

Experience learning from two world-class institutions!

Imperial-RCA Design for Global Challenges Winter School

4 to 15 February 2025

This exciting multidisciplinary programme will develop your design thinking to change the way you see the world!



About Imperial College London

Consistently rated amongst the world's best universities (3rd in Europe, 6th in World, QS World University Rankings 2023), Imperial College London is a science-based institution with an international reputation for excellence in teaching and research. Imperial attracts over 20,000 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 2021 Research Excellence Framework (REF) results. 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 winter schools for undergraduate students. We draw on Imperial's education pedagogy in designing and delivering programmes to provide an engaging learning experience for students. Various educational tools are used to support class teaching and group projects are designed to assess students' learning outcomes.

About Royal College of Art (RCA)

Founded in 1837, the Royal College of Art is the world's largest community of postgraduate art and design students. It is the oldest art and design university in continuous operation and has been ranked number one in the world for a remarkable eight consecutive years (QS World Subject Rankings 2015- 2022). Its Vice-Chancellor is Dr Paul Thompson; Sir Jony Ive is its Chancellor; and its Pro-Chancellor is Sir Peter Bazalgette.

The RCA is research-led, and recognised in the UK-wide REF (Research Excellence Framework) as a world-leading research-intensive institution – with an increased proportion of the College's outputs classed as 'internationally excellent' and 'world-leading' in the most recent REF assessment.

Studying at the RCA is the starting point for the world's creative leaders. With more than 20,000 RCA alumni across the globe, the RCA's graduates form a unique international network of artists, designers, creators and innovators. Every year, RCA alumni are recognised as leaders in their discipline, making national and international headlines for their work, which shapes the world we live in. Its start-up incubator, InnovationRCA, is one of the most successful in the country.

Over 2,500 students are spread across four schools – Architecture, Arts & Humanities, Communication and Design - studying at MA, MPhil, MRes and PhD level. The College’s mix of professionalism and creative freedom, together with its renowned academic community and rigorous academic framework provide the ecosystem in which students flourish and achieve their highest potential.

The RCA combines support for, and training in, the “traditional” craft and professional skills of art and design, with the belief that art, design, creative thinking, science, engineering and technology must all collaborate to solve today’s global challenges. The RCA champions the value of interdisciplinary learning, and was the first art and design university in the world to implement a STEAM (Science, Technology, Engineering, Art and Design and Mathematics) academic vision, with investment in new faculty posts in Materials Science; Computer Science and Robotics alongside art and design disciplines. By applying creative insights to evidence-based science, its staff, students, researchers and start-ups are addressing major global challenges such as rapid urbanisation and transport; loss of biodiversity; ageing populations; unsustainable consumption and production; and the rise of AI.

Leading companies choose to work with the RCA on custom executive education programmes that address their strategic goals, unique challenges and identified opportunities. Courses have been delivered in Dubai, Hong Kong, Singapore, China, Japan and Mexico. Organisations that have benefited from RCA innovation expertise include Sony, Ford, NHS, BAA plc, Fujitsu, Kuwait Foundation for the Advancement of Sciences, GSK, Panasonic, Samsung, JP Morgan, Huawei, Majid al Futtain and Cern.

Our practical innovation workshops and methodologies have been incorporated into those offered by other institutions. These include London Business School, Imperial College London, Judge Business School, Fudan University, National University of Singapore, Shanghai University and the University of Cambridge.

Programme Overview

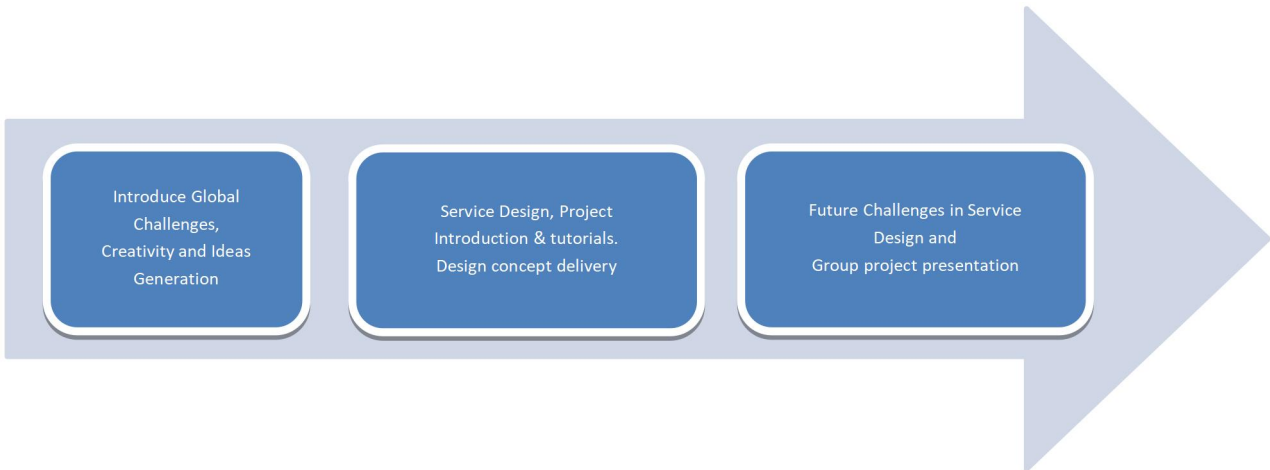
Jointly delivered by Imperial College London and the Royal College of Art, the Design for Global Challenges Winter School is a multidisciplinary programme designed for undergraduate students currently studying at a university in China with an interest in learning how to tackle world challenges through service design.

The aim of the programme is to enable students to explore some of the current global challenges in climate change, global health, cyber security and propose an innovative idea to design a service that could tackle one of the areas.

In addition to the global challenges, students will gain an insight into data science, hear the latest advances in robotics and meet some of our graduate entrepreneurs who are driving progress by launching their design innovations into the commercial world.

Students will develop personal and professional skills through interactive workshops in design thinking, team-building and presentation and experience team based learning through a service design group project.

Programme Structure



The first two days, students will be introduced to design thinking and form a team by exploring their social relations and roles through a leadership and team building workshop. As students familiarise themselves with one another, they will analyse and evaluate some of the global challenges in climate change, health and cyber-security and the impact it has on society and companies.

On day three students will be introduced to service design and encouraged 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.

On day four and six, students will apply their creativity and design ideas to develop their service. They will hear from successful design entrepreneurs sharing their work.

On day five, they will explore how advances in robotics and data science technology are transforming the future and learn to develop their service design idea into a business model. The effective communication workshop will support them with their presentation skills in preparation for their final day.

On day seven, students present their service design to a panel. This is an opportunity to put all their learnings from throughout the course into practice.

Apply learning through Group Project

The group project not only provides an opportunity for students to learn teamwork, but it is also 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.
- Understand how businesses differentiate and compete in global markets, and to define and build business models to establish competitive advantage.
- Understand how technology are transforming marketing and advertising.
- 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, make new friends and practise your English.

Study Tour

Students will get a chance to visit the Design Museum to enhance their learning experiences. This visit will inspire students and aid in consolidating their ideas for service design.



Photo of Design Museum atrium

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 - Networks and Teaching

The RCA provides unparalleled opportunities to access teaching, researchers, guest practitioners and facilities. Our short courses reflect the college's unique studio-based learning philosophy with small class sizes, practical group work and rich interaction between students and academics.

If you are considering embarking on one of our MA Programmes, the winter school offers a snapshot of studying at the College. Previous students that have completed the winter schools have gone on to successfully apply to study on the Graduate Diploma and MA-Level courses at the RCA.

Contact hours

57 contact hours, delivering using various active learning tools as follows:

- Exercises will be provided for formative feedback.
- Group projects are designed for assessing the learning outcomes.
- Case study methodology and collective discussions are used to strengthen the conceptual, analytical and problem-solving skills of the students in real situations.
- Study visit.

Teaching Faculty

The winter school will be taught by a team of renowned Imperial and RCA academics leading in their area of education and research.

Certificates

On successful completion of the winter school, all students will receive an Imperial College London and Royal College of Art Certificate and a project mark in the form of transcript.

Who should attend and entry requirements?

The winter school is designed for students studying an undergraduate degree in any subject discipline.

- Applicants should normally demonstrate good overall university performance in their current year of study.
- Applicants must be at least 18 years old before the start of the winter school.
- Applicants should have a good command of English, and if it is not their first language, they will need to satisfy the College requirement as follows:
 - a minimum score of IELTS (Academic Test) 6.5 overall (with no less than 6.0 in any element) or equivalent.
 - TOEFL (iBT) 92 overall (minimum 20 in all elements)
 - CET- 4 (China) minimum score of 550
 - CET- 6 (China) minimum score of 520

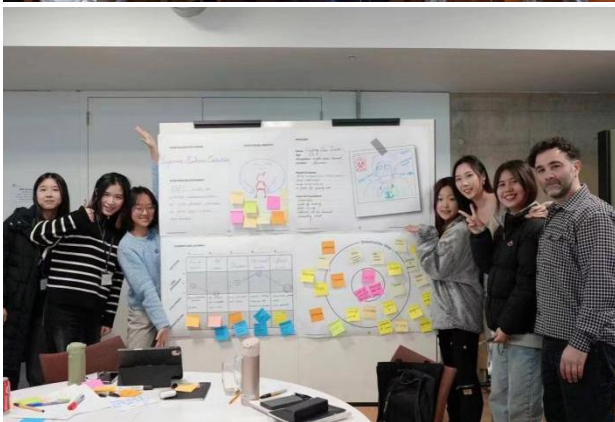


Photo above: 2023 Summer School cohort and 2024 Winter School.

Cost

The cost of the winter school is **£5380**.

The fee includes all tuition which covers:

- Lectures, project work, supporting materials, project mark and Imperial College & RCA certificate of attendance and transcript,
- Relevant visits/study tour in the programme outline,
- Weekday lunches and refreshments will be provided during the course,
- Accommodation fee for 11 nights;
- Overseas insurance expenses;
- A London Transport card with a top-up value of £5;
- An airport shuttle service on a fixed schedule.

Application

Applications are made through the online application portal:

http://www.globaluniversityonline.org/hqdx.php/course_master/detail/70.html

*You will need to upload a copy of your university transcript and evidence of English language proficiency in the above website. It is important that the transcript includes your full name. (If this document is not in English, please provide a brief translation.)

The application deadline is **23:59 15 November 2024 (UK Time)**.

To prevent potential disappointment, we highly recommend that you submit your application at your earliest convenience. Our admissions process operates on a **rolling system, meaning applications are assessed and decisions are made on a first-come, first-served basis. Applying earlier grants you access to a larger pool of available places to offer for evaluation.*

Scholarship Application

Please note you are eligible to apply for the scholarship and get a tuition fee deduction. A scholarship of **up to £600** will be provided by [Global University Online](#).

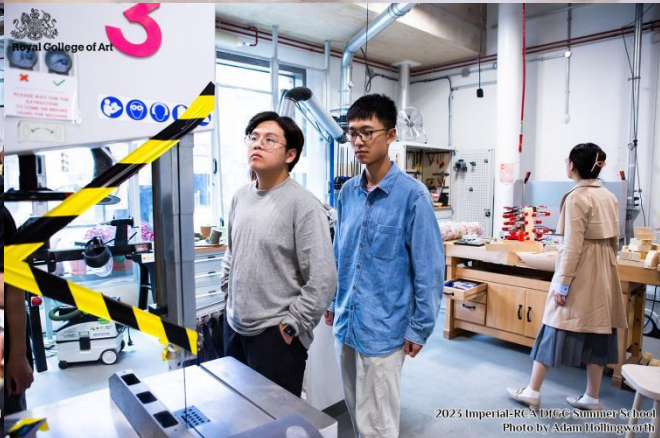
To apply, please click the link below, complete an online application form and upload your personal statement (within 500 words) and CV/resume: .

<http://www.globaluniversityonline.org/hqdx.php/scholarship/detail/48.html>

The deadline of scholarship application is **23:59 18 October 2024 (UK time)**.

In order to ensure the prompt and efficient processing of your scholarship applications, **it is imperative that you submit your scholarship application on the same day as your application materials.*

Photos of 2023 summer school



Photos of 2024 winter school



Location

Imperial College London

On days 1, 2, 5 & 7, classes will take place at Imperial College London's South Kensington Campus, located amongst many famous [attractions](#) in London.

The culture triangle: neighbour to three of London's most prestigious (and free) museums. Right next door, the Science Museum. Across the road, the Victoria & Albert Museum, and around the corner? The Natural History Museum. From Neolithic to the latest scientific breakthroughs, experience it all just minutes from Imperial's doorstep.

The campus is also next to the famous Royal Albert Hall, one of London's most iconic music venues, established in 1871, host to the BBC Proms and countless world-famous international artists.

In addition, the beautiful Hyde Park and the famous Harrods Department Store are just a short walk from the campus.



Photos above: Imperial College London South Kensington Campus

Royal College of Art

On days, 3, 4 & 6, classes will take place at Royal College of Art's new London campus. Designed by internationally acclaimed architects, Herzog & de Meuron, the £135 million, 15,500 sqm campus is the largest investment in transformational space in the RCA's 185 year history. The classes will take place in the dedicated Executive Education spaces on the top floor of the Rausing Research & Innovation Building, with 360 degree views of London – eight floors of dedicated independent and confidential research space for areas such as materials science, soft robotics, advanced manufacturing, intelligent mobility, and AR and VR visualisation, housed in the Snap Visualisation Lab.



Photos above: RCA New Executive Education spaces, Rausing Research & Innovation Building, Battersea, London, SW11 4NL.

Design for Global Challenges Winter School session descriptions:

Creativity and Ideas Generation

This session helps students "to think outside the box" to generate ideas. The techniques presented and tried during the session are particularly useful for people who do not believe they have time to think differently due to the pressures of daily life. The session will take students through a pragmatic problem solving process. Students will apply the process from problem definition through to implementation.

Introduction to Service Innovation & Design Thinking and its Impact

Our RCA interactive workshops are designed to address specific challenges through the use of practical tools such as design thinking and people-centred service innovation, with reference to real-world projects, experiences and case studies.

At the end of the workshop process the students will have worked in groups to develop a proposal in response to the challenge.

Learning aims:

- Empathy, clarity, creativity, networking, self-reflection, integrity, confidence, agility, positivity, equality and diversity, influence, collaboration, communication and inclusion.
- Ethnography, data visualisation, ethics, principles, sustainability, critical thinking, problem identification, analysis evaluation, innovation, public and impact.

Project Introduction & briefing

Students will be allocated in groups of 5 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. This is a tried and tested format at the RCA and each year the MA students take part in the college wide "Grand Challenge" [2021](#) and [Cern](#).

New Frontiers in Global Health

The aim of this session is to provide students with an understanding of current challenges in Global Health and what are the latest innovations to meet these challenges.

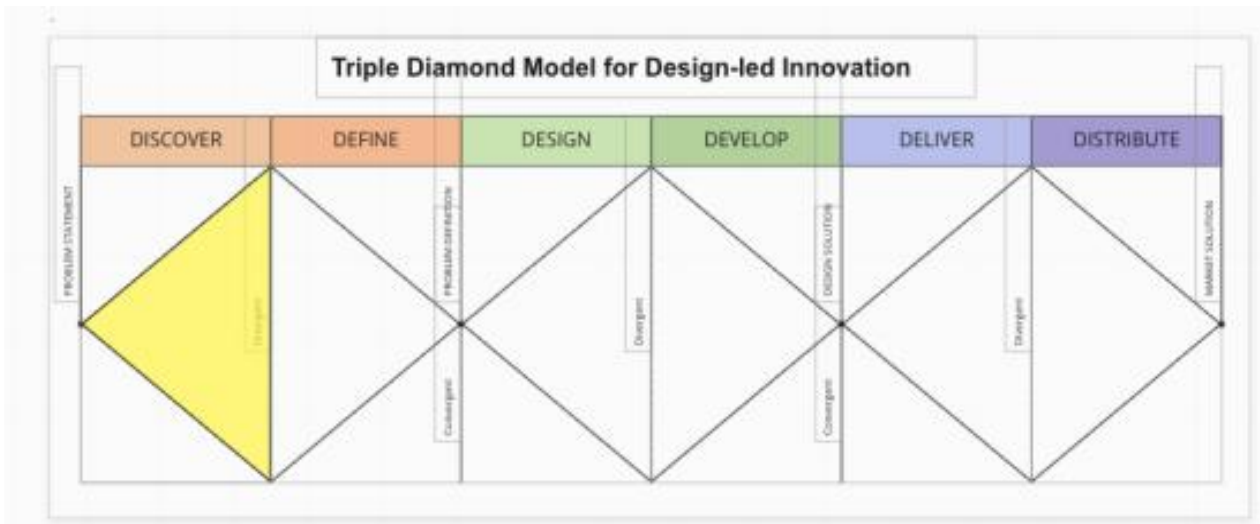
This session will cover:

- What is Global Health?
- Problems and Challenges
- Solutions with case studies examples
- Current innovations in Global Health

Building Effective Team Workshop

Through the medium of practical exercises and guided review, students will explore ways in which team performance can be enhanced. The session will give participants the opportunity to participate in a range of tasks designed to highlight common ways in which team performance can come unstuck and the behaviours that can mitigate against this.

Discovery



In the discovery phase of the Design Thinking process, we encourage divergent thinking, the purpose is to organise a broad range of information and gather insights.

- identify and break down the problem statement
- what are the main factors that have contributed to the problem?
- what other sectors/markets/geographies have addressed this problem
- what are the key contextual issues/drivers that might suggest a way forward

Innovations in Climate Change

Climate Change is one of the biggest challenges to development today. While climate change poses a number of risks to vulnerable communities and businesses around the world, many opportunities are unfolding for private companies to implement actions towards reducing risks to their business operations, as well as investing in adaptation action in vulnerable regions in a sustainable and profitable manner. The session will give students an understanding of what Climate Change is, its impact and the challenges businesses and academia face as they find innovations to tackle these problems.

Challenges of the Internet

The Internet is a global system of interconnected computer networks that use the standard Internet protocol suite to serve several billion users worldwide. Whether for business or leisure, use of the internet is becoming part of our daily lives. To understand what impact this can have, the session will cover:

- An introduction/overview of the internet and its power
- Current challenges of the internet and problems faced by companies.
- What businesses are doing to overcome these challenges?
- Current innovations in managing Internet Challenges (academic and business)

Innovation in Robotics – reshaping the future

This session provides an insight into machine learning, robotics and AI. Students will learn the latest real-world application and innovation in the area and see how robotics can reshape the future and transform the world in different sectors.

The Future of Data Science and its Application

Modern science typically involves big data, taking advantage of high-throughput data capture and high-performance computing capabilities. Data science is therefore an essential element of all modern interdisciplinary scientific activities. It acts as the glue to facilitating collaborative scientific discovery and involving the whole life cycle of data, from acquisition and exploration to analysis and communication of the results. Data science is not only concerned with the tools and methods to obtain, manage and analyse data, it is also about extracting value from data and translating it from asset to insight. This session aims to showcase data science and its applications to address data-driven scientific grand challenges.

Business Model Innovation

The aim of the session is to facilitate students' understanding of how businesses differentiate and compete in global markets. Students learn to define and build business models to establish competitive advantage. The session to include:

- Explain the difference between market-pull and technology-push
- Recognize different types of innovations
- Introduce the business model canvas and systematically understand, design & differentiate new business models
- Differentiate between product & business model innovation

Effective Communication for Presentation

This workshop will take students on a journey through fundamental principles of communication and presentation. Through exercises, plenary and interaction, students will learn more about their strengths and natural abilities, and how to perform at a higher level. The session will allow students to work experientially within a group setting and will give participants exercises, ideas, tips and practises for inclusion in their presentations on the last day.

Definition

Using convergent thinking, the aim is to interrogate and refine the problem to arrive at a design brief that makes sense of the possibilities.

- what are the most relevant pointers from the Discover phase
- which elements matter most and which are most feasible?
- how do these elements fit together, and what is the convergent path on which they might sit?
- how might an actionable creative design brief be developed and articulated?

Design

The design phase is about creating ideas. Through using divergent thinking, the aim here is to generate a range of different creative ideas to address the challenge.

- what are the most relevant and resonant creative design responses to the brief?
- how can these concepts be described visually in model or sketch form?
- look at other sectors or countries for ideas to cross-pollinate.

Concept Delivery

Finalise the design solution describing its key characteristics, benefits and beneficiaries. Present the ideas to the group. Suggest several routes to implementation.

- what shape should the final proposal take
- what are its key features and attributes?
- describe a range of delivery mechanisms to make this happen
- how do you communicate the essence of the proposal to an audience?

Distribution and Diffusion

Use convergent thinking to bring the proposal to a wider audience, what are the elements required to scale up the solution and create impact?

- what is the preferred route to implementation?
- who are the key players needed to make the project real?
- how will you promote and market this innovation to a wider audience?
- how will you test the solution and incorporate feedback to further improve the solution?

Future Challenges in Service Design

Services represent around 80 per cent of the economy. Service design applies human-centred design principles to make services that are more sustainable and desirable for changing consumer priorities. It delivers better experiences, successful innovation and business value. It can be applied to global challenges in all sectors ranging from retail, banking to transportation, health, and education etc. In this session, students will discuss some of the challenges in service design as a key enabler to humanize the world and to create a better future for all of us.

Project tutorial sessions

The teams will work in small groups and the workshop facilitators will be available to visit and comment on the projects in the rooms to give feedback.

Opportunities for International Students

This session provides an opportunity for international students to find out more about studying in the UK and at Imperial and RCA. They will find out about student life and facilities on campus, programmes available, the application process and scholarships.

Group Presentations

Students in groups will apply their learning and present their design ideas to a panel and the best project team will be awarded a prize and a letter of recognition. All students will receive a project assessment score.

Testimonials - Comments from last cohort:

- *This course gave me an amazing experience to dive deep into some of the global challenges and make imaginative ideas become true. Collaborating with people from different backgrounds really activates my creativity.*
- *I never thought I could learn this much on this course.*
- *Participating in this course has been very rewarding. As a design student, the school's courses are relatively scattered, and I have learned design-related knowledge, but I am rarely able to systematically learn and apply design thinking. Through this design thinking course, the whole process of design has been reorganized, and design thinking has been effectively used.*
- *Get to know the global challenges and make every second in your life count by tackling them. The final design project, which can be said to kill two birds with one stone. It not only produced a plan, but also exercised the ability of design thinking.*
- *A really useful course which makes me fall in love with service design.*
- *The course offered an opportunity to learn the scientific, efficient and systematic design process of Royal College of Arts, together with Imperial's great business insights.*
- *This course really helps us to learn more about innovation thinking and teamwork, that's really helpful for our future work, if you are interested in design, just join it!*
- *Very nice course and the best teachers! I've really learned a lot through this course, Thanks!*
- *I think this course is very meaningful and adds to the fun while learning the skills.*
- *I gained a lot from this course. Several lovely professors gave very useful lectures and the cooperation of the group. They are all unforgettable experiences for me, and also provide help for my next study.*
- *One of the best features of the course is collaborating with different people from different backgrounds. We shared our different perspectives, and everyone can learn a lot from the process.*
- *Great combination of inspiring design courses and workshops to develop our ideas.*
- *Very grateful to Imperial and RCA for offering such a course, it is my honour to participate in it. An unforgettable experience!*
- *It was a great experience for me to be able to interact with teachers from Imperial College and RCA at the same time.*
- *It helps me get to know how real world challenges are tackled and discover new challenges under the guidance of teachers.*
- *The biggest feature of this course is that in addition to the professional knowledge of service design, I am also impressed by the knowledge and understanding of robotics, big data and other related fields. The practical application of design in different fields is the most interesting aspect for me.*
- *It is such an excellent course that enriches my holiday and brings me surprise about design.*
- *So fantastic the whole course is! I learned how to create a new idea and implement it. That is so amazing! I will continue to use this method in the future, so it may change the way I start my business and change my life. I would like to express my sincere thanks to each professor for his or her exquisite course design and to all relevant personnel for their company and efforts.*
- *The course helped me know more about service design and some a lot of information of global health, Climate Change, Challenges of the Internet, Future of Data Science, really inspiring.*