



## Oxford International Study Abroad Programme

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OXFORD INTERNATIONAL  
STUDY ABROAD PROGRAMME

The online courses are in response to COVID-19 pandemic. The short-term courses had been organised residentially at St Antony's College University of Oxford before the pandemic.

Oxford International Study Abroad Programme  
Online Course Summer 2021

Internet Data Analysis and Fundamentals of Research Methods





## 01 | Oxford International Study Abroad Programme

Oxford International Study Abroad Programmes are held at Oxford all around the year. The academic programmes are well organised for students from universities all over the world. The programmes allow students to benefit from knowledge of Oxford University, experience Oxford city and world-famous institutions in the UK.

The Online Courses are the transition in response to COVID-19 pandemic. The goal of these changes is to minimise the need to gather in large groups and spend prolonged time in close proximity with each other in spaces such as classrooms, dining halls, and residential buildings. Our actions are consistent with the recommendations of leading health officials on how to limit the spread of COVID-19 and are also consistent with similar decisions made by a number of our peer institutions.

Academic programmes are designed to provide talented and advanced university

students and professionals aspiring to pursue high-level research or management careers with the exposure to the key areas involved in exploring and discover the new trend of the world. These areas include governance and policy; design and planning; technology and innovation; economics, finance and commerce; and socio and cultural development. Aiming to connect top research and best practice, the courses engage participants in interactive and participatory lectures and seminars taught by leading experts at the University of Oxford as well as business and industrial sectors. It provides a global and comparative perspective on major aspects of contemporary and near future world development with case studies around the world, in order to explore innovative and sustainable practices that balance economic, environmental and social aspects of world development.

## 02 | Summer and Winter School Online Courses

Online courses are much like classroom courses, except that the delivery of learning materials (lectures, homework, quizzes, readings) and interaction with students and instructors will be through the online system. Students may need to purchase textbooks or access to materials online. Instructors and teaching assistants lead discussions and are available for feedback and questions. For courses that have a final exam, they are taken online through the supervision of the instructors.

A certificate of participation and final report with grades of each participant will be awarded to each participant who contributes constructively to lectures, seminars, discussions and exercises/assignments for the duration of the course.

The modules will include 3 weeks of intensive online lectures and tutorials, followed by a period for assignment work. Attendance at modules will be a requirement for study. The course will include taught material on research skills. The taught modules will include group work, discussions, guest lectures, and interaction and feedback with tutors and lecturers. Case studies are used to illustrate real-world examples and develop the students' knowledge and understanding of the subject. A variety of teaching methods will be used in online elements of the course.



## 03 | Summer Online School Course

### Internet Data Analysis and Fundamentals of Research Methods (45 hours in total)

#### Course Description

- The course is aimed at introducing the students with the areas of digital research and application of Big Data mining methods in Internet studies. The Internet is but one of many networks. Every network is different in its own way but there are striking similarities, whether we refer to traffic routing, infectious diseases, friendships on Facebook or gossip on Twitter. This course represents a primer in social network analysis, a longstanding approach to the generation and analysis of network data.
- In this course, the instructors will introduce many of the fundamentals of social network analysis, text mining and topic modelling, in addition to the fundamentals of research design. We will work on many examples through personal networks to newer network science approaches and advanced statistical modelling through lectures, seminars as well as group discussions with exercising tutoring.

#### Pre-requisites:

Basic to intermediate skills in programming in Python is required for this course, and please contact our administrative office for more details.

#### Final Assessments:

A small group research project presentation and an individual project.

#### Teaching Technology:

Microsoft Teams or Zoom.

### Course Plan (45 hours)

#### 1) Main Instructions on Internet Data Analysis and Fundamentals of Research Methods (32 hours)

- Introduction to Social Data Science and Data Mining
- Social Network Mining and Analysis – Basic Ideas
- Text-mining and Computational Text Analysis
- Social Network Analysis-Strength of Weak Ties and Centrality
- Data Visualization
- Netlogo and Agent-based Modelling
- An Introduction to Machine Learning
- Social Network Research Methods and Design

#### 2) Public Lectures (6 hour)

- The Future of AI and Machine Learning
- AI and Big Data
- Me, My Spouse and the Internet: Meeting, Dating and Marriage in the Digital Age
- The Secrets of Creativity from Big Data

#### 3) Workshops and Project Tutorials Q&A (5 hours)

#### 4) Sharing Session (2 hours)

What is My Life Like in Oxford by Two PhD students in Oxford University

## 04 | Sample Timetable (45 hours per course)

WEEK ONE	Day 1 09/08	Day 2 10/08	Day 3 11/08	Day 4 12/08	Day 5 13/08	Day 6 14/08	Day 7 15/08
UK Time 8:30-10:30 China Time 15:30-17:30	Class 1	Class 1	Class 1	Class 1	Public Lecture 1	Rest	Rest
Break	Break	Break	Break	Break	Break		
UK Time 11:00-12:00 China Time 18:00-19:00	Class 2	Class 2	Class 2	Class 2	Public Lecture 2		

WEEK TWO	Day 8 16/08	Day 9 17/08	Day 10 18/08	Day 11 19/08	Day 12 20/08	Day 13 21/08	Day 14 22/08
UK Time 8:30-10:30 China Time 15:30-17:30	Class 1	Class 1	Class 1	Class 1	Public Lecture 3	Rest	Rest
Break	Break	Break	Break	Break	Break		
UK Time 11:00-12:00 China Time 18:00-19:00	Class 2	Class 2	Class 2	Class 2	Public Lecture 4		



## 05 | Main Instructors and Guest Speakers

WEEK THREE	Day 15 23/08	Day 16 24/08	Day 17 25/08	Day 18 26/08	Day 19 27/08	Day 20 28/08	Day 21 29/08
UK Time 8:30-10:30 China Time 15:30-17:30	Class 1	Class 1	Project Tutorials 1	Project Tutorials 2	Project Presentation	Rest	Rest
Break	Break	Break	Break	Break			
UK Time 11:00-12:00 China Time 18:00-19:00	Class 2	Class 2	Opportunities for International Students and Q&A with Oxford Students Ambassadors	Project Tutorials 3			

Note: The schedule might be adjusted according to the actual situation.



Balazs Vedres

Associate Professor, Oxford  
Internet Institute, University of  
Oxford

Vedres’ research furthers the agenda of developing network science with social theoretical insight. His research results were published in the top journals of sociology, with two recent articles in the American Journal of Sociology developing the pragmatist notion of structural folds: creative tensions in intersecting yet cognitively diverse cohesive communities. Vedres’ recent research follows entrepreneurs, video game developers, jazz musicians, programmers, and graphic designers as they weave collaborative networks through their projects and recording sessions, analysing questions of the sources of creativity, gender inequality, and the historical sustainability of innovation systems. In another line of work, Vedres has analysed historical network evolution in the areas of transnational civic activism, politicised business groups, and the evolution of global economic flows.



Bernie Hogan

Senior Research Fellow, Oxford  
Internet Institute, University of  
Oxford

With training in sociology and computer science, Hogan focuses on how social networks and social media can be designed to empower people to build stronger relationships and stronger communities. Hogan has published in a wide variety of venues, from peer-reviewed papers in sociology journals (such as Social Networks, City and Community, Bulletin of Science Technology and Society, and Field Methods), in computer science proceedings (such as CHI, ICWSM, and CSCW) and related disciplines, particularly geography (with papers in Environment and Planning B, the Annals of the Association of American Geographers and Tijdschrift voor Economische en Sociale Geografie) and communication (with papers in New Media & Society, Social Media + Society, International Journal of Communication, and Information, Communication and Society). This is in addition to many chapters in books, grey literature reports and public opinion pieces. He is on the editorial boards of Social Media + Society, Journal of Computer-Mediated Communication and Social Networks.



Charles Rahal

Departmental Research Lecturer,  
Department of Sociology,  
University of Oxford

Charles is a social science methodologist and applied social data scientist with a background in high-dimensional econometrics. He completed his PhD in 2016. He is both a Departmental Research Lecturer here in the Department as part of the Leverhulme Centre for Demographic Science, and a Non-Stipendiary Research Fellow in Sociology at Nuffield College. Charles previously held a British Academy Postdoctoral Fellowship ('The Social Data Science of Healthcare Supply').



Taha Yasseri

Former Senior Research Fellow in  
Computational Social Science,  
University of Oxford  
Associate Professor of Sociology,  
University College Dublin

He has interests in analysis of large-scale transactional data and conducting behavioural experiments to understand human dynamics, machines’ social behaviour, government-society interactions, online political behaviour, mass collaboration and collective intelligence, information and opinion dynamics, hate speech and content moderation, collective behaviour, and online dating.



Alex Rogers

Professor of Computer Science,  
University of Oxford

Deputy Head (Teaching) of the Department of Computer Science, the Co-Director of the Autonomous Intelligent Machines and Systems Centre for Doctoral Training (AIMS CDT), and a member of the Cyber Physical Systems research group. Alex’s research applies artificial intelligence and machine learning within physical sensor systems to address real-world problems focusing on sustainability. My recent work has addressed future energy systems, such as the smart grid, citizen science platforms, and environmental monitoring, and typically involves the real-world deployment of novel approaches in devices, smartphones or the cloud. My current work addresses smart building energy management and the development of low-cost conservation technology.

## 06| Requirements

### 1) Sound academic performance

70 (on a 100 scale) at the minimum

\* 1st-year undergraduates from some partner universities do not need to submit academic results.

Requirements can be different due to different grading systems of different partner universities. For more details, please contact your home institutions.

\* Basic to intermediate skills in programming in Python are required for the Internet data analysis course, and our administrative office [apply@oxfordstudyabroad.org.uk](mailto:apply@oxfordstudyabroad.org.uk) will absolutely let you know more details before they send the admission email.

### 2) English proficiency

- IELTS: minimum 5.5 for overall average.
- TOEFL: minimum 85 for the overall score.
- College English Test (CET)-4: minimum 425 (applicable to Chinese university applicants only).
- College English Test (CET)-6: minimum 425 (applicable to Chinese university applicants only).

\* For those applicants who have not taken the above tests by the time of application or have not been in a professional English-speaking environment for years, their English proficiency must be assessed through tele-interview by the programme officer.

\* This requirement for proof of English proficiency is not required for applicants whose first language is English, those whose first language is not English but have been involved in a full-time degree-level academic programme at a university where English is the language of instruction, or those who have extensive experience working in a professional English-speaking environment.

\* The selection panel of the Course will consider the overall qualifications of each applicant.



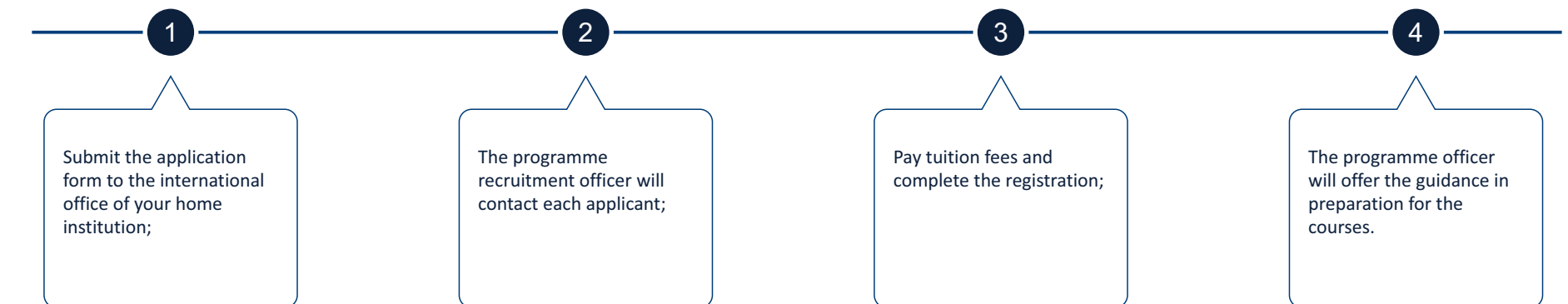
## 07| Application

### Application Requirements:

Undergraduate and Postgraduate (including PhD students)



### • Application Procedure:



For more information on the programme, please contact the international office of your home institution, or email to [apply@oxfordstudyabroad.org.uk](mailto:apply@oxfordstudyabroad.org.uk).