Imperial-RCA Design for Global Challenges Winter School

ABOUT IMPERIAL COLLEGE LONDON

Consistently rated amongst the world's best universities (4th in Europe and 9th in World, QS World University Rankings 2020), Imperial College London is a science-based institution with an international reputation for excellence in teaching and research. Imperial attracts over 17,000 students and 8,000 staff of the highest international quality from over 136 different countries.

Since its foundation in 1907, Imperial's contributions to society have included the discovery of penicillin, the development of holography and the foundations of fibre optics. This commitment to the application of research for the benefit of all continues today, with current areas of focus including interdisciplinary collaborations to improve global health, tackle climate change, develop sustainable sources of energy, address security challenges, develop data management and analysis technologies for supporting data driven research, and tackling problems at molecular scale.

Located in the heart of London, Imperial has the greatest concentration of high-impact research of any major UK university, according to the Research Excellence Framework (REF) results published in December 2014. Innovative research at the College explores the interface between science, medicine, engineering and business to deliver practical solutions to a broad spectrum of societal and economic issues. We address these challenges on three levels, which are interdependent (core disciplines, multidisciplinary research and global challenges). Many of our academics are engaged with all three and our academic staff includes some of the world's most renowned scientists, medics and engineers whose contributions to their field have been recognised internationally.

Imperial's Centre for Continuing Professional Development had extensive experience in developing and running a range of online and on campus schools for undergraduate students. We draw on Imperial's education pedagogy of online learning in designing and delivering the winter school to provide an engaging learning experience for students. Various interactive applications are used to support live teaching, online group projects are designed to assess students' learning outcomes and virtual social platform created in Flipgrid provides students with a networking environment.

ABOUT ROYAL COLLEGE OF ART (RCA)

The RCA started life in 1837 as the Government School of Design. In 1967 the RCA was granted a Royal Charter which enshrines its purpose as being 'to advance learning, knowledge and professional competence [in art and design'... through teaching, research and collaboration with industry and commerce.' To this day, it remains the world's most influential wholly postgraduate university institution of art and design, offering MA, MPhil and PhD degrees. Our graduates have led many global businesses (including IDEO, Kia Motors, Jaguar Land Rover, Burberry, Dyson and Apple).
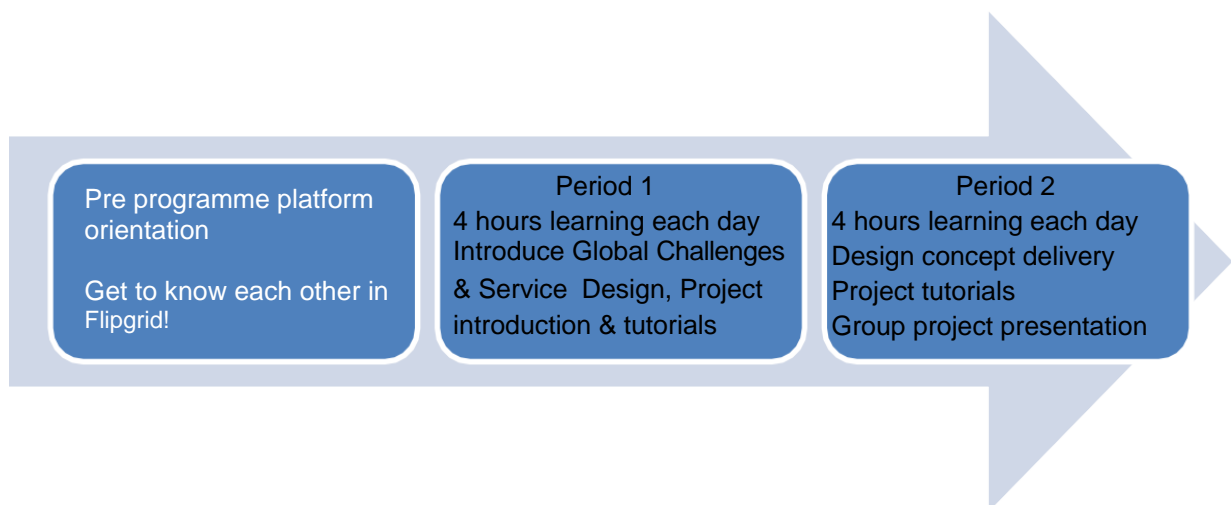
The RCA is ranked as having the 'highest number of student spin-outs with university ownership in recent years in the UK' (PACEC report for HEFCE, 2015) and was recently awarded the UK Business Angels Association award for UK University Accelerator of the Year. The RCA is renowned for teaching and incubating real-world innovation and has been named as the world's leading university for Art and Design for the past 6 years by QS Rankings.

Leading companies choose to work with the RCA on custom executive education programmes

could either control or reduce the global challenge. They will also engage in fun social activities to learn cultural differences and visit London Landmarks virtually.

Period 2: During this   , students will apply their creativity and design ideas to develop their service. They will also explore how advances in robotics and data science technology are transforming the future. They will hear from successful design entrepreneurs sharing their work. The effective communication workshop will support them with their presentation skills in preparation for their final day. At the end of the   students present their service design to a panel. This is an opportunity to put all their learnings from throughout the course into practice.

The entire programme will be taught in English.

| Pre programme platform orientation

Get to know each other in Flipgrid! | Period 1
4 hours learning each day
Introduce Global Challenges & Service Design, Project introduction & tutorials | Period 2
4 hours learning each day
Design concept delivery
Project tutorials
Group project presentation |

APPLY LEARNING THROUGH GROUP PROJECT

The group project not only provides an opportunity for students to learn teamwork, it is designed for students to apply their learning throughout the winter school and to assess their learning outcomes.Students will be allocated in small groups at the start to identify one area of a global challenge that needs tackling and propose an innovative idea to design a service that could either control or reduce the global challenge. Students will be encouraged to think creatively and innovatively to develop ideas which will be challenged by tutors who will provide guidance, tools and support them in developing their service. Each group will present their ideas to a panel on the final day and the best project team will be awarded a prize and a letter of recognition. All students will receive a project assessment score.

LEARNING OUTCOMES

On completion of the winter school, students will be able to:

    Analyse and evaluate the impact of climate change on society and the environment.
    Analyse and evaluate the impact of major global diseases and the changing future of healthcare policies and innovations.
    Analyse and evaluate the challenges of the internet and new frontiers in cyberspace/digital

media security that companies face.
Understand how advances in robotics and data science technology are transforming the future.
Apply service design tools and develop a service to tackle a global challenge.
Recognise how companies have started up from entrepreneurs.
Develop and practise valuable professional skills in team building, leadership and presentation.
Develop and employ team building skills to work as a team towards a group design project.
Find out what it is like to study in the UK and get an insight into the British culture and London Landmarks through social activities.

TEACHING METHODS

RCA - Learning by doing

We use a 'learning-by-doing' practice-based model that draws upon the ethos of the RCA studio context, an immersive, imaginative space where cross-disciplinarity and creativity push the boundaries of innovation. The RCA introduces the creative and critical skills that are essential to all academic and industry researchers in the 21st century. Participants return to their organisations as ambassadors with the confidence to influence and lead cultural change. We find challenge-based practical projects, small teams and prototyping encourages interaction and breaks down barriers.

RCA - People-Centred, Interdisciplinary Approach

The RCA takes a human-centred approach to innovation, informed by our specialisms in art, design and humanities, but also by our well-established track record of successful collaborations with social science, science, engineering, technology and medicine. A common thread throughout all workshops is a commitment to inclusivity, ethics and integrity. Many of the underpinning people-centred methodologies are informed by longstanding research from The Helen Hamlyn Centre for Design. The HHCD approach to research and innovation centres on inclusivity, interdisciplinarity and co-creation, with specialist expertise in ageing, diversity, healthcare, societal problems and global issues.

RCA - Online networks and teaching

The programme would be anchored in a dedicated virtual learning environment enabling participants to access knowledge before, during and after the programme concludes. It will act as the hub for the exchange of participant content and ideas, peer to peer interaction and cohort building, peer review panel learning and online mentoring.

Since March 2020 the RCA has used a combination of Moodle, Zoom and Mural for all postgraduate teaching and executive workshops. We have held international webinars for up to 700 guests from 60 countries and have facilitated interactive break out rooms for 6 to 10 people. This experience has led us to develop specific tools and techniques for engagement and cohort building online.
The winter school will be delivered online via Zoom platform with up to 4 hours of learning per day. In addition:

APPENDIX I: PROGRAMME OUTLINE

IMPERIAL - RCA DESIGN FOR GLOBAL CHALLENGES ONLINE WINTER SCHOOL 26 January to 10 February 2022
*Pre-sessionals start from 24 January 2022

PRE-SESSIONALS		WEEK 1			WEEKEND	
Monday	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Saturday**	**Sunday**
Orientation	Academic Writing	Welcome & Introduction to Imperial College London Welcome & Introduction to RCA Programme overview and ice - breaker	GC1: New Frontiers in Global Health	D1: Service Design and its Impact Lecture: Introduction to Service Design and its impact Service Design Project Workshop	No lectures on weekends - free time for students	No lectures on weekends - free time for students
Cross-cultural Communication	Workshop	Group Photo with Prof. Peter Childs Lecture: Creativity & Ideas Generation Building Effective Team & Leadership	GC2: Innovations in Climate Change GC3: Challenges of the Internet	Introduction to online tools: run through and exercises Team work on global challenges Show and Tell: 2 - 3 teams selected to present ideas Social activity 1		

CHINESE NEW YEAR		WEEK 2			WEEKEND	
Monday	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Saturday**	**Sunday**
No lectures on Chinese New Year's Eve	No lectures on Chinese New Year's Day	D2: Service Design - Discovery Phase Lecture: Who are we designing for? Exercise: Developing Personas Exercise: Mapping the journey your persona takes Identify the pain points & opportunities	GC4: Innovation in Robotics - reshaping the future	D3: Definition and Design Welcome back and recap on last week: discovery phase and introducing the definition and design * translating research into HMW statements * Ideation and visualisation "How Might We…." Define the problems to solve & opportunities to be grasped Lecture: Creativity - how to generate ideas	No lectures on weekends - free time for students	No lectures on weekends - free time for students
		Exercise: Mapping stakeholders Show and Tell: 2 - 3 teams selected to present i Self - study: Students work on group project	GC5: The future of data science and its application Self-study: students work on group project	Exercise: design development Lecture: Visualising Concepts and story - telling Exercise: design your go to journey		

Monday	Tuesday	Wednesday	Thursday	