCO World Heritage Site. With world-class tourist attractions the city is a perfect location for a day trip! As the birthplace of the Beatles, BISS gives you an opportunity to visit The Beatles Story, which is a permanent exhibition, designed to guide you through the music and lives of the famous band ‘The Beatles.’



Or choose...

Friday 29th July
Day trip to Oxford

We have organised a coach to take you to Oxford for a day of sightseeing.

Oxford is a city in central southern England. Oxford is one of Britain's fastest growing cities in terms of population, and is one of the most ethnically diverse cities in the UK. The city is known worldwide as a university town, home to both the University of Oxford (the oldest university in the English-speaking world) and Oxford Brookes University.



Week 3



Monday 1st August Day trip to Stratford-Upon-Avon

We have organised a coach to take you to Stratford-upon-Avon for a day of sightseeing.

Stratford-upon-Avon is a market town and civil parish in south Warwickshire. It lies on the River Avon, 22 miles south east of Birmingham. The town is a popular tourist destination owing to its status as birthplace of the playwright and poet William Shakespeare, receiving about three million visitors a year from all over the world. The Royal Shakespeare Company resides in Stratford's Royal Shakespeare Theatre, one of Britain's most important cultural venues.

Wednesday 3rd August A taste of Birmingham: The Balti

We are taking you to a local restaurant to enjoy a Balti, a dish invented in Birmingham.

The Balti became famous when it first appeared in restaurants in the 'Balti' Triangle area of South East Birmingham around 1975. Balti restaurants are often known in Birmingham as 'balti houses.'



The Birmingham Balti is a style of cooking where every chef uses a different combination of spices cooked in a thin pressed steel 'wok' which heats up quickly. Either onions or tomatoes are used as a base with freshly cooked chicken breast or lamb used in most meat baltis. For those who prefer not to eat meat, vegetarian options are also available. During the fast cooking process over a high flame, ginger and garlic puree are added with a selection of spices including fenugreek, turmeric, cumin and a garam masala mix. Enjoy!



Friday 5th August Farewell and presentation ceremony

As our summer school programme draws to a close, the certificate presentation ceremony will be taking place on the final Friday afternoon.

This is a chance to say your goodbyes to the staff and your fellow classmates before departing on Saturday.

*****The social event schedule is correct at time of print but may be subject to change*****

PRACTICAL ADVICE

Living in Britain

Living and studying in a different culture can be very exciting and enjoyable, and is certainly one of the best ways to develop independence and a different perspective on life. Even though you are only here for a few weeks, life in the UK will be different to what you are used to. International perceptions of the British broadly revolve around their politeness and reserved nature. However, the UK has a diverse, multicultural population with residents from all over the world. There are strong regional accents and identities and, as in many countries, differences between lifestyles in rural and urban areas. This means that there is no single 'British' way of life and you will encounter a variety of attitudes and outlooks. This is all part of what makes the UK an interesting and dynamic country to live in. The following pages offer an introduction to some of the social attitudes and cultural norms that you might encounter and some handy practical information for your stay in the UK.

The British Council also has advice on living and studying in the UK that can be found at www.educationuk.org under the 'Living in the UK' tab.

Cultural adjustment

Everyone who lives in another country, even for a short time, may find that they have days when they miss their own food, their families, their friends or their weather, and just generally do not feel so happy. This is normal and is sometimes called 'culture shock'. You may go through stages when you will feel excited about the UK and the University and times when you will not. Here are a few tips that may help you to cope with cultural adjustment:

- Keep in touch with home, e.g. Skype, telephone, writing a letter, email
- Keep familiar things in your room such as photographs (or use as your screensaver)
- Make friends with other students – learn about other cultures
- Talk to a member of staff about how you are feeling
- For some students their faith community will be very important – check with the Chaplaincy for more information

For more useful information visit: <http://www.ukcisa.org.uk/Information--Advice/Preparation-and-Arrival/Facing-culture-shock>

Weather

The weather is one of the most frequently talked about subjects, and is an easy way to begin a discussion with a stranger! This is because in the UK the weather can change very quickly, even during a single day, and knowing what the weather forecast is means that people can plan appropriately what to wear and whether or not to take an umbrella with them. If you are going out for the day you may want to check the forecasts. A good website is <http://news.bbc.co.uk/weather/>

Drinking in pubs

Anyone aged 18 or over can buy and drink alcohol. Pub culture is part of British social life, but you do not have to drink alcohol to experience pub culture – all pubs and bars offer a good variety of non-alcoholic drinks and many of them serve food. If you are going to a pub or bar you should take photo ID showing your date of birth as you may be asked to prove that you are 18 or over. It is illegal to buy alcohol for someone who is under the age of 18.

Smoking

Smoking is banned in all public spaces, i.e. in buildings and at train stations and bus stops. Smoking is not allowed in any academic buildings on campus or in halls of residence. Some public buildings, e.g. restaurants, have a special outdoor area for smokers. If there is no special area you can smoke anywhere outdoors, but it is not considered acceptable to smoke in doorways or next to open windows. On campus you are not allowed to smoke within 10 metres of any building.

Out and About

- Queuing is common in public places. When you join a queue, make sure you join it at the back and wait your turn. The British public do not like it when people 'jump' the queue and will react in a number of different ways (from tutting and shaking their heads, to manoeuvring you out of the queue)
- Do ask people for directions if you are lost – most people are happy to help
- When waiting in line for an ATM, stand at least 1 metre (3ft) away from someone using the ATM to afford them privacy. If you need to ask where the nearest ATM is you should use the term 'cashpoint' as the term ATM is not widely used in the UK

Money

For your short visit to the UK it is not worth opening a bank account. You can use your ATM card to withdraw cash once you get here, your credit or debit (checking account) card to withdraw cash or for purchases, or travellers' cheques. All the major credit and debit cards e.g. Visa, Mastercard, etc are widely accepted in the UK.

British currency has coins to the value of 1p, 2p, 5p, 10p, 20p, 50p, £1 and £2, with notes to the value of £5, £10, £20 and £50. If you have £50 notes it is advisable to change them for smaller denominations as many small shops and cafés are reluctant to accept them.



Tipping

Tipping is not expected in the UK in the way that it is in some countries, such as the United States. There are no fixed rules for how much and when you should tip. If you do tip the amount you give should reflect how you feel about the service you have received. However, it is customary to tip 10% in restaurants (where service is not included in the bill – be sure to check this) and to leave a small tip in cafés where you are served at the table. It is not customary to tip in cafés, coffee shops, bars or informal restaurants where you order your food or drinks at a counter. It is not a requirement to tip in taxis, but it is customary to round up to the nearest pound on metered taxi journeys.

In addition to the British Council website there are many other sources of information about etiquette and culture in the UK such as: <http://www.tripadvisor.co.uk/Travel-g186216-s606/United-Kingdom:Tipping.And.Etiquette.html>

Students and the law

Overseas students are subject to the same laws as British citizens – with the exception of immigration, voting and citizenship. This means you are guaranteed the same protection of the law and the same civil rights. If you break the law, you are also liable for the same consequences as British citizens.

Health and Welfare

Medical care

As you will be in the UK for a period of less than six months, you will not be covered by the National Health Service (NHS) unless you are from the EEA or a country with a reciprocal arrangement (in which case you will be eligible for some, limited, free NHS treatment). You can check whether your country has a reciprocal arrangement on the NHS website.

<http://www.nhs.uk/NHSEngland/AboutNHSservices/uk-visitors/Pages/accessing-nhs-services.aspx>

All overseas students are advised to carry appropriate insurance to cover any treatment required. If you are not covered by the NHS you must ensure that you have adequate and appropriate insurance for your stay in the UK. In the UK, doctors, who are your main point of contact for medical issues, are referred to as GPs (general practitioners) and they are based in medical practices. If you require the services of a GP you may choose to visit the University Medical Practice which is located on Pritchatts Road. For more information visit www.theump.co.uk. Alternatively, there is a walk-in medical centre on Katie Road in Selly Oak which is open from 8am to 8pm every day and you do not need to book an appointment in advance.

Pharmacies (Chemists)

There are a number of pharmacies in Selly Oak close to Victoria Hall. If you have a minor ailment you can ask a pharmacist for advice as they have been trained to give advice for minor conditions. If they cannot help you or believe you should see a doctor they will direct you to see a GP. Many medicines which can be bought in some countries without seeing a doctor first can only be dispensed in the UK if you have a prescription from a GP. The pharmacist will be able to advise you about this.

Medical emergencies

If you or someone you are with needs urgent medical assistance you must telephone **999**. This number is free to call from all phones including mobiles. You will need to request an ambulance and be prepared to give details of where you are and what has happened. If you require emergency treatment but feel you are well enough to travel you can visit Accident and Emergency (A&E) at a hospital. The closest A&E to the University is located at Queen Elizabeth Hospital. You may feel that it is better to take a taxi. Emergency medical treatment is free even if you do not qualify for general NHS treatment. Directions to the Queen Elizabeth Hospital can be found on the hospital's website at www.uhb.nhs.uk

Faith - University multi-faith chaplaincy

The University Chaplaincy is a vibrant, warm, friendly, and exciting place where everyone is welcome. Students can meet in a number of different faith societies for prayer, meditation, worship and social gatherings. Throughout the day, a large lounge and kitchen facilities are available for study, chat, or the cheapest cup of tea or coffee on campus. The Chaplaincy has a quiet room as a space for personal reflection or just a moment's peace. You do not have to be 'religious' – the Chaplaincy is open to all and the chaplains are happy to meet with people on an informal and relaxed basis, in complete confidence, for conversation and support. Visit the Chaplaincy Website: www.chaplaincy.bham.ac.uk or email: chaplaincy@contacts.bham.ac.uk

Keeping Safe

Birmingham (and most of the UK) is generally safe but, just as in your home country, it is important that you use common sense to protect yourself and your property. Here are some tips to help keep you safe, and contact numbers to use in emergencies.

The University provides further information on safety online:
www.birmingham.ac.uk/welcome/international/safetyandsecurity.aspx

Emergencies

Off campus you can contact the police, fire, ambulance or coastguard services by dialling **999**. (You will then be asked which service you require e.g. police, ambulance or fire brigade). This call is free from any telephone.

On campus

You can contact University of Birmingham Security 24 hours a day if you need help. For routine enquiries the number is 0121 414 3000. In emergencies please ring 0121 414 4444. You should save these numbers to your phone for reference.

Fire alarm system

There is a fire escape plan in each room which explains the fire procedures and where the assembly point is. If the alarm goes off you must leave the building immediately and go to the assembly point. Do not stop to collect any personal belongings. You will not be allowed back into the building (even if it is a false alarm) until Security has reset the alarm. Never wedge open fire doors or block fire exits.

Electrical equipment

The British electricity supply works on 230 volts/50 cycles and most buildings have sockets which take a 13-amp square, three-pin plug. Please check that any electrical equipment you bring from home can be used on this voltage or can be converted. You should be able to purchase an adapter in the UK but please note that it is dangerous to overload sockets or circuits with too many adapters and you should never put a two-pin plug in a three-pin socket.

In your hall of residence

When you are not in your student accommodation keep your windows and doors closed and locked, even if you will only be out for a short time

Out and about

- Do not carry lots of unnecessary cash on you.
- Keep your money and valuables secure and out of sight.
- Keep your bank cards safe and separate from any note of your PIN numbers.
- Keep a copy of essential telephone numbers on you for emergencies.
- When you are travelling never leave your bags unattended. Do not ask strangers to look after them while you go for a coffee or into a shop. Bags left unattended in any public place in Britain will be rapidly removed by security, and are often destroyed.
- It is advisable to have some photo ID showing your date of birth out with you at all times, as you could be asked to produce ID when out for the evening or going shopping. Accepted forms of ID are your driver's licence or passport. If you are taking your passport with you, keep it in a secure pocket that can be fastened. You should leave a photocopy of your important documents in your room as a backup in case your ID is lost or stolen.

Having a safe night out

- Never walk home alone late at night – stay with a group of friends or order a taxi.
- If for any reason you do go out alone, tell someone where you are going and when you plan to be back.
- Always have a spare £15 and taxi number on you in case you need to take a taxi back to your accommodation.

Alcohol and safety

If you consume alcohol you need to take extra care. Note that most health insurance will not cover you if you injure yourself due to intoxication. Drink spiking (where drugs are added to your drink without your knowledge) is becoming an increasing problem in the UK and the rest of the world. A spiked drink may taste normal, but possible affects you should be vigilant for are dizziness, faintness, feeling unwell, feeling less inhibited, being unsteady, and feeling confused.

Never accept drinks from strangers or leave drinks unattended. If someone offers you a drink, go to the bar with them so you can watch the drink being poured or opened. If a friend is drunk, feeling sick, stumbling, confused, or faint, their drink may have been spiked. Stay with them and take them to a safe place, tell a friend or bar/security staff. If they collapse ring an ambulance on 999 immediately.

Keeping in touch

Finding the best way of staying in contact with friends and family back home can be confusing – especially if it's your first time in the UK. To help, here's some useful information about keeping in touch for your time at the University of Birmingham – and keeping the costs down while you do.

Online

The internet provides many low-cost ways of catching up with the people that are important to you.

Free software packages like Skype or Vonage enable you to make voice and video calls to others using your broadband connection at no cost – as long as the person you are calling has it installed on their computer too. If you need to contact someone without a computer, you can also make calls to overseas numbers via Skype and Vonage by buying international minute bundles, with calls starting at 1.4p per minute.

To use Skype or Vonage, you will need a good quality internet connection, available on campus and in your halls of residence.

Texting apps on smart phones, such as 'what's app' also allow you to text internationally free of charge, as long as you have an internet connection.

Mobile phones

Mobile phones (cell phones) are widely used in the UK for phone calls, text messages and the internet.

Buy a UK SIM

Many students choose to buy a mobile phone while in the UK. The pay-as-you-go option is favoured by most students, especially those here for a short time. If you have brought a handset with you, you may want to consider buying a pay-as-you-go UK SIM card. This will allow you to text and call your friends in the UK without it being as expensive as using your mobile phone that you have brought with you.

There are many different networks available in the UK including Orange, Vodafone, O2 and Three. You may want to visit a specialist website to find a package best suited to your needs during your time here. The carphone warehouse is one such company that can advise on different products. (www.carphonewarehouse.com)

Buy an international SIM

If you've brought a cell phone with you to the UK, using your existing SIM could be expensive – particularly if you're planning to use it to call home. Instead, consider buying a dedicated international SIM card while you're here. Although you won't always be able to keep your existing number, such SIM cards allow you to make international calls for as little as 1p per minute – often far cheaper than using your own SIM in the UK.

International calling cards

Once you've decided which tariff you're going to use, an international calling card could help you reduce the costs further. You simply dial an access number, followed by the number you're attempting to call to get reduced rate minutes to overseas landlines and selected mobiles. Like a pay-as-you-go SIM, the cost of the call is taken from the credit on your card, but you'll also be charged a connection fee.

Before you purchase an international calling card, however, check with your provider: not all networks allow you to use them.

Postal Services

Your family are welcome to send letters and parcels to you during your time at the University of Birmingham. The postal address for Victoria Hall is:

Name
Block/ Room Number
Victoria Hall Student Accommodation
17 Grange Road
Birmingham
B29 6BL
United Kingdom



Please note that air mail can take several weeks to arrive so ensure that your family checks the estimated delivery time before sending anything to you.

You can send letters home by visiting a post office. There is a post office located in the University Centre and staff will help you to send letters or parcels overseas.

Any local letters or parcels that have already been stamped can be put in a post box. These are painted red and you will see them on the streets out and about. There is a post box located near the Guild of Students at the East Gate of the campus. No postal collections take place on Sundays.

Travel Information

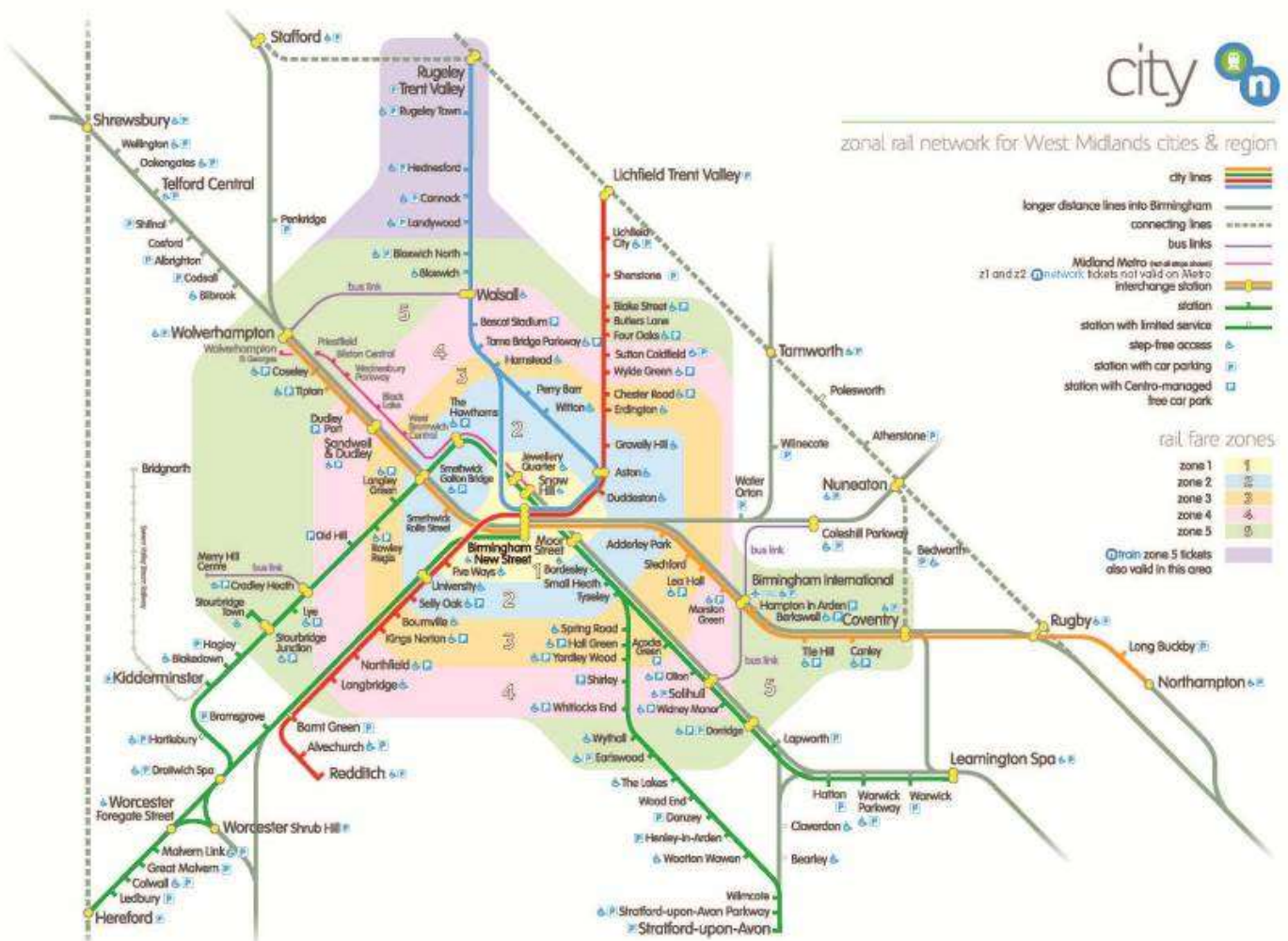
Although we will be organising a number of events and activities for you during your stay, we also encourage you to travel independently.

Getting to the University of Birmingham

The University of Birmingham is located approximately 3 miles (5 kilometers) away from the city centre.

By rail

Most cross-country services to Birmingham arrive at New Street station. The University has a train station on campus called 'University'. Up to six trains per hour depart for 'University' on the cross-city line (ten minutes to University station, final destination Longbridge or Redditch). The centre of the main campus is a five-minute walk from University station.



By bus

Numbers 61, X62 and 63 travel to the University campus, while the 636 serves the Medical School and Queen Elizabeth Hospital. The services all run frequently from the city centre. There is a travel information office outside New Street station, where you can obtain bus timetables and departure point information. Maps can be found throughout the city centre indicating bus stop locations. The cost of a single fare from the University to the city centre is £2.30. **Please note that you will need the exact money when paying for your bus fare.**

getting to uni is easy by bus

Getting to the University of Birmingham is easy by bus with our extensive network serving the campus from locations across the city.

Wherever you're going at whatever time of day our buses can take you there with fantastic value tickets and travelcards. We recommend the Student Regional Travelcard. Find out more on the back cover.



By taxi

There are taxi ranks at New Street station and throughout the city centre. The journey to the University takes about ten minutes.

Local travel information

Network West Midlands (www.networkwestmidlands.com) provides information on all bus, rail and metro services running in the region. Local transport is frequent and affordable.

The Network West Midlands logo is clearly displayed on all bus stops, rail stations, bus stations and Metro stops. Wherever you see it, you'll find information to make using buses, trains and Metro easier. You will find timetable information at bus stops and maps and journey information at all places where services meet, helping you switch easily from bus to train or bus to Metro.

National travel information

Coach travel

National Express www.nationalexpress.com, T 08717 818181 is a popular service for coach travel throughout England and services all of the airports, including Heathrow. The main National Express bus stop in Birmingham is the Digbeth coach station, near the Bull Ring shopping centre.

Megabus www.megabus.com is great for travelling on a tight budget, providing connections between major UK cities.

Train travel

National Rail Enquiries www.nationalrail.co.uk, T: 08457 484950.

For journey times, route details, and ticket prices visit the National Rail Enquiries website. Be aware that engineering works are often scheduled for weekends, particularly Sundays.

Another good website for checking on the best train prices is The Trainline www.thetrainline.com.

In and Around the City of Birmingham

Your Free Time - Things to do in and around Birmingham

The official visitor website for Birmingham is www.visitbirmingham.com

Here you will find details of What's On in the City, travel information, festival & events and downloadable maps and guides to the City.

About Birmingham

One of Europe's most exciting destinations, Birmingham is brimming with life and culture, making it a wonderful place to live, study and work. The city offers culture and diversity, and most of the students studying in Birmingham fall in love with the city. Approximately 40% of our graduates stay on to live in the city after graduation.

The city boasts a variety of art galleries, museums and live performances, all of which are easily accessible from campus. The thriving cultural scene also includes concerts, student theatre, dance and exhibitions, as well as events such as Birmingham Book Festival and Artsfest. The new Library of Birmingham located in Centenary Square is the largest civic library in Europe.

Home to the iconic Bullring shopping centre and Selfridges, as well as smaller shopping complexes The Mailbox, The Pallasades and Pavilions, Birmingham is a haven for shoppers, with everything from famous brands to independent labels to choose from.

The Visitor Information Centre is located in the new Birmingham Library in Centenary Square. You can contact the tourist information office on 0844 888 3883 or email at enquiries@libraryofbirmingham.com.



This web page provides you with a list of live events taking place in Birmingham that are free of charge www.livebrum.co.uk/free.

Thinktank

Thinktank redefines the concept of a science museum. Think of it more as a way to discover the world around you and the life you lead. From steam engines to intestines, this exciting museum has over 200 hands-on displays on science and technology including a state-of-the-art Planetarium and Giant Screen Cinema.

The UK's first purpose-built digital planetarium and one of the top 10 busiest small planetariums in the world.

www.thinktank.ac

Birmingham's Back to Backs

Carefully restored, atmospheric 19th-century courtyard of working people's houses. An atmospheric glimpse into the lives of the ordinary people who helped make Birmingham an extraordinary city.

On a fascinating guided tour, step back in time at Birmingham's last surviving court of back to backs; houses built literally back-to-back around a communal courtyard.

Moving from the 1840s through to the 1970s, discover the lives of some of the former residents who crammed into these small houses to live and work. With fires alight in the grates, and sounds and smells from the past, experience an evocative and intimate insight into life at the Back to Backs.

www.nationaltrust.org.uk/birmingham-back-to-backs

Aston Hall

Aston Hall is one of Birmingham's most treasured buildings. Rediscovered as part of the development project, Aston Hall boasts sumptuous interiors from the 17th, 18th and 19th centuries, including the magnificent Long Gallery.

Display rooms illustrate the part Aston Hall and its residents played in key moments in history, including the English Civil War, and how it prepared to receive royalty on more than one occasion.

www.bmag.org.uk/aston-hall

Gas Street Basin / Canals

Birmingham is said to have more canals than Venice.

Certainly, in the middle of the 18th Century, there were 174 miles of canal in the area. Now only 114 miles of them remain as navigable water, most of the rest have completely disappeared.

Walking the towpath gives you a chance to see the city and its surrounding towns in a new light. In the centre of the city, over 15 miles of canal have been improved to make safe and enjoyable walking - you don't need a boat!

Birmingham and the Black Country developed, at least in part, because of the canals. When walking or boating you can see some of the reasons why the history of the canals is part of the development of the city and its industries.

Once a thriving port, the Gas Street basin is where several canals meet offering colourful canal boats, bars, cafes and restaurants.

www.birminghamuk.com/gasbasin.htm

Ikon Gallery

From its beginnings in a small kiosk in Birmingham's Bullring, Ikon's reputation for innovation, internationalism and excellence has developed over 40 years.

Now housed in the neo-gothic Oozells Street School, Ikon has an artistic programme consisting of four interdependent strands.

The gallery features temporary exhibitions over two floors. A variety of media is represented, including sound, film, mixed media, photography, painting, sculpture and installation.

www.ikon-gallery.co.uk

Lickey Hills

The Lickey Hills are a range of hills in Worcestershire, England near the villages of Lickey, Cofton Hackett and Barnt Green. The hills are a popular country park area and they afford panoramic views over much of the surrounding countryside.

It is considered to be one of the most picturesque public spaces of its type in the West Midlands and is Green Flag recognised.

<http://www.birmingham.gov.uk/lickeyhills>

Moseley

Moseley is a suburb of Birmingham, England, south of the city centre. The area is a popular cosmopolitan residential location and leisure destination, with a number of bars and restaurants. The area also has a number of boutiques and other independent retailers.

<http://moseleyvillage.co.uk/>

The National Sea Life Centre

The National SEA LIFE centre takes visitors on a magical voyage beneath the waves. Spectacular displays including a walkthrough underwater tunnel provide close encounters with everything from starfish to seahorses sharks rays and otters. Regular talks and feeding demonstrations provide an even deeper insight into the magical mysteries of the seas. New: The Turtle Sanctuary helps these fascinating creatures who otherwise face extinction.

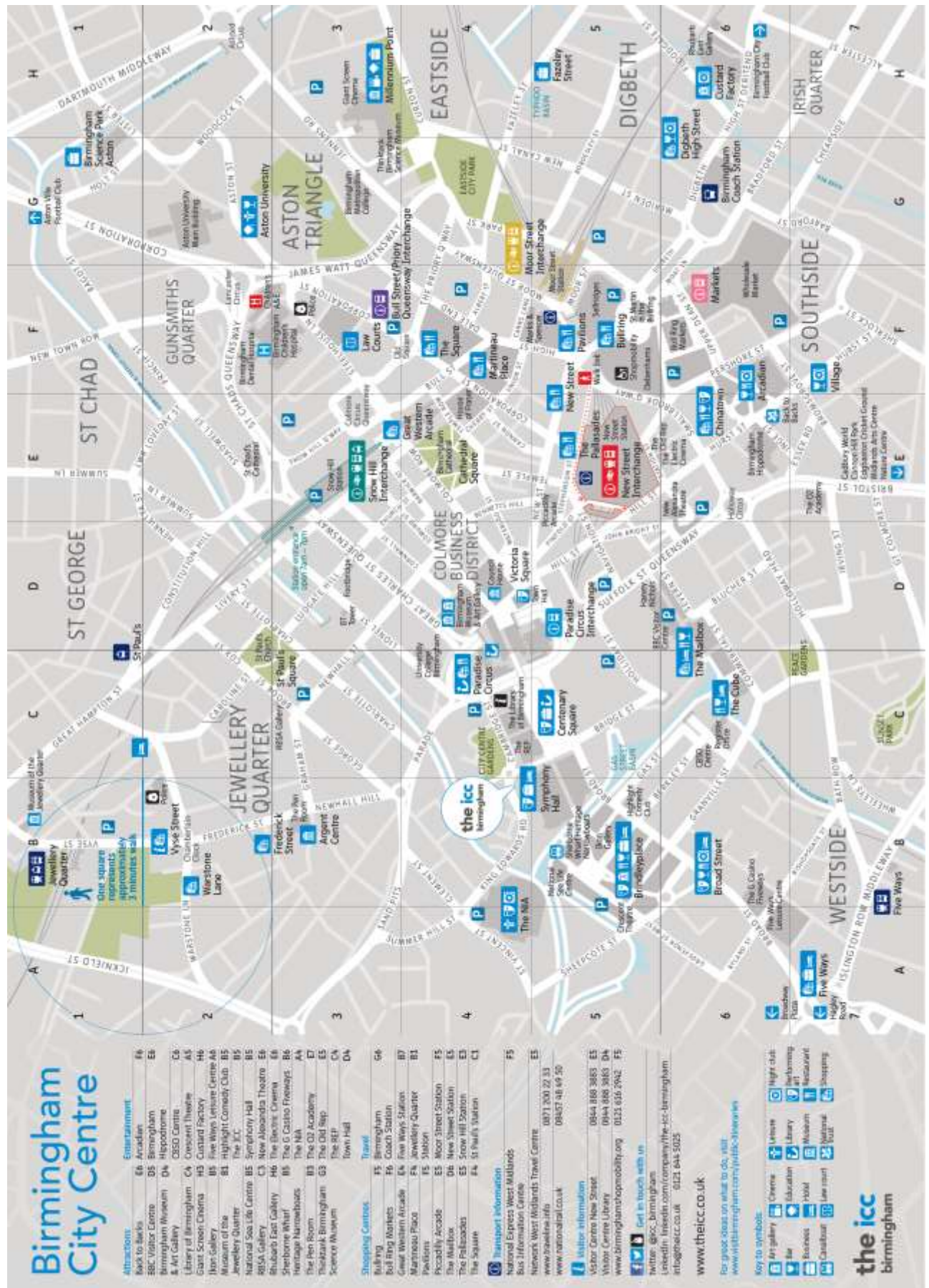
<http://www.visitsealife.com/birmingham/>

Black Country Museum

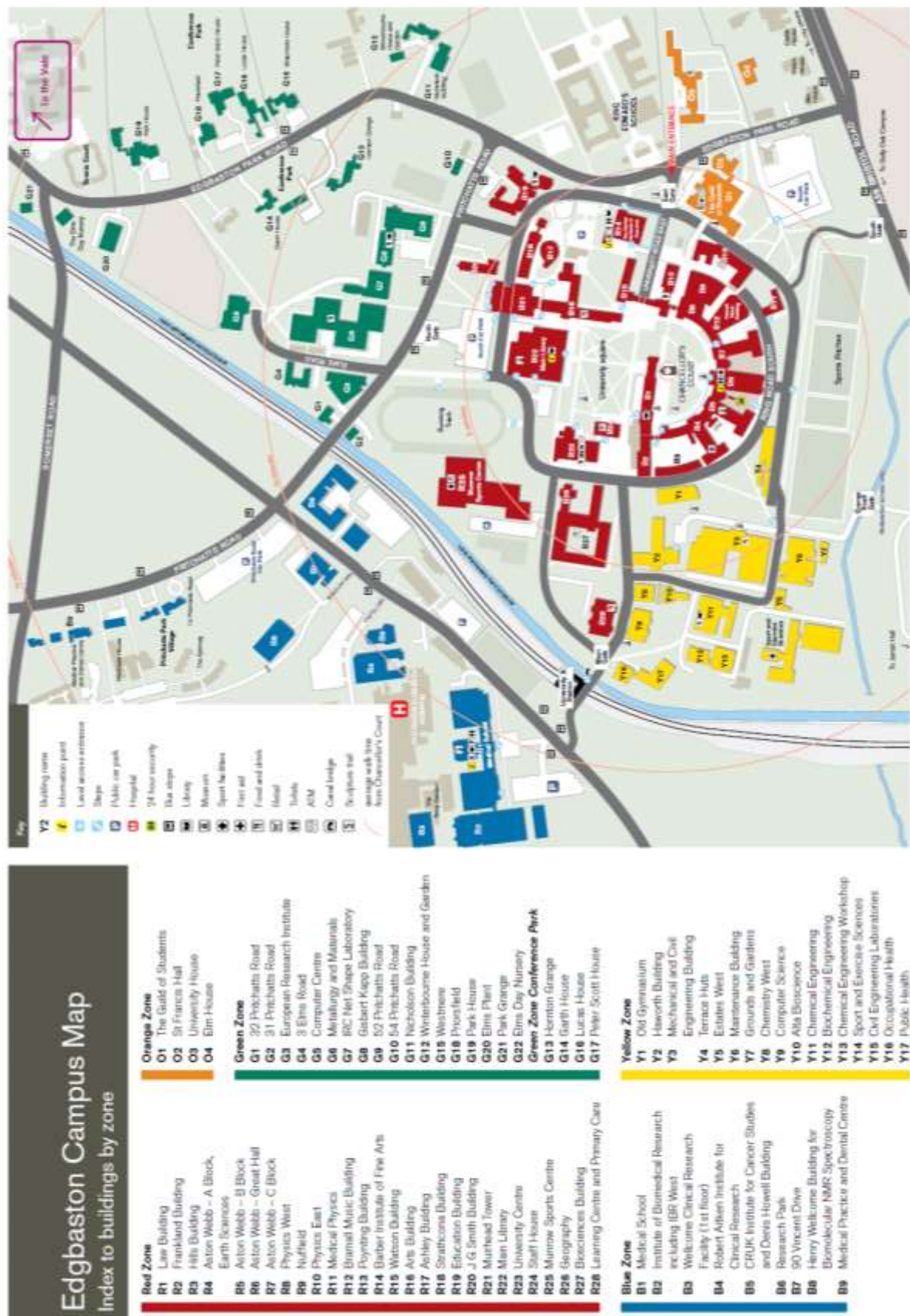
Discover a fascinating world when you visit this urban heritage park in the shadow of Dudley Castle at the heart of the Black Country. Historic buildings from all around the Black Country have been moved and authentically rebuilt at the Museum to create a tribute to the traditional skills and enterprise of the people that once lived in the heart of industrial Britain. <http://www.bclm.co.uk/>



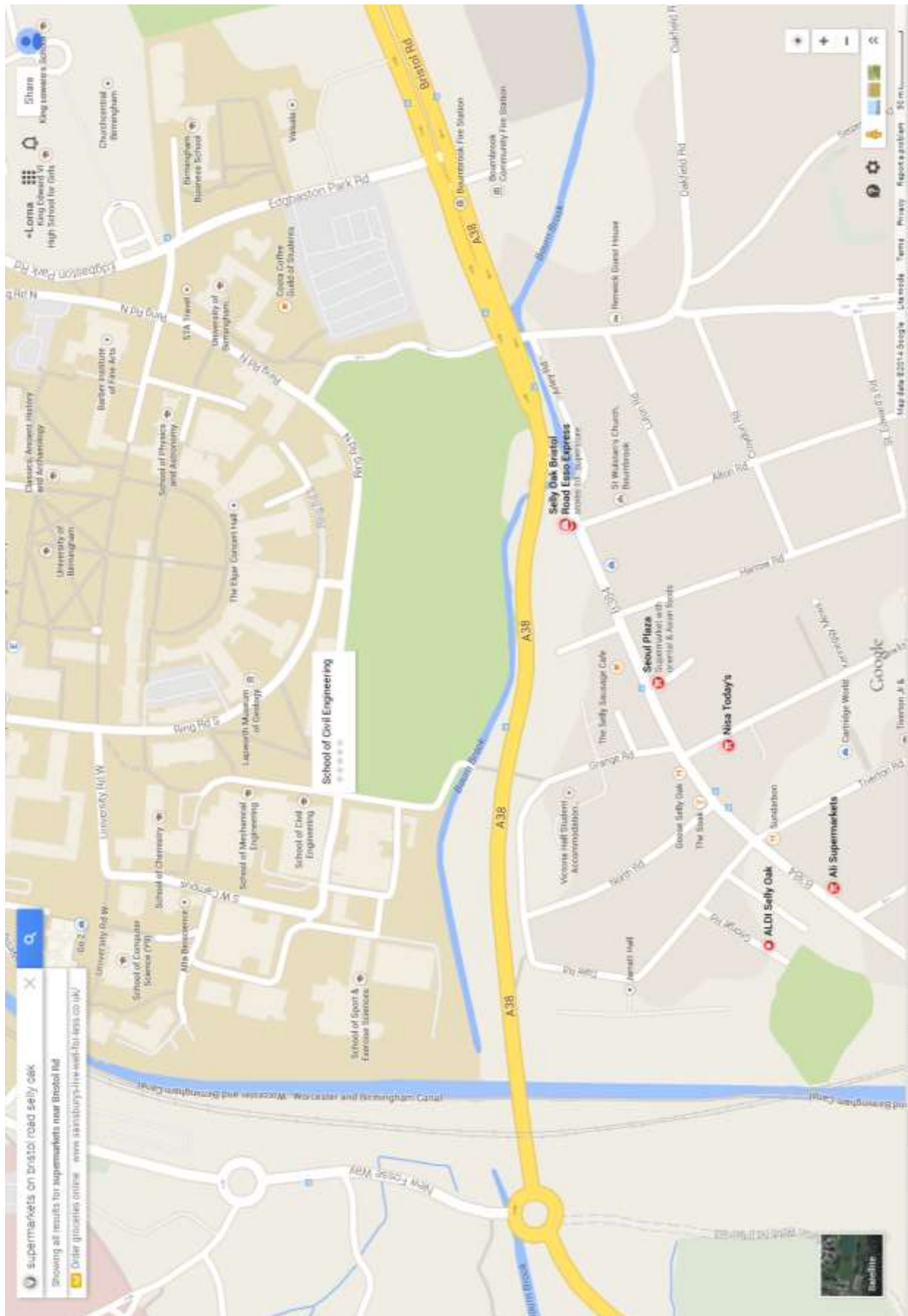
Map of Birmingham City Centre



Map of Campus



Map of the local area



ACADEMIC PROGRAMME INFORMATION

Mathematical Finance and Time Series Analysis Teaching Programme

Teaching programme for 18 July – 26 July:

We will learn the following topics in particular, but not exclusively:

- 1) Introduction to stocks/shares and lognormal random walks (including Supply and Demand)
- 2) Introduction to Portfolios, arbitrage and risk-free investments
- 3) Introduction to Options/Derivatives (Payoff functions, Rates of Return, and the effects of Gearing)
- 4) A simple derivation of the Black Scholes equation
- 5) American vs European options
- 6) Simple Binomial Methods for determining the value of European/American options
- 7) Introduction to Path Dependent Options
- 8) Simple Monte Carlo Methods for determining the value of Path Dependent options
- 9) Derivative Disasters/LIBOR Scandal/ForEx Scandal

The Lab Sessions will be based on MatLAB. Students will be provided enough introductory material. Students will be expected to implement the Binomial Method and simple Monte Carlo. Some games such as roll-dice and a Stock Market game will be introduced to facilitate understanding of introduction to Mathematical Finance.

The Class Test will be short and diligent students should be able to pass.

Teaching programme for 27 July – 05 August:

The coverage will be focused on the explorations of the following topics in particular, but not exclusively:

- 1) Introduction to stationary and non-stationary variables
- 2) Introduction to Autoregressive distributed lag models and forecasting
- 3) The Additive Model for a Time Series
- 4) Linear Filtering of Time Series
- 5) Autocovariances and Autocorrelations
- 6) Linear Filters and Stochastic Processes
- 7) Moving Averages and Autoregressive Processes
- 8) The Box–Jenkins Program

The Lab Sessions will be based on SAS. Students will be provided introductory material and work on a mini-project which will be presented in on the last day of the module. Students will be expected to implement suitable models to analyse a real-world dataset.

The oral presentation of the mini-project will be the formal assessment part for the 3rd week.

Programme notes will available during the course

Mathematical Finance and Time Series Analysis Lecturers

Dr David Leppinen

Dr David Leppinen graduated with a BMath from the University of Waterloo in 1993 before completing a PhD in Applied Mathematics at the University of Cambridge in 1997. His primary area of research is in fluid dynamics with a particular focus on natural convection and the dynamics of bubbles and droplets. His work on drinking water purification has been patented. He joined the University of Birmingham in 2005 and is now a Senior Lecturer in Applied Mathematics. He was been involved in teaching Mathematical finance since 2009.



Dr Hui Li



Dr Hui Li completed a PhD in Economics and Econometrics at the University of New Mexico in USA in 2003. She worked as a senior statistician at New Mexico State government and associate professor at Eastern Illinois University US before 2010. She started to teach time series econometrics courses since 2006. Her research is to apply the statistical methods to some real world problems such as environmental and energy economics, development and ageing issues and financial economics related topics. She is also interested in using survey methods to understand public opinions, and explore policy implications from my studies.

Notes

Notes