OXFORD FUTURE OF CITIES SUMMER COURSE

'Global Leadership for the Future of Cities: Smart and Sustainable Cities'

SUNDAY 8 AUGUST – TUESDAY 17 AUGUST 2021

Keywords: Smart and Sustainable Cities, Connected and Autonomous Vehicles (CAV), Drones, AI, Machine Learning, Robotics, Electronic Vehicles (EV), Micro-Mobility, Mobility as a Service, Shared Mobility, Low or Zero Emission, E-Commerce, Urban Logistics, Infrastructure, Planning and Regulations, Social and Ethical Issues

INTRODUCTION TO THE COURSE

The 'Global Leadership for the Future of Cities: Smart and Sustainable Cities' short course is designed to equip talented and advanced university students and professionals aspiring to high-level research or management careers with a critical knowledge of, and relevant leadership skills and experience for, the key areas involved in making urban development intelligent and sustainable.

This course is part of the Oxford Programme for the Future of Cities short courses. No matter where they are, cities face mounting and compounded challenges unlike ever before. The Covid-19 pandemic has ushered in a disruptive series of public health, economic, social, and political crises, while a growing number of cities are threatened by intensifying global risks, such as climate disasters, ethnic and racial tensions, cultural disintegration, conflicts, and depleting resources. The need to train leaders in tackling these challenges for the viability of our urban future and global peace, stability and prosperity has never been more pressing. Starting in 2016, these short courses are designed just for that, offering expertise in the key areas of sustainable urban development to make cities flexible, healthy, inclusive, resilient, and vibrant in response to evolving challenges and circumstances, in line with **the United Nations' Sustainable Development Goals**. These areas include governance and policy, design and planning, technology and innovation, business and economics, and social and cultural development.

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Each year the course focuses on important areas and trends in smart and sustainable urban development. This year's course will continue to focus on the development of Connected and Autonomous Vehicles (CAV), including aerial drones. Such development is on the verge of revolutionising urban mobility with technical, management and business innovation which is transforming the movement of people, goods and services, promising more intelligent, efficient and cleaner transport, increased safety and accessibility, and economic benefits. It is estimated that by 2035 the market size of CAV globally will be worth £650 billion. The Covid-19 pandemic has accelerated the growth of CAV with soaring applications in major sectors such as logistics, healthcare, and retail.

The course is intended to help attendees to approach the development and implementation of CAV from an integrated and critical understanding which encompasses technology, policy, planning, risks and safety, ethical and socio-legal issues, and business and economic matters. It will examine the key drivers, opportunities, challenges, and impact of CAV.

Aiming to connect top research and best practice, the course engages attendees in interactive and participatory lectures and workshops taught by leading experts at the University of Oxford and other leading UK universities, and management personnel and practitioners from business and industrial sectors. It provides a global and comparative perspective on CAV with case studies, in order to explore innovative and sustainable practices that take into account economic, environmental and social aspects of CAV's development.

To provide a balance between knowledge and practice, the course will present relevant challenges faced by local and global communities for the attendees to work on. The attendees will have the privilege of working under the guidance of experienced researchers and professionals to research and tackle these challenges.

All the attendees who successfully complete the course will receive a Certificate of Completion from the University of Oxford Network for the Future of Cities together with the course module sheet which attendees may

use to apply for academic credits at their home institutions. For high performing attendees of the course, the course management staff may provide references. The courses have contributed to the success of our course alumni's applications for relevant postgraduate degree courses at the world's leading institutions and for relevant internships and jobs at government institutions, NGOs, and business and industrial organisations in countries and regions such as Australia, Brazil, Canada, China, Europe, Singapore, United Arab Emirates, UK, and US.

The University of Oxford Network for the Future of Cities, which is devoted to creating world-class research addressing key challenges in urban development by bringing together global perspectives and relevant expertise across the University of Oxford and beyond, co-hosts the course in collaboration with two Oxford-based organisations devoted to sustainable urban development: Summit Education Enterprise and Oxford Sustainable Enterprise.

COURSE TIMETABLE - WEEK ONE

Date/Time	Sunday 8 August	Monday 9 August	Tuesday 10 August	Wednesday 11 August	Thursday 12 August
Topic	Orientation & Opening Lecture	Technological Innovation	Policy and Regulations	Infrastructure and Eco-system	Mobility as a Service
9:00–10:15 UK (16:00–17:15 China)	Welcome Talk Getting to Know Each Other & Course Induction	Lecture: 'CAV and Automation'	Lecture: 'Policy and Regulations of CAV in London'	Lecture: 'Infrastructural Requirements of CAV and Drones'	Lecture: 'Applications of CAV and Drones in Different Sectors in Urban and Rural Services'
10:15–10:30 UK (17:15–17:30 China)	Break	Break	Break	Break	Break
10:30–11:15 UK (17:30–18:15 China)	Opening Lecture: 'Development of CAV in light of Innovations in Smart and Sustainable Urban Mobility'	Skills Workshop: Research Planning & Academic Writing I	Skills Workshop: Project Management	Project Proposal Presentation	Skill Workshop: Public Speaking & Debating
11:15–12:15 UK (18:15–19:15 China)	Break	Break	Break	Break	Break
12:15–13:00 UK (19:15–20:00 China)	Project Workshop: Introduction to the Group Project	Project Workshop Demo from Previous Projects	Project Workshop	Project Workshop	Project Workshop
13:00–14:00 UK (20:00–21:00 China)	Virtual Oxford Tour	Group Project Time	Group Project Time	Group Project Time	Group Project Time
14:00 UK (21:00 China)	Rest	Rest	Rest	Rest	Rest

WEEK TWO

Date/Time	Friday 13 August	Saturday 14 August	Sunday 15 August	Monday 16 August	Tuesday 17 August
Topic	Economic & Business Case	Safety and Legal Issues	Social and Ethical Considerations	Preparation for the Final Reports	Final Day
9:00–10:15 UK (16:00–17:15 China)	Lecture: 'Economic and Business Case in CAV's Implementation in Cities'	Lecture: 'Operational Safety, Legal Issues Involved in CAV and Drones'	Lecture: 'Social and Ethical Impact of CAV'	Group Project Time	Final Project Report Presentations & Assessment (Part I)
10:15–10:30 UK (17:15–17:30 China)	Break	Break	Break	Break	Break
10:30–11:15 UK (17:30–18:15 China)	Project Workshop: Project Progress Feedback	Project Workshop	Project Workshop	Project Workshop: Group Project Presentation Rehearsal	Final Project Report Presentations & Assessment (Part II)
11:30–12:15 UK (18:30–19:15 China)	Break	Break	Break	Break	Break
12:15–13:00 UK (19:15–20:00 China)	Skills Workshop: Academic Writing II	Project Workshop	Project Workshop	Group Project Time	Final Project Report Feedback and Evaluation
13:00–14:00 UK (20:00–21:00 China)	Group Social & Cultural Evening	Group Project Time	Group Project Time	Group Project Time	Course Review & Summary Concluding Remarks
14:00 UK (21:00 China)	Rest	Rest	Rest	Rest	Farewell

Some of the Past and Present Teaching Faculty

Professor Debbie Hopkins

Professor Hopkins is an Associate Professor in Human Geography jointly appointed between the School of Geography and the Environment, and the Sustainable Urban Development programme. Professor Hopkins has been part of several large research centres and grant applications. In addition, Professor Hopkins leads research on low-carbon transitions, labour and mobilities, largely in relation to freight/trucking and waste.

Dr James Ingram

Dr Ingram joined Transport for London in 2007 and has held a number of roles in the organisation's strategic and environmental departments. In his current role as Principal City Planner, James is responsible for developing long term emissions reduction and energy policies for London's transport system

Professor Michael Keith

Professor Keith is Director of the Oxford Network for the Future of Cities and Former Director of the Centre on Migration, Policy and Society at the University of Oxford. He has also been Co-ordinator (2015-2018) of all ESRC investments in urban studies, responsible for the ESRC Urban Transformations programme, Newton programmes on cities in Brazil, India, China and South Africa; a portfolio of forthcoming grants valued at over £30 million. He also leads the largest international urban studies project called PEAK Urban at Oxford, a project funded by the Research Council UK. He has wide experience in public life and successful strategic management of large revenue and capital budgets. He was until 2006 the Leader of the Council in the London Borough of Tower Hamlets in the east end of London after spending twenty years in east London public life (including five years as leader of the council and eight years as lead on urban regeneration).

Professor Tim Schwanen

Professor Schwanen is Director of the Transport Studies Unit, Professor of Transport Studies and Geography in the School of Geography and the Environment, and Fellow at St Anne's College. Professor Schwanen's research is international in outlook, interdisciplinary in scope and located at the intersection of urban, transport, cultural, political and economic geography. It covers a wide range of themes and topics relating to cities and the mobility of people, goods and information, including processes of transition towards low-energy and just mobility systems. In 2013-2015 he was the editor-in-chief of the 'Journal of Transport Geography' and currently serves on the editorial advisory boards of nine academic journals in geography, transport studies and sustainability research.

Graham Smith

Graham Smith joined HSBC in 1996 and has more than 20 years of investment banking experience. In 2004 he set up the team responsible for HSBC's financing of Bus Rapid Transit (BRT) systems globally and has acted as financial adviser and arranger on the largest projects in the sector in recent years. He is currently the Director and co-leader of HSBC's Sustainable Finance Unit responsible for driving the growth in sustainable financing within the Bank. He is responsible for the development and global rollout of training within HSBC to increase awareness of the opportunities that a focus on Sustainable Business can bring to HSBC.

Professor Sir Chris Llewellyn Smith FRS

Professor Chris Llewellyn Smith is a theoretical physicist. He is interested in all aspects of energy supply and demand. Most recently: he was Director of Energy Research at the University of Oxford from 2011 to 2017, and President of the Council of SESAME (Synchrotron-light for Experimental Science and Applications in the Middle East) from 2008 to 2017. He has served as Chair of the Council of the world fusion energy project ITER, Director of the UK's fusion programme, Provost and President of University College London, Director General of CERN (1994-1998, when the Large Hadron Collider was approved and construction started), and the first Chairman of Oxford Physics (1987-92).

STUDENT FEEDBACK

'Professors from the University of Oxford use vivid and interesting cases to help us understand the governance issues of autonomous vehicles and drones today, as well as the legal and ethical issues in society, which are not only relevant to our lives, but also help us understand the challenges facing front-end technologies.'

Y L Yuan, UIBE

'The Oxford programme has shown me a vast new world, encouraged me to pursue my academic goals, and also brought me a lot of growth. It was the experience of a lifetime. Thank you for the dedication of every teacher!'

Y C Liu, Central South University

'This program was exceptional, it really inspired me to pursue further education. If you want to have your postgraduate studies in the UK, this is the program you should join!'

Captain S Y Yang, Central South University & Southern Airlines

'Despite being an online course, the sharing of professors and scholars has taken me beyond the limitations of geography and time, and created a very stimulating learning experience.'

Y Lu, Tsinghua University

'Through this course I have gained a deep understanding of the various influences that a new technology may bring to society, and have learned how to scientifically and rationally evaluate its follow-up development, so as to make the most reasonable decision based on the information I have at the present stage.'

Y Hou, Peking University

'I have met many inspiring examples of academics and professionals who have built their own projects and worked with policy makers and entrepreneurs to make a difference. The networking opportunities were plenty and the conversations I had with academics and professionals were the most inspiring and eye opening ever.'

S Mohammad, University of Sussex & Dubai World Trade Centre

'Through the program I was able to meet one of the partners at Foster + Partners and actually talk to them about design work and what their approach is to the area, and being able to meet with that partner actually opened the door for me to the interview through which I was hired by Foster + Partners at their headquarters in London.'

A Vann, Brown University

'With the explanations from laboratory professors, we learned more about the application of CAV technology in daily life, as well as the construction of urban infrastructure to support the CAV system. To be able to see the techniques during the lectures which will be applied into real life was the most memorable experience during the programme.'

X H Wang, UIBE

'The Future of Cities programme helped me find my current job at HR&A Advisors' New York headquarters! I listed the University of Oxford Future of Cities Summer Course on my resume and was asked about it multiple times during interviews. The team-based course project I completed for the local councils in Oxfordshire and Oxford during the summer course definitely helped me get this job! '

C Hooks, Washington University in St Louis & Peking University

'During the lectures, experts and scholars systematically commented on the benefits and impacts of autonomous driving technology from both positive and negative aspects, and evaluated and analysed the research and development of autonomous driving technology and UAV from the aspects of government demand, enterprise research and development, academic research and financial investment, which cultivated students' critical thinking!'

D H Deng, Peking University

Eligible Applicants

Undergraduate and postgraduate students and young professionals from all relevant fields, including but not limited to following fields in Science and Technology, Humanities and Social sciences: e.g., AI, Computer and Data Science, Business & Economics, Energy Studies, Ethics and Philosophy, (Geo or Environmental) Engineering, Environmental and Climate Change Studies, Finance, International Relationship, Law, Politics, Public Health, Public Policy and Administration, Sociology, Transport Studies, Urban Design and Planning.

Admissions Requirements

We welcome talented students from all over the world to apply to our online short courses. We also list below the suggested criteria for the successful participation in the course.

1. Academic Standing

We normally expect a GPA 3.0 out of the 4.0 scale grading scale or 80 out of the 100 grading scale at the minimum, though we do grant exceptions to applicants with special talents or special circumstances.

2. English Language Ability

We normally expect applicants to have achieved and provide proof for one of the following English language proficiency test results:

IELTS: minimum 6.0 for overall average and each area

TOEFL: minimum 85 for the overall score (listening section: minimum 20)

College English Test (CET)-4: minimum 530 (applicable to Chinse university applicants only)

College English Test (CET)-6: minimum 510 (applicable to Chinese university applicants only)

*For those applicants who have not taken the above tests by the time of application, their English proficiency needs to be assessed by our

Admissions Team via online oral interview and may also be assessed by their home institutions.

*The requirement for proof of English proficiency can be waived for applicants whose first language is English, those whose first language is not English but have successfully completed 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.

3. Strong intellectual curiosity, a strong sense of social responsibility often evidenced by extra-curricular engagement, volunteering, internship, or work experience relevant to the core themes of this course.

4. Strong interest in global leadership, economic and social development, business and management, public health, policy and governance, sustainable (urban) development, and environmental and climatic change studies.

5. Ability and initiative to interact with teaching faculty and students in the UK.

6. Ability to work with a team on a group project.

7. Preference will be given to those intending to pursue postgraduate study in the UK.

Apart from completing the online application form, applicants are welcome to submit the following documents in support of their applications:

- Academic records and transcripts
- Curriculum Vitae

The Admissions team will consider each applicant's overall qualifications, relevant experience, and the ability to interact with teaching faculty at Oxford when making a decision concerning admissions.

Course Fee

- **£1550 per student**
- **£1950 per professional**

How to Apply

Please complete the following tasks on the course application portal (please click here) before the **application deadline 30 June 2021.**

* Early Bird Discount: we grant £100 discount for applicants who submit their applications before 31 May 2021.

*An additional £150 discount will apply to applicants who sign up for a second course offered through the Oxford Programme for the Future of Cities.

*A certain level of scholarship is available to applicants with strong academic or professional profiles.

1. Fill out the online application form.

*Please be aware that applicants may need to go through the internal assessment or selection process for this course at their own universities first.

2. Upload a digital passport-size photo and supplementary supporting documents.

*For those applicants who have not taken the above tests by the time of application, their English proficiency needs to be assessed by the Admissions Team via online oral interview (or by the applicants' home institutions). Please view the above relevant notes for those who may be exempt from the requirement of proof of English proficiency.

After Receiving your Application...

1. The Admissions Team aims to notify the applicant of the admissions decision within five working days upon receipt of the application package.

*The applicant will also be notified if an online oral interview is required before the Admissions Team makes the final decision.

2. Those who have been accepted onto the course will need to pay the entire course fee within five working days after having been admitted onto the Course. Information about payment methods will be provided with the Official Letter of Acceptance.

3. The Admissions Team, upon receiving the payment of the course fee, will issue a confirmation email together with instructions on how to prepare for the Course prior to its commencement.

Contact Information

For any enquiries, please visit the following website, WeChat account, or WeChat platform.

Website: www.futureofcities.ox.ac.uk/short-courses

WeChat: summit-oxford

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