

IMPERIAL

阿思丹 ASEEDER  
PHIconnections

# 2025 Imperial College London University Preparation Programme

Imperial College  
London

- Officially supported by **Imperial College London**
- **Hands-on Learning** with academic lectures and seminars
- Explore famous cultural landmarks, savor the classic **British essence**
- Gain a competitive edge with your **university application**
- **Official completion certificate** and professor-signed award certificate

**Date:** Jan.18th -Jan.27th, 2025 (10 Days)

**Subjects:** Engineering, Maths, Bioscience and  
Medicine, AI

**Language:** English

**Grade:** 10 - 12

**Location:** UK

Imperial College London is one of the world's top ten universities with an international reputation for teaching and research excellence. Imperial is the only university in the UK to focus exclusively on Science, Bioscience & Medicine, Engineering, and Mathematics. A community of problem-solvers dedicated to find innovative solutions to the world's biggest challenges. Consistently rated amongst the world's best universities, Imperial College London is committed to developing the next generation of researchers, scientists, and academics through collaboration across disciplines.

The Imperial College London University Preparation Programme chooses the most popular majors. It upholds Imperial's practice-oriented educational model, developing teamwork skills, communication skills, and leadership through group learning and seminars. With design and teamwork challenges, theory with practice to stimulate innovation and practical problem-solving skills. Lessons are delivered in a variety of formats, including lectures, seminars and practical sessions, enabling students to gain valuable insight into what it might be like to study your subject at degree level.

Since 2019, ASEEDER has established a strategic partnership with Imperial College London's course programme, enabling numerous outstanding Chinese students to successfully participate in the programme. In the winter of 2025, this programme will offer two course modes - overseas offline and online - to meet the diverse needs of students. The online mode provides students with convenient access to frontier undergraduate-level knowledge under the guidance of professional tutors. The overseas offline mode offers students the opportunity to visit the UK and experience Imperial College's unique educational approach while exploring knowledge in their respective fields.

## Official Partners



## Available Courses



### Engineering

We will explore some of these topics along with the aspects of Rocketry, systems Engineering, structural engineering and bioengineering. We will emphasize space settlement design to explore future engineering within the industry.



### Maths

Students will gain insights into mathematics and applied mathematics. There will also be opportunities for an in-depth exploration by integrating real research cases from Imperial College London's Mathematics Department.



### Bioscience and Medicine

Bioscience & Medicine is an essential branch of natural science and a necessary discipline for human beings to explore the nature of life and discover its intrinsic laws. Students will focus on topics such as genetics, space Bioscience & Medicine to deepen their understanding of Bioscience & Medicine.



### AI

This course aims to help students better understand artificial intelligence and how intelligent systems autonomously learn and perform specified tasks. Students will explore the background of machine learning, study the design logic of AI, its applications across various fields, and gain insights into the future development of artificial intelligence.

IMPERIAL

University Preparation Programme

## Programme Structure

This programme consists of three modules: the first focuses on project-based professional course study; the second involves the Global Space Design Competition, where students engage in an advanced practical project to foster innovative thinking, apply learned knowledge, and develop skills in time management and teamwork. The third module involves cultural exploration activities in the UK, offering students diverse experiences to immerse themselves in British culture and explore the uniqueness of the British heritage.



## Course

Lessons are delivered in various formats, including lectures, seminars and practical sessions, enabling you to increase your specialist subject knowledge and gain valuable skills and insight into what it might be like to study your subject at a degree level.



## Project

Students will simulate an enterprise in their topic as teams and solve problems related to the construction of the future Space Station, such as space engineering, space settlement, modelling the trajectory, supporting life in space, and a future city's financial system. The final design will be submitted and presented to a panel of judges.



## Discovery

Alongside the academic programme, there is a schedule full of activities which will provide students the opportunity to visit the University of Cambridge/ the British Museum/ Big Ben to experience the British academic atmosphere and culture.

# Why us

**IMPERIAL**

University Preparation  
Programme



## Experience the Teaching Model of Imperial College

Experience the teaching model of Imperial College London; gain early exposure to undergraduate-level expertise; engage in classic educational activities at Imperial College.



## A Distinguished Lineup of Mentors

The programme is led by Imperial College mentors and expert-level research teams, adopts the innovative PBL (Project-Based Learning) approach, helps students foster a practice-oriented mindset by subject projects and the Request for Proposal (RFP) for the International Space Station design.



## Global Space Design Competition (GSDC)

Global Space Design Competition (GSDC) has successfully hosted 14 times at Imperial College. Students will form research enterprises akin to SpaceX, engaging in 24 hours of high-intensity team-based research and space design work.



## Face-To-Face Interaction with Professional Elites

Interact with engineers, mathematicians, biologists, and other industry experts; explore the future development, investigate potential career paths.



## Authoritative Certifications

Students who participate in and meet the programme's completion requirements will receive an official certificate of participation. Winning teams in the challenge will also receive a mentor-signed award certificate.



**Dr. Sunday Popo-Ola**  
Engineering

Dr. Sunday Popo-Ola is currently a Research and Teaching Fellow at Imperial College London. Dr. Popo-Ola has acquired and successful run research.



**Professor Ricardo Martinez-Botas**  
Engineering

Ricardo has an MEng (Hons) Degree in Aeronautical Engineering from Imperial College London. He obtained a DPhil in the Rolls Royce University Technology Center at the University of Oxford University



**Dr. Sam Kamperis**  
Engineering

Royal Institution Maths Masterclass leader in the Oxford area of the UK, and lecturer at Oxford Brookes University, member of the British Computing Society and Institute of Mathematics, is taking the lead on a series of masterclass lectures and workshops in our Maths stream.



**Dr. Randall Perry**  
Engineering & Bioscience & Medicine

Dr. Perry is a Senior Research Investigator at Imperial College. He has a B.S., M.S., and Ph.D. from the University of Washington. He has held the US and Canada National Science Foundation Fellowship at Oxford University.



**Jenny Lyons**  
Bioscience & Medicine

As a passionate believer in the benefits that practical science brings to school-based learning, Jenny has taught in both the private and public sectors and worked with various agencies to promote and fund Science Clubs.



**Professor Sara Rankin**  
Bioscience & Medicine

Prof. Sara is lead for Outreach and Public engagement for the National Heart and Lung Institute, Imperial College and has been the scientific lead on projects including the Heart and Lung Repair shop and Palaces.



**Dr. Ellie Sherard-Smith**  
Bioscience & Medicine

Dr. Ellie is affiliated with the School of Public Health at Imperial College London, specializing in infectious diseases. She serves as a co-lead for the Malaria Excellence Network and is a member of ICL's Malaria Modelling Group.



**Alison Ahearn**  
Engineering

Alison Ahearn is Principal Teaching Fellow at Imperial, based in the Educational Development Unit, with a special interest in engineering education and the development of postgraduates as teachers.



**Mathias Fagbemi**  
Bioscience & Medicine

Mathias holds a doctorate of Philosophy (PhD) in Molecular Genetics from the University of Oxford. He has investigated novel signalling pathways in Oesophageal cancer by inhibiting Class II phosphoinositide 3-kinase (PI3K) enzymes.



**Professor Julian Jones**  
Bioscience & Medicine & Engineering

Julian Jones is a Professor of Biomaterials. Prior to this he held a Royal Academy of Engineering/ EPSRC Research Fellowship, having completed his PhD here in the department in 2002.



**James Haye**  
Engineering & AI

James graduated from the University of Glasgow of Engineering. He is a Technical Advisor of the Space Science & Engineering Foundation and Lead Engineer of GU Rocketry



**Shayne Beegadhr**  
Engineering

Shayne graduated from the University of Loughborough of Engineering and currently serves as a Director and Head of Mechanical Systems in Conex Research.



**Alina Vizireanu**  
AI

Alina is a geographic spatial expert and IT consultant, specializing in the design, analysis, and implementation of geographic spatial projects. Additionally, she serves as a manager at the Space Generation Advisory Council (SGAC).

\* The above all are the instructors for the previous programme. The final instructor is subject to change.

IMPERIAL

# Engineering Preparation Programme

Train the next generation Silicon Valley Iron Man - Elon Musk.  
Build your own Space X!

What's engineering? | Structural Engineering | 3D Drawing | Software Engineering and AI | Data Visualization | Mission Design | Physics Engineering | Materials | Systems Engineering | Space Networks (Spherical Trig)

Intended Students: Students who passionate about physics and interested in engineering-related disciplines such as structural and design engineering

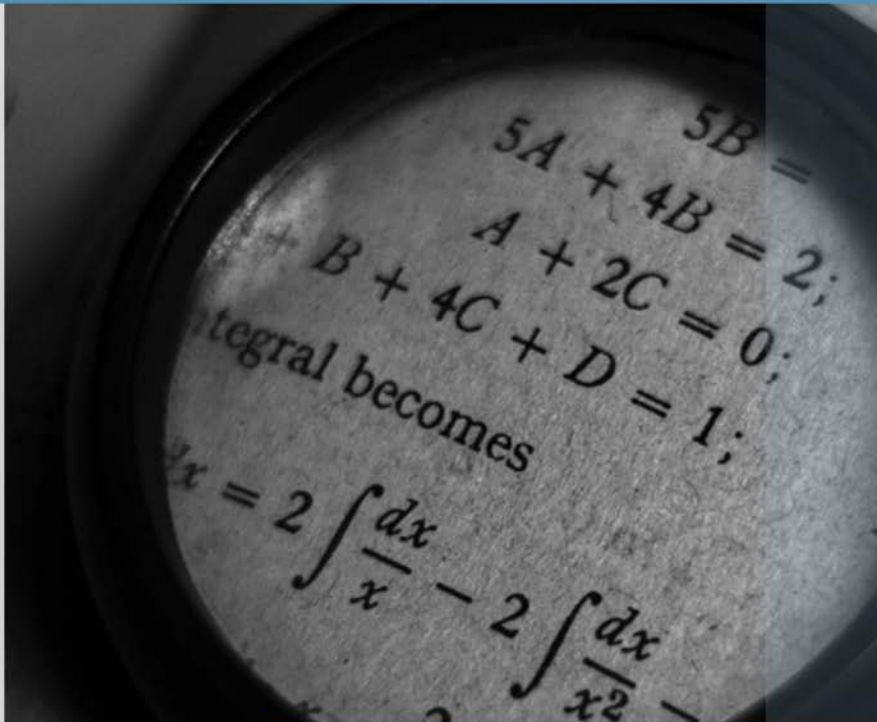
Date	9:30 – 13:00	14:00 – 17:30	19:00– 20:30
Day 1	<b>Arrival</b>		
Day 2	<b>Imperial College London Campus Exploration</b> <b>Opening Ceremony:</b> Meet the mentor teams, form groups to engage in team-building activities. <b>Academic Special Lectures</b> <ul style="list-style-type: none"> <li>• Big View of Data-Interpreting and using data by Data visualization</li> </ul>	<b>Mentor Courses</b> <ul style="list-style-type: none"> <li>• What's engineering?</li> <li>• Data Visualization</li> <li>• Space Networks (spherical trig)</li> </ul> <b>SDG-led Design:</b> The task topic is announced by mentors and discussed by students in groups	
Day 3	<b>Mentor Courses</b> <ul style="list-style-type: none"> <li>• Structural Engineering</li> <li>• Structural Engineering Seminar</li> </ul>	<b>Mentor Courses</b> <ul style="list-style-type: none"> <li>• Physics Engineering</li> </ul> <b>Presentations and Feedback:</b> Group Presentation and Optimization based on Feedback	
Day 4	<b>Cultural Exploration</b> <ul style="list-style-type: none"> <li>• London City Tour–Big Ben, the Houses of Parliament, the London Eye, Downing Street 10, and the River Thames</li> <li>• British Museum–Explore the British Museum, peruse vast collection of cultural relics, and immerse in historical heritage</li> </ul>		
Day 5	<b>Group Project Progression:</b> Advance discipline-specific projects to deepen the application of professional knowledge <b>Mentor Courses</b> <ul style="list-style-type: none"> <li>• Materials</li> <li>• Building Medical Machines</li> </ul>	<b>Mentor Courses</b> <ul style="list-style-type: none"> <li>• Modular Construction</li> <li>• Modular Construction Seminar</li> <li>• Software Engineering and AI</li> </ul>	
Day 6	<b>Academic Special Lectures</b> <ul style="list-style-type: none"> <li>• 3D Drawing–Learn the decomposition and drawing of 3D geometric shapes</li> </ul> <b>Museum Field Trip:</b> A deeper exploration in structural engineering and mission design & An outcome of the creation of team activity reports	<b>Academic Theme Activities</b> <ul style="list-style-type: none"> <li>• Laboratory Visits–Visit to the Engineering laboratories, and gain insight into cutting-edge engineering technology</li> <li>• Case Study in Blood Fluid Dynamics–Explores technological innovations within specific cases</li> <li>• Chocolate Fountain Fluid Dynamics Experiment– Learn the fundamental principles of fluid dynamics by melting chocolate into liquid form and observing its flow within a fountain</li> </ul>	<b>Academic Assignment</b>
Day 7	<b>Exploration of Prestigious Colleges:</b> Visit Cambridge University, experience punting on the River Cam		
Day 8	<b>Preparation for Museum Field Trip Report:</b> Submit materials related to the museum visit, such as presentation slides, exhibit descriptions, or sketch display boards by 10 am <b>Presentation and Awards Ceremony:</b> Academic Activity Presentation; Mentor Feedback and Project Selection; Outstanding Individual Awards Presentation	<b>GSDC Task Release:</b> Announce the background and theme of the Global Space Design Competition <b>GSDC Special Academic Lectures</b> <ul style="list-style-type: none"> <li>• Overview of GSDC Tasks and Interdisciplinary Collaboration Discussions–Learn the interconnection the applications and practices of interdisciplinary technologies in various fields</li> </ul>	
Day 9	<b>Global Space Design Competition:</b> Students in groups to complete research, design solutions, create PowerPoint presentations, refine and finalize speeches within 24 hours. Evaluation and feedback will be given by a panel of judges. <b>G5 Elite School Interview Experience Sharing and Simulation:</b> To enhance students' interview skills, enable them to handle interview pressure and demonstrate their academic prowess and core competencies by simulating real Imperial College interview scenarios <b>Closing Ceremony and Award Presentation</b>		<b>Packing</b>
Day 10	<b>Flying back</b>		

\*The schedule is subject to the final arrangement of this programme.

IMPERIAL

# Mathematics

## Preparation Programme



A magnifying glass is positioned over a document containing mathematical equations. The equations visible through the lens include a system of linear equations and an integral expression. The text 'Integral becomes' is also visible.

$$\begin{aligned}5A + 4B &= \\A + 2C &= 2; \\+ B + 4C + D &= 0; \\+ B + 4C + D &= 1;\end{aligned}$$

Integral becomes

$$dx = 2 \int \frac{dx}{x} - 2 \int \frac{dx}{x^2}$$

Exploring the Mathematical Code of the Universe  
Pioneering New Equations for the Future

What's maths? | Space Networks (Spherical Trig) | Maths in AI | Game Theory | 3D  
Drawing | Data Visualization | Conditional Probability | Frontier Topic Cases in Maths

Intended Students: Students who love data analysis and interested in maths



Date	9:30 - 13:00	14:00 - 17:30	19:00-20:30
Day 1	<b>Arrival</b>		
Day 2	<p><b>Imperial College London Campus Exploration</b></p> <p><b>Opening Ceremony:</b> Meet the mentor teams, form groups to engage in team-building activities.</p> <p><b>Academic Special Lectures</b></p> <ul style="list-style-type: none"> <li>• Big View of Data-Interpreting and using data by Data visualization</li> </ul>	<p><b>Mentor Courses</b></p> <ul style="list-style-type: none"> <li>• What's maths?</li> <li>• Data Visualization</li> <li>• Space Networks (spherical trig)</li> </ul> <p><b>SDG-led Design:</b> The task topic is announced by mentors and discussed by students in groups</p>	
Day 3	<p><b>Mentor Courses</b></p> <ul style="list-style-type: none"> <li>• Professional Mathematics Seminar-Series of mathematics courses co-hosted by invited guests and instructors, covering mathematical theory, applications, and approaches to address practical problem-solving strategies.</li> </ul>	<p><b>Mentor Courses</b></p> <ul style="list-style-type: none"> <li>• Game Theory</li> <li>• Mathematics in AI</li> <li>• <b>Presentations and Feedback:</b> Group Presentation and Optimization based on Feedback</li> </ul>	
Day 4	<p><b>Cultural Exploration</b></p> <ul style="list-style-type: none"> <li>• London City Tour-Big Ben, the Houses of Parliament, the London Eye, Downing Street 10, and the River Thames</li> <li>• British Museum-Explore the British Museum, peruse vast collection of cultural relics, and immerse in historical heritage</li> </ul>		
Day 5	<p><b>Group Project Progression:</b> Advance discipline-specific projects to deepen the application of professional knowledge</p> <p><b>Mentor Courses:</b></p> <ul style="list-style-type: none"> <li>• Conditional Probability</li> </ul>	<p><b>Mentor Courses</b></p> <ul style="list-style-type: none"> <li>• The Conways Soldiers Problem</li> <li>• Frontier Topics Cases in Maths</li> </ul>	<b>Academic Assignment</b>
Day 6	<p><b>Academic Special Lectures</b></p> <ul style="list-style-type: none"> <li>• 3D Drawing-Learn the decomposition and drawing of 3D geometric shapes</li> </ul> <p><b>Museum Field Trip:</b> A deeper exploration in structural engineering and mission design &amp; An outcome of the creation of team activity reports</p>	<p><b>Academic Theme Activities</b></p> <ul style="list-style-type: none"> <li>• Practival Activity in Computer Mathematics-Apply mathematical concepts to the field of computer science, and complete mathematical modeling within a specified timeframe</li> <li>• Case Study in Blood Fluid Dynamics-Explores technological innovations within specific cases</li> <li>• Chocolate Fountain Fluid Dynamics Experiment- Learn the fundamental principles of fluid dynamics by melting chocolate into liquid form and observing its flow within a fountain</li> </ul>	
Day 7	<p><b>Exploration of Prestigious Colleges:</b> Visit Cambridge University, experience punting on the River Cam</p>		
Day 8	<p><b>Preparation for Museum Field Trip Report at IC:</b> Submit materials related to the museum visit, such as presentation slides, exhibit descriptions, or sketch display boards by 10 am</p> <p><b>Presentation and Awards Ceremony:</b> Academic Activity Presentation; Mentor Feedback and Project Selection; Outstanding Individual Awards Presentation</p>	<p><b>GSDC Task Release:</b> Announce the background and theme of the Global Space Design Competition</p> <p><b>GSDC Special Academic Lectures:</b></p> <ul style="list-style-type: none"> <li>• Overview of GSDC Tasks and Interdisciplinary Collaboration Discussions-Learn the interconnection the applications and practices of interdisciplinary technologies in various fields</li> </ul>	
Day 9	<p><b>Global Space Design Competition:</b> Students in groups to complete research, design solutions, create PowerPoint presentations, refine and finalize speeches within 24 hours. Evaluation and feedback will be given by a panel of judges</p> <p><b>G5 Elite School Interview Experience Sharing and Simulation:</b> To enhance students' interview skills, enable them to handle interview pressure and demonstrate their academic prowess and core competencies by simulating real Imperial College interview scenarios</p> <p><b>Closing Ceremony and Award Presentation</b></p>		<b>Packing</b>
Day 10	<b>Flying back</b>		



IMPERIAL

# Bioscience & Medicine

Deciphering the mysteries of life  
Heralding a new era in the field of medicine

What's Bioscience? | DNA Replication, Transcription, and Translation | DNA Extraction |  
Laboratory Procedures Standards and Data Collection | Human and Medical System |  
Medical Physics | Biophysics | Clinical Skills Assessment | Computational Biology

**Intended Students:** Students who love medicine and interested in medicine, biology and related disciplines

Date	9:30 – 13:00	14:00 – 17:30	19:00–20:30
Day 1	<b>Arrival</b>		
Day 2	<b>Imperial College London Campus Exploration</b> <b>Opening Ceremony:</b> Meet the mentor teams, form groups to engage in team-building activities. <b>Academic Special Lectures</b> <ul style="list-style-type: none"> <li>• Big View of Data-Interpreting and using data by Data visualization</li> </ul>	<b>Mentor Courses</b> <ul style="list-style-type: none"> <li>• What's AI?</li> <li>• Data Visualisation</li> <li>• The importance of AI</li> </ul> <b>DG-led Design in ENG and SCI:</b> The task topic is announced by mentors and discussed by students in groups	
Day 3	<b>Mentor Courses</b> <ul style="list-style-type: none"> <li>• The Development of Artificial Intelligence Brain</li> <li>• Creative Artificial Intelligence in Space and on Earth</li> </ul>	<b>Mentor Courses</b> <ul style="list-style-type: none"> <li>• Why AI matters</li> <li>• AI from the past</li> <li>• Maths for AI</li> </ul>	
Day 4	<b>Cultural Exploration</b> <ul style="list-style-type: none"> <li>• London City Tour-Big Ben, the Houses of Parliament, the London Eye, Downing Street 10, and the River Thames</li> <li>• British Museum-Explore the British Museum, peruse vast collection of cultural relics, and immerse in historical heritage</li> </ul>		
Day 5	<b>Group Project Progression:</b> Advance discipline-specific projects to deepen the application of professional knowledge <b>Mentor Courses:</b> <ul style="list-style-type: none"> <li>• Artificial General Intelligence (AGI)</li> </ul>	<b>Mentor Courses</b> <ul style="list-style-type: none"> <li>• Diving deeper into AI</li> <li>• Software Engineering and AI</li> </ul>	<b>Academic Assignment</b>
Day 6	<b>Academic Special Lectures</b> <ul style="list-style-type: none"> <li>• 3D Drawing-Learn the decomposition and drawing of 3D geometric shapes</li> </ul> <b>Museum Field Trip:</b> A deeper exploration in structural engineering and mission design & An outcome of the creation of team activity reports	<b>Academic Special Lectures</b> <ul style="list-style-type: none"> <li>• AI Workshop Practical Activity- How to build simple AI models or utilize existing tools and information databases for technical practice</li> <li>• Case Study in Blood Fluid Dynamics-Explores technological innovations within specific cases</li> <li>• Chocolate Fountain Fluid Dynamics Experiment- Learn the fundamental principles of fluid dynamics by melting chocolate into liquid form and observing its flow within a fountain</li> </ul>	
Day 7	<b>Exploration of Prestigious Colleges:</b> Visit Cambridge University, experience punting on the River Cam		
Day 8	<b>Preparation for Museum Field Trip Report at IC:</b> Submit materials related to the museum visit, such as presentation slides, exhibit descriptions, or sketch display boards by 10 am <b>Presentation and Awards Ceremony:</b> Academic Activity Presentation; Mentor Feedback and Project Selection; Outstanding Individual Awards Presentation	<b>GSDC Task Release:</b> Announce the background and theme of the Global Space Design Competition <b>GSDC Special Academic Lectures:</b> <ul style="list-style-type: none"> <li>• Overview of GSDC Tasks and Interdisciplinary Collaboration Discussions-Learn the interconnection the applications and practices of interdisciplinary technologies in various fields</li> </ul>	
Day 9	<b>Global Space Design Competition:</b> Students in groups to complete research, design solutions, create PowerPoint presentations, refine and finalize speeches within 24 hours. Evaluation and feedback will be given by a panel of judges <b>G5 Elite School Interview Experience Sharing and Simulation:</b> To enhance students' interview skills, enable them to handle interview pressure and demonstrate their academic prowess and core competencies by simulating real Imperial College interview scenarios <b>Closing Ceremony and Award Presentation</b>		<b>Packing</b>
Day 10	<b>Flying back</b>		

IMPERIAL

# Artificial Intelligence



Crack the Intelligent Unknown  
Pioneer the Evolution of Space Science Wisdom

What's AI? | AI Thinking | Creative AI | Explore Early AI | Artificial General Intelligence (AGI) | Machine Learning | AI Brain | Software Engineering and AI | Mathematics in AI

**Intended Students :** Students who love AI and machine learning and interested in related disciplines

Date	9:30 - 13:00	14:00 - 17:30	19:00-20:30
Day 1	<b>Arrival</b>		
	<b>Imperial College London Campus Exploration</b>	<b>Mentor Courses</b>	
Day 2	<b>Opening Ceremony:</b> Meet the mentor teams, form groups to engage in team-building activities.	<ul style="list-style-type: none"> <li>• What's Bioscience?</li> <li>• Data Visualization</li> <li>• Exploring Bioscience: case studies</li> </ul>	
	<b>Academic Special Lectures</b>	<b>SDG-led Design:</b> The task topic is announced by mentors and discussed by students in groups	
	<ul style="list-style-type: none"> <li>• Big View of Data-Interpreting and using data by Data visualization</li> </ul>		
Day 3	<b>Mentor Courses</b>	<b>Mentor Courses</b>	
	<ul style="list-style-type: none"> <li>• DNA Introduction</li> <li>• DNA Replication, Transcription, and Translation</li> </ul>	<ul style="list-style-type: none"> <li>• DNA Extraction Experiment Lab</li> <li>• Biological Science Laboratory Techniques</li> </ul>	
	<b>Cultural Exploration</b>	<b>Presentations and Feedback:</b> Group Presentation and Optimization based on Feedback	
Day 4	<ul style="list-style-type: none"> <li>• London City Tour-Big Ben, the Houses of Parliament, the London Eye, Downing Street 10, and the River Thames</li> <li>• British Museum-Explore the British Museum, peruse vast collection of cultural relics, and immerse in historical heritage</li> </ul>		
	<b>Group Project Progression:</b> Advance discipline-specific projects to deepen the application of professional knowledge	<b>Mentor Courses</b>	
Day 5	<b>Mentor Courses</b>	<ul style="list-style-type: none"> <li>• Human and Medical System</li> <li>• Objective Structured Clinical Examination (OSCEs)</li> <li>• Laboratory Procedure Standard and Data Collection</li> </ul>	<b>Academic Assignment</b>
	<ul style="list-style-type: none"> <li>• Biophysics</li> <li>• Medical Physics</li> <li>• Computational Biology</li> </ul>		
Day 6	<b>Academic Special Lectures</b>	<b>Academic Special Lectures</b>	
	<ul style="list-style-type: none"> <li>• 3D Drawing-Learn the decomposition and drawing of 3D geometric shapes</li> </ul>	<ul style="list-style-type: none"> <li>• Laboratory Visits-Visit to the medical laboratories, and gain insight into cutting-edge medical technology</li> <li>• Case Study in Blood Fluid Dynamics-Explores technological innovations within specific cases</li> <li>• Chocolate Fountain Fluid Dynamics Experiment- Learn the fundamental principles of fluid dynamics by melting chocolate into liquid form and observing its flow within a fountain</li> </ul>	
	<b>Museum Field Trip:</b> A deeper exploration in structural engineering and mission design & An outcome of the creation of team activity reports		
Day 7	<b>Exploration of Prestigious Colleges:</b> Visit Cambridge University, experience punting on the River Cam		
Day 8	<b>Preparation for Museum Field Trip Report at IC:</b> Submit materials related to the museum visit, such as presentation slides, exhibit descriptions, or sketch display boards by 10 am	<b>GSDC Task Release:</b> Announce the background and theme of the Global Space Design Competition	
	<b>Presentation and Awards Ceremony:</b> Academic Activity Presentation; Mentor Feedback and Project Selection; Outstanding Individual Awards Presentation	<b>GSDC Special Academic Lectures:</b>	
		<ul style="list-style-type: none"> <li>• Overview of GSDC Tasks and Interdisciplinary Collaboration Discussions-Learn the interconnection the applications and practices of interdisciplinary technologies in various fields</li> </ul>	
Day 9	<b>Global Space Design Competition:</b> Students in groups to complete research, design solutions, create PowerPoint presentations, refine and finalize speeches within 24 hours. Evaluation and feedback will be given by a panel of judges		
	<b>G5 Elite School Interview Experience Sharing and Simulation:</b> To enhance students' interview skills, enable them to handle interview pressure and demonstrate their academic prowess and core competencies by simulating real Imperial College interview scenarios		<b>Packing</b>
	<b>Closing Ceremony and Award Presentation</b>		
Day 10	<b>Flying back</b>		

# Global Space

Design  
Competition



Scan the QR code to watch  
the promotional video


## Global Space Design Competition

The Imperial College Global Space Design Competition (GSDC) was initiated by Dr. Randall S. Perry, a senior researcher at Imperial College and honorary chair of the British Interplanetary Society. Dr. Randall believes that with technological advancements, life in the International Space Station will mark a "new era for humanity." The challenge revolves around space, encompassing everything needed in a normal community, including structural design, infrastructure construction, AI automation and control systems, human engineering and medical systems, time, and task management.

Within 24 hours of receiving the Request for Proposal (RFP) for the current space environment blueprint, students form groups to create virtual company headquarters with different roles such as CEO, engineers, bioengineering experts, designers, etc. These teams will conduct a series of studies on the construction and development of the International Space Station.

Imperial College London, as a globally renowned institution emphasizing practical skills and innovation, aims not only for students to acquire transferable skills for personal development but also to equip them for current and future scientific challenges. This challenge endeavors to nurture leaders contributing to societal development as international talents. This challenge encourages students to envision a more optimistic and proactive future, honing their innovation, scientific literacy, interdisciplinary prowess, and problem-solving abilities. Moreover, it provides comprehensive training in soft skills like communication, teamwork, and leadership.

## 01 Engineering



### Constructing Large-Scale Human Settlements in Space

Engineering students will primarily be responsible for the design of the entire space settlement, including the structural framework, selection of core building materials, as well as developing smooth operating systems and comprehensive emergency evacuation procedures to ensure the robustness of all life support systems.

## 02 Mathematics



### The Indispensable Role of Mathematics in Space Exploration

Mathematics is crucial for observing, exploring, and understanding space. Students in the mathematics team will utilize their knowledge to predict and assess the best solutions for problems, such as modeling spacecraft trajectories, analyzing business decisions using Nash equilibrium game theory, selecting suitable suppliers, and creating possibilities for space settlement.


## 03 Bioscience and Medicine



### Leveraging Biology to Support Life in Space

Humans, plants, microorganisms, and animals need methods for long-term survival in the extreme environment of space. Students will conduct essential biological research and technological development to enable organisms to repair damaged cells and remain immune to diseases in the conditions of microgravity and space radiation.

## 04 Artificial Intelligence



### Applications of Artificial Intelligence in Space Scenarios

Students will design the robotic systems within the settlement, creating an entirely new communication infrastructure, providing emergency measures in critical situations, while ensuring that the design of the automation department meets the needs of other departments. They will also consider how to replace control systems with robots while reducing the number of robots.

**Date:** Jan.18th- Jan.27th, 2025 (10 Days)

**Subjects:** Engineering, Maths, Bioscience and Medicine, AI

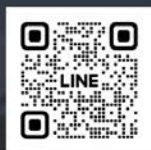
**Grade:** 10-12

**Fee:** 5258 USD

- **Inclusive:** Tuition, hotel accomodation fees (twin room), breakfast, excursions fees; ASEEDER group leader's fee; local transportation fee (including two days of round-trip transportation between London airports and accommodation, and two days of cultural exploration in Cambridge and London, using coaches); international insurance.
- **Exclusive:** Lunch and dinner; international transportation cost (from Beijing/Shanghai/Shenzhen/Hong Kong), you can use a third party service or ASEEDER's unied service (please confirm with the responsible teacher at ASEEDER before purchasing tickets); visa fee and visa service fee: 2400 RMB (ASEEDER VIP visa service ensures successful visa approval; in case of visa refusal, all visa and programme fees will be refunded without any loss).

### Requirements:

- English language levle equivalent to IELTS level 6.0 or TOEFL 80
- Recommendation letter from your teacher as proof of English proficiency, or a phone interview with an ASEEDER staff member
- Priority for awarded students from ASEEDER STEM assessment



Scan the code to sign up