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# Global Space Design Challenge Summer Programme 2019

Imperial College London

Saturday 13<sup>th</sup> July - Wednesday 24<sup>th</sup> July 2019





Impress your peers and enhance your
University Application.
Be the president of your own company,
a lead engineer or space scientist
at this prestigious STEM event

Are you interested joining a 'Company' as part of An Industrial Simulation?

Space settlements are designed by engineers with the help of doctors, lawyers, scientists and engineers. If you want to be an engineer, space scientist, automation expert or business manager, this course is for you.

This is an intensive residential summer programme for the highest achieving students throughout the world. It offers you the chance to learn from academics and business leaders at a world class university, culminating in a two day challenge patterned after the UK Space Design Competition (UKSDC) and the International Space Settlement Design Competition (ISSDC).

Twelve students selected from the winning company of the challenge, will be invited to attend either the USDC national finals or the ISSDC held at NASA's Kennedy Space Center, Florida\*



Get ahead of your peers

Stand out from the crowd

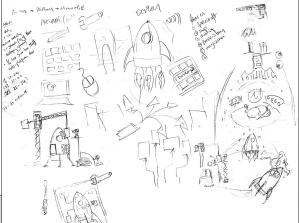
Gain a competitive edge with your University Application

Improve your written and verbal presentation skills

Find hidden talents







# As a participant you will:

- Be mentored by world-class academics and industry experts
- Take your subject knowledge to the next level through an intensive academic programme of lectures, seminars and practical sessions.
- Access professional advice and guidance with University applications, including customized tours and lectures at both the Universities of Oxford and Cambridge.
- Work as a team design a settlement in space, and experience the joys and challenges of working in a large industrial company
- Enjoy meeting like minded students and make life-long friends. In spite of the intensive study programme, there will be opportunities to enjoy social activities and some of the attractions that London has to offer
- Receive a valuable course certificate of achievement and competition medal.

Design a space settlement as an aerospace engineer, designer, medical expert, or robotics designer.

Learn from Industry experts, design a futuristic space settlement as part of a management team.



## THE CHALLANGE

The challenge is modeled on the work of the UK Space Design Competition which has been successfully running educational events in the UK for the past 12 years., founded by Dr Randall S. Perry. Dr Perry is a Senior Research Investigator, Imperial College London, and Honorary Chairman of the Space Science Engineering Foundation, a UK educational charity.









Start times	Saturday 13 <sup>th</sup> July	Sunday 14 <sup>th</sup> July	Monday 15 <sup>th</sup> July	Tuesday 16 <sup>th</sup> July	Wednesday 17 <sup>th</sup> July		
08:00		BREAKFAST					
09:00		DREAKPAST					
		Introduction to London & Imperial College London	Introduction to Space Design Challenge  Jenny Lyons Trisha Saxena	Physical Environments in Space	Lecture at Oxford University and Masterclass with Oxford University Admissions Staff		
10:00		Meet participants,	Space Now And Space In The	Humans in Space	Elective discussions:-		
		mentors & staff	Future	Trainans in Space	Elective discussions.		
				Kevin Fong	A. Mathematics		
			Jeremy Curtis UK Space Agency		Or		
			BREAK				
11:00	ARRIVAL MEET & GREET	Introduction to summer camp and shedule	Space bodies and Geophysics of Planets, The Universe	Space body and Planetary Protection	B. Rocketry (Chemistry of Space)		
	GREEI		Professor Mark Sephton		Tour of Oxford University		
12:00			LUNCH				
13:00		Tours of London Natural History Museum Science Museum Harrods	Ready for Space 2050  Tony Mears UK Space Agency	Space Medicine and Physiology	Masterclass with Dr Marcus du Sautoy FRS, OBE		
14:00			WORKSHOP Developing Your Product	The Dawn of Robots – Positronic Man			
15:00			CAD design – Structural Design	Automotion Engineering			
16:00			Presentation Design Gannt Charts Theo Macklin-Leader plus tutors	Design and Architecture	Return to London		
17:30	DINNER		DINNER	DINNER	DINNER		
18:00		DINNER		110			
19:00				MOVIE NIGHT			

Start times	Thursday 18 <sup>th</sup> July	Friday 19 <sup>th</sup> July		Saturday 20 <sup>th</sup> July	Sunday 21 <sup>st</sup> July		
08:00		BREAKFAST					
09:00	Lecture at Cambridge	Propolusion: the future of controlled explosions Shayne Beegadhur			Introduction to the Space Design Challenge		
10:00	University and Masterclass with Cambridge University	Law and Order Nigel Jackson Karan, Missick &	in Space Colonies  Traube	How Companies are organised and Run	How to win and go to NASA's Kennedy Space Center		
	Admissions			BREAK			
11:00	Staff Electives:- A. Apects of	What is Life and the Importance of Defining Life in Assrobiology  Dr Randall S Perry		Leadership and Communication	Requests fot Proposals (RFP) Alison Ahearn		
12:00	Computing			LUNCH			
13:00	Or  B. Chemistry (Chemistry of Space)	OPTION A  Tour and Admission Masterleass of London Universities	OPTION B  Intensive Specialized Training Electives  Coding, Programming, Computer System Design –	WORKSHOP  Presenting Skills Writing Skills	Selection of Company Officers and Management Dr Randall S Perry & Tutors Professonal Talks – Structual Engineering		
15:00		Kings College UCL London School Economics	Neelesh Ravichandran  Medical Issues – Kamogelo Thutoetsile		Operations Engineering Human Engineering BREAK		
16:00	Return to London	Queen Mary University of London			Professional Talk – Automation Engineering Neelesh Ravichandran		
17:30	DINNER			DINNER	DINNER		
18:00		DINNER					
19:00	Guest Lecture	FREE TIME		Guest Lecture	Company Meeting with CEO and Members		

Start times	Monday 22 <sup>rd</sup> July	Tuesday 23 <sup>th</sup> July	Wednesday 24 <sup>th</sup> July
		Hand in memory stick with Company Presentations	
08:00		BREA	KFAST
09:00	Companies Work on Settlement Design	COMPANY PRESENTATIONS Each Company will have 30 minutes plus 10 minutes judges questions	DEPART FOR HOME
10:00			
10.30		BREAK	
11:00	LUNIOU	Continue Company Presentations	
12:00	LUNCH	LUNCH	
13:00 14:00		LUNCH	
14:00		Judges Deliberate Student Activity with Jenny Lyons	
15:00	Companies Work on Settlement Design	Judges Discussion of Presentations	
15:45		Judges Announce the Winning Company	
16:00			
16:30		Winning Company selects students to go to NASA'S Kennedy Space Center July 2020	
17:30	DINNER		
18:00		DINNER PARTY WITH CERTIFICATE PRESENTATIONS	
18:30	Continue to Work on Designs		
22:30	Lights Out		

# Selected Guest Speakers



**Dr Randall Perry** 

SSEF & SDC Founder,

Senior Research Investigator Imperial College London, Royal Society Fellow and University of Oxford Fellowship



Marcus du Sautoy FRS, OBE

Simonyi Professor for the Public Understanding of Science and a Professor of Mathematics at the University of Oxford.



**Dr Richard Ghail** 

SSEF Trustee Chair

Lecturer in Engineering Geology, based in the Department of Civil and Environmental Engineering, Imperial College London



Trisha Saxena

Alumni of the UKSDC and the International Space Design Competition

Final year at Imperial College London, studying Physics



**Alison Ahearn** 

Deputy Director Galactic Challenge

Principal Teaching Fellow at Imperial College London



**Jeremy Curtis** 

Head of Education and Skills, UK Space Agency



Professor Mark Sephton

Head of the Department of Earth Science and Engineering, Imperial College London.



**Scot Fisher** 

Scott Fisher is an Opto-Mechanical Engineer Surrey Satellite Technology Ltd



Kamogelo Thutoestsile

Medical Doctor, studied at University of Cambridge, Alumni UKSDC and NASA ISSDC



Jenny Lyons

Director of Education Outreach UK Space Science Engineering Foundation



#### **ACCOMODATION AND MEALS**

All rooms are in Imperial College London, within a short walking distance to the venue. Rooms are two person shared however other options are available on request. Meals included are Breakfast, Lunch and Evening Meal.\*\*

#### **MENTORS**

Experienced Space Design alumni available 24hrs a day for all participants.

### **AIRPORT MEET AND GREET**

Students will be individually met at airport arrivals by a member of our staff and transfers to accommodation will be provided.

## **Further Information**

HEALTH – Students will have access to a nurse, GP and hospital facility 24hours a day.

CLIMATE - Summers have pleasant temperatures with **average** high temperatures around 21 degrees Celsius (70°Fahrenheit) and night temperatures of 11 degrees Celsius (52°F).



For more information contact us at:

enquiries@gspacedc.com

Call +44 (0) 7986928535/ 7584190961 https://gspacedc.com

- \* the twelve students selected to go to NASA the following year will have additional costs not provided by the Global Space Design Challenge
- \*\* Adult rooms available upon request

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**GLOBAL SPACE DESIGN CHALLENGE**