BIRMINGHAM INTERNATIONAL SUMMER SCHOOL

PROGRAMME INFORMATION HANDBOOK 2018

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Introduction to BISS 2018

The Birmingham International Summer School offers students the chance to study a three-week exciting programme in the Heart of England at on one of the most beautiful campuses in the UK, while having the opportunity to gain a valuable insight into the fascinating culture and heritage of Britain.

BISS Dates:

Arrival Day: Sunday 15 July 2018
Programme Dates: Monday 16 July - Friday 3 August 2018
Departure Day: Saturday 4 August 2018

Fees & Discounts:

Programme Fees: £2,500
Fees include:

- Tuition and accommodation
- Day trips and some evening and weekend activities

Fee Payment Deadline: 6 May 2018

Discounts Include:
U21 Discount
Students registered for full-time programmes at a Universitas 21 Partner University will be entitled to £250 discount.

Partner Discount
Student registered at a Partner University will be entitled to a discount of **£150.**

Early Application Discounts
Students who apply for their place before the **20 March 2018** will receive a discount of **£150.**

Application Process

Early Application deadline: 20 March 2018
Final application deadline: 22 April 2018

Applications can be made directly online on the BISS website.

Contact BISS: Web: www.birmingham.ac.uk/biss
Email: BISS@contacts.bham.ac.uk

Programme: **British Cultural Heritage**
Module code: 09 26531
College: Arts and Law
School: History & Cultures

Programme Information

Module Credits: 20 UK Credits/ 10 ECTS Credits/ 5 US credits

Entry Requirements - Students must:

- Be studying an undergraduate programme at a University outside the UK
- Be of good academic standing (based on a translated transcript, verified by their University or a letter of recommendation in English from their University provided during the application process).
- Have achieved proficiency in English Language equivalent to IELTS 6.0 overall with no lower than 5.5 in any band. Equivalent qualifications will be considered. Visit BISS Entry Requirements webpage.

Course Details

The Cultural Heritage programme, led by the Ironbridge International Institute for Cultural Heritage at the University of Birmingham, seeks to introduce students to the study of heritage sites. Students will explore premier examples of Britain's heritage, examine the ways these sites are managed, how they attract tourists from around the world and discover the art, architecture, literature, design and popular culture that form the basis of Britain's identity. The programme involves a mixture of field trips, self-guided study and expert led tours, underpinned by associated lectures that provide an academic context to help students get the most out of the visits.

Highlights from the programme include:

Field Trips

- **Ironbridge Gorge World Heritage Site**

In 1986 the Ironbridge Gorge was one of the first locations to be designated as a World Heritage Site within the U.K. This designation recognised the area's unique and unrivalled contribution to the birth of the Industrial Revolution in the 18th century; the impact of which is still felt across the world today. During our trip, we will visit some of the 10 museums that tell the story of the Ironbridge Gorge, including Blists Hill Victorian Town, an open-air museum that recreates the sights, sounds and smells of a 19th century Victorian town. We will also visit the iconic Ironbridge, the world's first bridge to be made of cast iron and the namesake of the picturesque Shropshire town that surrounds it.

- **Liverpool World Heritage Site**

In the 18th and 19th centuries, the port city of Liverpool was one of the world's largest trading centres. Pioneers in port technology and transport systems, the city played a key role in the growth of the British Empire. From the mid-20th century, the city became internationally renowned for its culture particularly as the centre of the "Merseybeat" sound, which became synonymous with The Beatles. Today, substantial investment in regeneration schemes - including regeneration of the historic dockyard - has established Liverpool as an excellent place to explore how British cultural heritage has evolved and developed.

- **Stratford-upon-Avon (Shakespeare Institute/ Shakespeare Birthplace Trust)**

Stratford-upon-Avon is a picturesque market town in the West Midlands of England with more than 800 years of history to discover. The town is a popular tourist destination owing to its status as birthplace of the playwright and poet William Shakespeare. The town is now home to the Royal Shakespeare Company and the Royal Shakespeare Theatre, one of Britain's most important cultural venues. A visit to Stratford will include a trip to the University of Birmingham's

Shakespeare Institute, which has enjoyed an illustrious past as a beacon for international Shakespeare scholarship, and the Shakespeare Birthplace Trust, a charity that cares for Shakespeare's family homes, celebrating his life and works through collections and educational programmes.

- **Oxford**

Known as the 'city of dreaming spires,' Oxford is known worldwide as the home of the University of Oxford, the oldest university in the English-speaking world. Buildings in Oxford demonstrate notable examples of every English architectural period since the late Saxon period. The historic buildings, colleges, libraries, museums, and winding medieval streets make the city excellent place to explore. Our visit to Oxford includes a walking tour to take in the major sites of the city, including those seen in major films such as Harry Potter. We also take a trip to the Pitt Rivers Museum, the University of Oxford's museum of anthropology and world archaeology, famous for its wooden display cases full of curious artefacts from around the world.

Teaching and Learning Methods

Lectures

Our programme of lectures are designed to underpin the field trips that you will be taking to important towns, cities, heritage sites and museums in the UK. The lectures will provide background information about many of the field trip locations and their significance to British cultural heritage.

Lectures are delivered by academic staff at the Ironbridge International Institute for Cultural Heritage, and academic colleagues from departments across the University of Birmingham. Lectures differ from year to year, and previous years' lectures have included:

- Introduction to Heritage: An opportunity to explore what is meant by 'cultural heritage', why it is significant, and how it is protected and managed in the UK.
- Museums and Collecting: Understanding museums and their collections - This lecture engages with the questions: what is a museum, what happens to objects when they enter a collection, and why do we collect?
- The Historical City of Liverpool: An introduction to the history and heritage of Liverpool, and the important sites that form the City's UNESCO World Heritage listing.
- A Song of Stone, Visiting English Castles: An introduction to the history of castles of England, and a fun and practical guide to visiting a castle.
- All about Shakespeare: Explore history of Shakespeare, and the role that the Shakespeare Institute and Shakespeare Birthplace Trust play in engaging the world with his life and works.

Self-directed study and 'out-of-classroom' learning:

Self-directed study is an essential aspect of the British Cultural Heritage programme, and all students are encouraged to take this initiative when participating in the programme. Whilst the lectures will provide an introduction to many of the sites that we visit, the majority of learning will take place out of the classroom and on field trips.

Prior to students' arrival at the summer school, they will receive a reading list with suggestions of books, websites and articles. Whilst not mandatory, the reading list will help students develop valuable background knowledge about British cultural heritage, and the sites that we visit.

During some field trips students will have the opportunity to take part in guided tours where they will be introduced to the sites by guides that are experts in their field. During other visits, students will have the opportunity to explore the sites on their own or in a group, with members of staff available to answer questions if needed. In both cases, these are great opportunities to get first-hand experience of a heritage site, museum or historic town, and gain more in-depth knowledge about their contribution to British Cultural Heritage.

Assessment

At the end of students' three-week stay with us they are asked to present, as part of a group, their impressions of the UK's cultural heritage based upon their observations and experiences. As such, during field trips, lectures and self-directed study, we encourage students to critically evaluate the cultural heritage that they experience. Each group will present their findings to the rest of the group and Ironbridge International Institute for Cultural Heritage staff.

Programme Outcomes

On completion of the programme, in addition to receiving 20 credits, students will have been given the opportunity to:

- Demonstrate a critical awareness of the role of cultural heritage in the West Midlands region.
- Demonstrate an understanding of the UK's heritage sector and some of the important organisations that manage heritage in the UK.
- Communicate research on an aspect of heritage and its value to society.

Programme: Principles of Biomedical Sciences: From Laboratory Bench to Hospital Bedside
Module Code: 02 28790
College: Medical & Dental Sciences
School: Biomedical Science

Programme Information

Module Credits: 20 UK Credits/ 10 ECTS Credits/ 5 US Credits

Entry Requirements - Students must:

- Be studying an undergraduate programme at a University outside the UK
- Be of good academic standing (based on a translated transcript, verified by their University or a letter of recommendation in English from their University provided during the application process).
- Have achieved proficiency in English Language equivalent to IELTS 6.0 overall with no lower than 5.5 in any band. Visit BISS Entry Requirements webpage.
- Relevant subject background will be required. Academic backgrounds in Biosciences, Pharmacy, Nursing, and Public Health will be considered.

Programme Description

This programme is designed to develop and enhance the professional and academic skills students need to acquire as a foundation for their learning in biomedical science in a UK context. In particular it will require students to reflect on how they learn, develop skills in finding, critically appraising and presenting information in a variety of formats. It will help students develop their writing and presentation skills and will introduce students to concepts of professionalism and patient safety. Additionally this will develop students' ability to integrate their learning across academic disciplines in order that they can develop a more broad approach to biomedical science, from learning to learn effectively across to patient care.

Programme Content

- Enquiry-based learning based on case, with assessed presentations
- Describing Evidence I
- Describing Evidence II
- Consultation Skills I
- Consultation Skills II
- Research Taster
- Postgraduate Programme Taster
- Learning from simulation
- Learning from Experts

Programme Outcomes:

- Demonstrate an ability to understand and use scientific and medical terminology in English appropriate to the subjects being studied
- Analyse clinical problems in an integrated way to identify features worthy of evidence-based enquiry
- Formulate simple relevant research questions to allow the appropriate investigation of the problems raised in biomedical scenarios
- Identify appropriate source of information and demonstrate the ability to search effectively for relevant items of interest
- Apply findings from the literature to answer questions raised by specific clinical problems
- Demonstrate an understanding of communication theory and skills and their fundamental importance to clinical practice
- Demonstrate an ability to use and apply basic science principles to investigate specially constructed clinical scenarios

- Demonstrate an ability to interpret clinical / biomedical data to aid in the diagnosis and management of patients described in specially constructed clinical scenarios

Teaching & Learning

Delivery Location: Campus and external sites
Total Contacts Hours: 44 hours

Assessment: 15-20 minute individual presentation based on enquiry-based learning generated from clinical scenario and reflection from programme learning experience (80%). This should include an appropriately written hand-out with key references (20%).

Programme **Film & Media**
Module Code 09 28789
College: Arts and Law
School: English, Drama, American and Canadian Studies

Programme Information

Module Credits: 20 UK Credits/ 10 ECTS Credits/ 5 US Credits

Entry Requirements - Students must:

- Be studying an undergraduate programme at a University outside the UK

- Be of good academic standing (based on a translated transcript, verified by their University or a letter of recommendation in English from their University provided during the application process).

- Have achieved proficiency in English Language equivalent to IELTS 6.0 overall with no lower than 5.5 in any band. Visit BISS Entry Requirements webpage.

Programme Description

This module is designed for delivery as part of the Birmingham International Summer School. It will provide students with an introduction to the academic study of film and media within the university environment, as well as the cultural, historical and social contexts of film and media in the UK. It will combine traditional in-class teaching with field trips, external visits and practical production sessions.

Programme content:

Week 1
- Module Induction – Audio-Visual Storytelling
- Ethical Filmmaking
- Research Skills for Film and Television
- Pre-production - Scripts-Storyboards-Floorplans
- Digital Distribution: YouTube
- Filmmaking 101 (a)

Week 2
- BBC Drama Village, Birmingham
- BBC Centre, Mailbox Birmingham
- Filmmaking 101 (b) – Shot Selection - Shooting for the edit – Transitions
- 'Sweded' Films
- Editing
- Studio Audience Trip

Week 3
- Studio Audience Trip
- Genre
- Authorship
- Performance
- TV Aesthetics
- Assessments

Programme Outcomes:

- Understand the basic principles of film and media scholarship in the UK
- Appreciate ways in which film and media are distributed and consumed in the UK
- Demonstrate an awareness of the history of film and media in the UK
- Develop and deliver ideas in writing and through verbal presentation

Teaching & Learning

Delivery Location: Campus

Contacts Hours: Seminar: 20
Practical Classes/workshops: 20
External visits: 20

Assessment: Oral presentation (75%); short evidence dossier (25%)

Programme: **Global Energy Systems: Powering the Future**
Module code: 04 28787
College: College of Engineering and Physical Sciences
School: Schools of Chemical Engineering, Materials and Metallurgical Engineering, Mechanical Engineering, Electrical Engineering and the Business School

Programme Information

Module Credits: 20 UK Credits/ 10 ECTS Credits/ 5 US Credits

Entry Requirements - Students must:

- Be studying an undergraduate programme at a University outside the UK
- Be of good academic standing (based on a translated transcript, verified by their University or a letter of recommendation in English from their University provided during the application process).
- Have achieved proficiency in English Language equivalent to IELTS 6.0 overall with no lower than 5.5 in any band. Visit BISS Entry Requirements webpage.
- Have studied physics at A level or equivalent (level 12 is also acceptable), or currently studying on a science degree.

Programme Description:

This programme will look at energy issues particularly novel materials and processes for enhancing energy efficiency. A unique interdisciplinary approach will be taken; covering materials formulation and manufacturing based on molecular scale understanding; devices and systems using new materials for energy conversion, transmission, storage and applications; energy processes and systems optimisation; and energy policy aspects. The Programme is ideal for students based overseas who would like to experience studying abroad and also gain understanding how the molecular scale phenomena affects and device and system level performance.
Uniquely delivered by University's internationally renowned Birmingham Centre of Cryogenic Energy Storage, a cross campus initiative involving the Schools of Chemical Engineering, Materials and Metallurgical Engineering, Mechanical Engineering, Electrical Engineering and the Business School, you will explore the role of molecule scale phenomena in materials formulation for energy applications, innovative materials manufacturing technologies, relationships between technology and money, through examination of a series of fundamentally linked case studies. Content will cover the latest knowledge in areas such as molecular modelling, materials formulation, state-of-the-art materials characterisation methods, manufacturing technologies, economics, whilst focusing on specific topics such examples of which may be:

- Energy - exact meaning of energy, forms and grades, energy carriers, understanding from different spatial and temporal scales
- Energy Triangles – fossil fuels, nuclear or renewables?
- Technology options for Energy Storage – batteries, hydrogen or liquid air?
- Energy Conversion – how to change energy into different forms?
- Energy transfer – is the quick the better?
- Energy Storage – how energy can be stored in air?

Programme Outcomes:

By the end of the module students should be able to:
- acquire knowledge and problem-solving abilities in new or unfamiliar environments within broader contexts
- communicate conclusions and the knowledge and rationale underpinning these, to specialist and non-specialist audiences, clearly and unambiguously
- demonstrate the ability to work professionally with a considerable degree of independence.

Teaching & Learning
Delivery Location: Campus and external sites
Delivery Methods: Lectures, workshops, pilot plant visits, hands on lab sessions
Total Contacts Hours: 44
Assessment: Independent individual and group study assessed at the end of the programme

Programme: **Global Environmental Issues**
Module code: 03 30650
College: College of Life and Environmental Sciences
School: School of Geography, Earth and Environmental Sciences

Programme Information

Module Credits: 20 UK Credits/ 10 ECTS Credits/ 5 US Credits

Entry Requirements - Students must:

- Be studying an undergraduate programme at a University outside the UK
- Be of good academic standing (based on a translated transcript, verified by their University or a letter of recommendation in English from their University provided during the application process).
- Have achieved proficiency in English Language equivalent to IELTS 6.0 overall with no lower than 5.5 in any band. Equivalent qualifications will be considered. Visit BISS Entry Requirements webpage.
- Have relevant subject background. Students should be studying environmental science, environmental engineering, public health, biosciences or other related topics at undergraduate level.

Programme Description:

The University of Birmingham is based in the heart of England where the first industrial revolutions took place and is one of the UK's top universities. This programme will look at current global environmental issues particularly focussing on air, water and soil pollution, and strategies for emissions reduction and/or remediation of polluted sites. A unique interdisciplinary approach will be taken, covering the sources, flows and effects of key environmental pollutants (e.g. particulate matter, nitrogen oxides, microplastics and persistent organic pollutants, and heavy metals), including laboratory and field-scale techniques and tools, and considering also the broader impacts of pollution on key ecosystems services and relevant environmental policy aspects. The Programme is ideal for students based overseas who would like to experience studying abroad and also gain understanding of how the molecular scale properties of pollutants affect their mobility, accumulation and remediation.

Programme Outcomes:

By the end of the module students should be able to:

- Formulate simple relevant research questions to allow the appropriate investigation of key environmental questions, and plan field or lab experiments to address this question;
- Identify appropriate source of information and demonstrate the ability to search effectively for relevant items of interest;
- Apply findings from the literature, and your lab / field studies, to answer questions raised by specific environmental problems;
- Communicate conclusions and the knowledge and rationale underpinning these, to specialist and non-specialist audiences, clearly and unambiguously;
- Demonstrate the ability to work professionally with a considerable degree of independence.

Teaching & Learning

Delivery Location: Campus and external sites
Delivery Methods: Lectures, workshops and field visits
Total Contacts Hours: 44
Assessment: Independent and group study assessed at the end of the programme

Programme: **Mathematical Finance & Financial Times Series Analysis**
Module Code: 06 28786
College: College of Engineering and Physical Sciences
School: Mathematics

Programme Information

Module Credits: 20 UK Credits/ 10 ECTS Credits/ 5 US Credits

Entry Requirements - Students must:

- Be studying an undergraduate programme at a University outside the UK
- Be of good academic standing (based on a translated transcript, verified by their University or a letter of recommendation in English from their University provided during the application process).
- Have achieved proficiency in English Language equivalent to IELTS 6.0 overall with no lower than 5.5 in any band. Equivalent qualifications will be considered. Visit BISS Entry Requirements webpage.
- Have prerequisites of calculus, probability and statistics, or have the equivalent level of knowledge. Students will be required to submit relevant transcripts to demonstrate they meet the subject specific requirements

Programme Description

The module covers the fundamental knowledge in financial engineering, which is a highly specialised and rapidly growing area. Students 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. The module is both technical and pragmatic. In the first half of Mathematical Finance, students will first learn to examine the financial derivatives using a continuous-time approach, then analyse a range of discrete time financial models and investment models. In the second half of the program, students will start the econometric modelling of financial time series. Students will learn various methods of fitting linear and non-linear models to time series data, statistical validation and their use such as forecasting and simulation u sing the statistical package SAS®. The formal elements of the module are intermingled with social events and English cultural heritage visits that turn the experience into an opportunity to engage learning with culture in a relaxed and enjoyable way.

Programme Content:

Mathematical Finance

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 introduce to facilitate understanding of introduction to Mathematical Finance.
The Class Test will be short and diligent students should be able to pass.

Time Series Analysis
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 Outcomes:

By the end of the module students should be able to:

- demonstrate a strong analytical skills in the mathematical finance
- demonstrate knowledge of theoretical and empirical methods involved in analysing real-world data
- evaluate differences in types of models, and demonstrate an understanding of the power and limitations of applied statistical analysis
- gain hands-on experience in using computing programs

Teaching & Learning

Delivery Location: Campus

Contacts Hours: Lectures: 26
Practical Classes/workshops: 10
Supervised time in studio/workshop/lab: 18
External visits: 13
Guided Independent study: 30

Assessment: Students will be formally assessed either by written tests or verbal presentations accompanied by PowerPoint