

immerse
EDUCATION

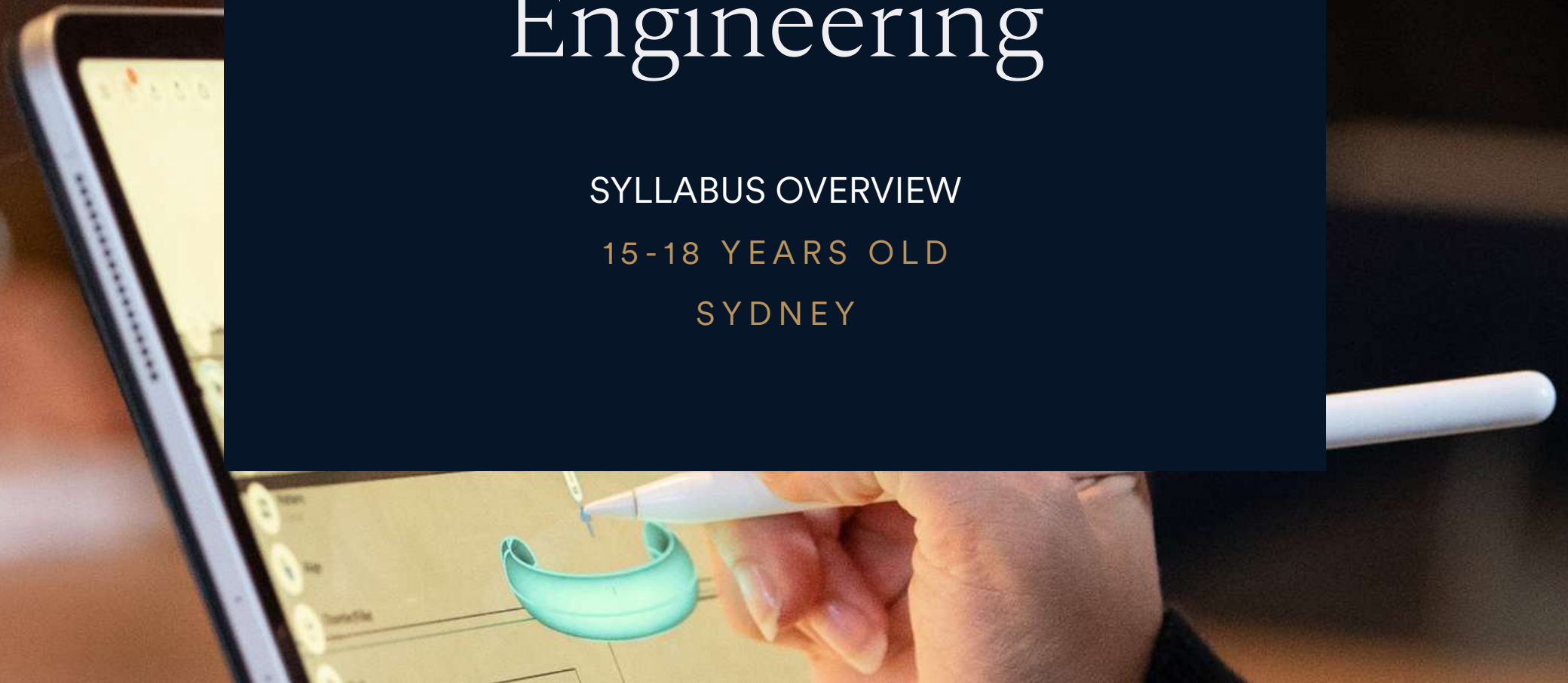
CAREER
— Insights

Engineering

SYLLABUS OVERVIEW

15-18 YEARS OLD

SYDNEY



About the Programme

Immerse Education is an award-winning provider of summer experiences offering academic and career-focused programmes for high school students worldwide, in such locations as Boston, Cambridge, London, New York, Oxford, San Francisco, Singapore, Sydney, Tokyo, and Toronto. Our programmes aim to deliver engaging, academically challenging content within a university-style classroom environment.

The Career Insights programmes bring together industry professionals in a unique learning model grounded in project-based learning. Students gain valuable insight into what it is like to study their chosen subject at an advanced level and apply their skills in real-world contexts through interactive sessions, career skills workshops, and industry visits.



PLEASE NOTE:

The topics depicted in this guide represent examples of the types of modules students can look forward to participating in during the programme. Please note that final syllabi are subject to modification.



SYDNEY



15-18



CAREER INSIGHTS

Explore Future Careers

The Engineering Career Insights programme in Sydney introduces you to how engineering shapes the modern world, from renewable energy and transport systems to construction, technology, and design. You'll explore how engineers turn ideas into reality through innovation and problem-solving. By working collaboratively on projects and case studies, you'll gain insight into the career opportunities within engineering and develop the skills that help future professionals drive progress in sustainable and practical ways.





Project Based Sessions

You'll engage in applied sessions designed to simulate real engineering challenges. Each session focuses on critical thinking and hands-on experimentation. You might design a structure, analyse a system, or model a sustainable solution using creative and analytical approaches. These activities mirror the collaborative problem-solving engineers practise daily. By the end of the programme, you'll have strengthened your understanding of how science and mathematics are applied to create real-world solutions.

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Industry Visits

Sydney's dynamic landscape of construction, energy, and technology companies offers an ideal opportunity to experience engineering in action. Industry visits will give you a closer look at how engineers design, build, and maintain the systems that support modern life. You'll explore how different branches of engineering connect across sectors, from environmental projects to digital innovation — and how teamwork and communication are as important as technical expertise in every engineering career.



Why Get Career Ready?

Every young person needs high-quality career guidance to make informed decisions about their future. Relevant and informative career guidance is necessary for social mobility. Despite the need for quality careers guidance for young people, it is one of the most lacking areas in schools around the world. In 2013, Gatsby introduced the Gatsby Benchmarks which offer useful insight into effective academic models that prepare students for future careers. Immerse Education's Career Insights programme is dedicated to delivering programmes that meet the eight important pillars that make up the Gatsby Benchmarks as outlined below.



A stable careers programme



Encounters with employers and employees



Learning from career and labour market information



Experiences of workplaces



Addressing the needs of each student



Encounters with further and higher education



Linking curriculum learning to careers



Personal guidance



Aim of the Engineering Programme

The Engineering Career Insights programme in Sydney blends scientific exploration with practical application. You'll learn how engineers use creativity, logic, and innovation to address global and local challenges. By connecting theoretical understanding with hands-on activities, the programme helps you develop the mindset, problem-solving ability, and teamwork skills that form the foundation of every successful engineer's career.

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Introduction to Engineering and Applied Innovation

Begin by exploring what engineers do and the impact their work has on society. You'll gain an overview of key engineering disciplines — mechanical, civil, electrical, and environmental — and learn how they overlap in solving real-world problems. Through team-based challenges and practical tasks, you'll see how ideas evolve into solutions and how innovation and collaboration drive modern engineering projects.

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Engineering Fundamentals

Strengthen your grasp of the physical and mathematical principles that underpin engineering. You'll study topics such as forces, energy, and motion, then apply them through simple experiments and problem-solving tasks. By translating theoretical understanding into practical examples, you'll learn how engineers approach technical challenges with creativity and precision. This topic helps you develop analytical thinking and confidence in applying engineering methods.

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Sustainable Systems and Design

Explore how engineers address sustainability challenges in urban and environmental contexts. You'll learn about renewable energy, sustainable materials, and efficient infrastructure, discussing how innovation supports long-term environmental goals. Practical group exercises will invite you to design or model solutions to sustainability problems. This topic connects engineering theory to current global priorities, helping you see how engineers make a measurable difference through responsible design.



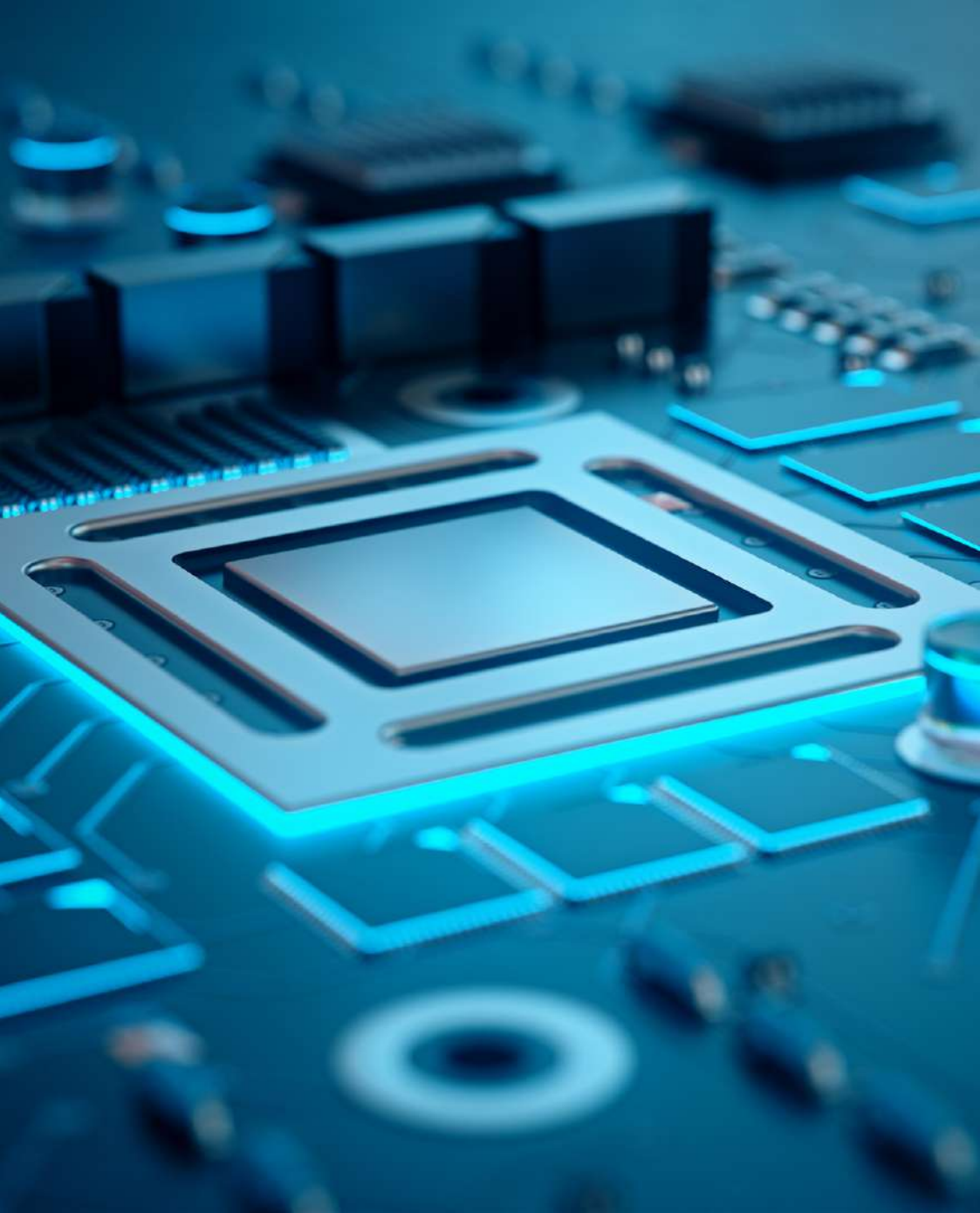
Structural and Civil Engineering

Examine how structures are planned, designed, and maintained to ensure safety and functionality. You'll explore the engineering behind bridges, buildings, and transport systems, using simple modelling tasks to understand how forces act within structures. By applying design and analysis principles, you'll gain insight into how civil and structural engineers combine science, creativity, and teamwork to shape the built environment.

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Electronics and Smart Technologies

Discover how technology and engineering intersect to shape modern innovation. You'll explore fundamental electronic systems, automation, and the use of smart technology in everyday applications. Practical exercises will help you understand how sensors, circuits, and control systems are used in areas like transport, communication, and manufacturing. This topic shows how engineers adapt traditional principles to create efficient, intelligent, and connected systems.



Professional Skills for Engineers

Develop an understanding of what it means to work as an engineer in today's world. You'll learn about career pathways, professional ethics, and the importance of teamwork and communication in engineering roles. Interactive sessions will focus on presentation, collaboration, and project development. This topic helps you reflect on your own interests, understand industry expectations, and build confidence in your ability to apply engineering skills beyond the classroom.





Career Development Plan

Throughout the programme, every student will work on an individual project focused on shaping their future career pathway. This project is designed to bring together the knowledge and insights gained during the programme, including an understanding of the subject area, the industry, and the variety of opportunities it offers. Guided by their own interests and passions, students will consider potential directions for study and work. With support from tutors during one-to-one sessions, participants will develop their project into a clear and personalised plan, which they will present at the end of the programme.

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After your course

You will leave with enhanced knowledge, a clearer vision of career pathways, and practical outputs for your portfolio. Every student also receives a detailed evaluation from their tutor, which is personalised to highlight strengths and suggest potential areas for growth. This evaluation can provide valuable support for future academic or career applications.

Step into your future



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CAMBRIDGE



LONDON



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NEW YORK



SAN
FRANCISCO



SINGAPORE



SYDNEY



TOKYO



TORONTO

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+ **3 US college credits**

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97%
Participants would
recommend Immerse

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FAQS

