

Immersive Experiences Days 1-5

Civil and Structural Engineering

- Use core concepts and real-world constraints to design a civil engineering masterpiece
- Build a structure to carry weight across two points in a graduate recruitment-style group task
- Compete against other attendees to impress the judges and become the most successful engineer

Materials and Aerospace Engineering

- Understand the physics of flight when manufacturing a high-performing aerofoil
- Work with a Rolls Royce engineer to improve and test 3D-printed aerofoil designs
- Find the optimum conditions for flight using a wind tunnel
- Discuss your results with top material and aerospace engineers and propose solutions to achieve the most aerodynamic design

The Boeing Experience

- Visit an airfield and explore a range of commercial aircraft with pilots and aerospace engineers
- Learn how the design of different aircraft and gliders varies depending on function
- Rig and derig a glass fibre glider with traditional controls, working as a team to lift the wings and secure the main rigging pins
- Work alongside electrical engineers and pilots to programme a fly-by-wire control panel

Engineering in the 21st Century: Robotics and Machine Learning

- Discover how modern engineering has become more efficient with the invention of ground-breaking technology
- Investigate how innovative biomedical engineering solutions will improve medical diagnostics and enhance treatments
- Explore how automation and data are taking over the manufacturing industry
- Design your own AI creation with top robotics engineers
- Decipher what the future of engineering looks like and how you can help solve global challenges

How to Become a Successful Engineer

-Your path to success: understanding the key decisions ahead and how to maximise your chances of success

-Making the right subject choices: A-level/IB/university and beyond

-Securing work experience and designing an impactful CV/resume

-Powerful interview techniques

-Coaching from engineers on what you can do now to stand out in the future

Immersive Experiences Days 6-10

Enter the Supercar Studio

-Gain access to the largest collection of classic cars in the UK and discover the evolution of the motor vehicle

-Meet engineers who have helped create the world's most prestigious cars

-Learn the unique engineering features of one of the most sought-after cars in the world

-Take apart a petrol engine under the supervision of a top mechanical engineer

-Assess the transformation of vehicles as we move away from petrol towards electric energy

-Design your own electric vehicle under the guidance of experts

Engineering and the Environment: The Thames Barrier

-Visit an engineering megastructure, The Thames Barrier: a world-leading sustainable engineering feat in London

-Explore the intricacies of the environmentally friendly design and uncover its dual purpose

-Use what you've learnt in a simulated climate emergency: work together to protect the inhabitants of the Thames Estuary from imminent tidal flood risk

-Present your group proposal to a panel of leading environmental advisors

-Receive live feedback on your solutions

The Rise of the Smart City

-Discover the cities of the future: smart, sustainable urban spaces

-Investigate how we can engineer innovative solutions to tackle the challenges of climate change and population growth

-Layout the plans and designs for your own smart city and receive feedback from experts

- Network with engineers and senior project leaders: find out what it takes to work for an award-winning engineering firm

Electrical Engineering

- Explore the key principles behind electrical engineering
- Take apart a household appliance and break it into its constituent parts
- Put your creativity to the test and use existing components to invent something from scratch
- Automate your new invention with a microchip and compete to win a prize from our panel of expert judges

Networking Event With Top Engineers

- Take part in a private networking session with top engineers
- Put your newfound knowledge to the test
- Have your burning questions answered by those in the know
- Receive valuable advice from experts in the field

Immersive Experiences Days 11-15

CAREERMAX

Over the next five days, we will prepare you to outperform others in the race to become a top engineer. You will be given dedicated coaching on how to become a world-class professional in any industry, with training on the most crucial skills that universities and employers are looking for: leadership, teamwork, problem-solving, communication, public speaking, time management and negotiation. Expect hands-on, interactive activities led by professional development experts, to help turn you into a confident young engineer, right now.

Leadership & Teamwork Coaching

- How you can build a high-performance team
- The most effective styles of leadership you can adopt
- What makes the ultimate team player?
- Inspiring and motivating others
- Leading vs managing

Leadership & Teamwork Challenge: work with your team to try and devise how to create a city fit for human habitation on Mars

Public Speaking & Communication Coaching

- Public speaking coaching by a specialist who trains CEOs
- Perfecting enunciation, tone, pace and body language
- How you can engage an audience and read the room
- The art of persuasion
- How to communicate effectively in a team environment
- Understanding emotional intelligence and using empathy
- Building strong interpersonal skills
- Influencing others

Communication challenge: use your communication skills to guide a blindfolded team member to safety on an obstacle course

Public speaking challenge: critically analyse public speaking performances

Negotiation Coaching

- Understand the art of negotiation and its importance
- How to identify when you are actually in a negotiation
- The typical stages of a negotiation
- Key negotiation styles
- Building relationships
- Key tactics: anchoring, tradeable concessions, commitment tactics, bluffing, injecting urgency, varying pace and more

Negotiation challenge: enter a simulated hostage negotiation scenario. Work with your team to get the hostage released

Problem-Solving Coaching

- How you should approach problems and solve them decisively
- Analytical skills: identifying and structuring problems
- Creative and lateral thinking
- Effective decision-making
- Implementing solutions, analysing results and making changes

Problem-solving escape room: work through a series of complex problems under time pressure

Time Management Coaching & Reflection

- How successful people manage time
- The time management quadrant
- Setting goals, prioritising, simplifying and re-evaluating
- The power of hyper-focusing
- Eliminating distractions
- Practising the '4Ds': doing, deferring, delegating and deleting
- Implementing solutions, analysing results and making changes

Time management challenge: enter a humanitarian crisis simulation. Identify your goals, decide your priorities and execute them under time pressure