

COURSE OVERVIEW

# Faculty of Sciences and Technology

15-17yrs



 Dukes Cambridge



## Dukes Cambridge

Ages: 15-17

Duration: 2 weeks

### At a Glance

## Innovating the Future Through Science and Technology

At the Faculty of Science and Technology, you will embark on an exciting journey into the world of STEM (Science, Technology, Engineering, and Mathematics). Over two weeks, this programme offers a deep dive into the principles that underpin modern science and technology, providing you with the tools to innovate and excel in these dynamic fields.

The curriculum is designed to stimulate your scientific curiosity and enhance your problem-solving skills. You'll explore key concepts in physics, chemistry, biology, and engineering, gaining a solid foundation in the sciences while also learning how to apply this knowledge to real-world challenges. Whether you're analysing data, conducting experiments, or designing technological solutions, you'll be equipped to think critically and creatively.

One of the stand out features of the Faculty of Science and Technology is its focus on practical application. You'll participate in laboratory

experiments, engineering projects, and technology workshops that allow you to put theory into practice. These hands-on experiences are designed to reinforce your understanding of scientific principles while also fostering innovation and technical proficiency.

Collaboration and interdisciplinary learning are at the core of this programme. You'll work alongside peers who share your passion for science and technology, engaging in group projects that require you to integrate knowledge from various disciplines. This collaborative approach not only broadens your perspective but also mirrors the teamwork that is essential in scientific and technological fields.

Studying at the Faculty of Science and Technology is an opportunity to push the boundaries of what is possible. Whether you aspire to be a scientist, engineer, or technologist, this programme will provide you with the knowledge, skills, and experience to drive innovation and make meaningful contributions to the world.

## Sample Timetable

### WEEK ONE TIMETABLE

8:45-9:00	Morning Assembly				
9:00-10:30	<b>Seminar</b> Introduction to Scientific Inquiry	<b>Lecture</b> Fundamental Concepts in Physics	<b>Keynote Guest Speaker</b>	<b>Lecture</b> Engineering Design and Innovation	<b>Seminar</b> Introduction to Laboratory Techniques
11:00-12:30	Time to Shine Project Introduction   Research & Data Analysis   Group Project Discussions   Development and Public Speaking Skills   Presentation Ceremony				
13:30-14:45	<b>Orientation Tour</b>	<b>Seminar</b> Exploring Chemical Reactions	<b>Industry Experience</b>	<b>Seminar</b> Principles of Biology: Life and Organisms	<b>Seminar</b> Physics in Action: Forces and Motion
15:00-16:15	<b>University Coaching</b> Interview Preparation	<b>University Coaching</b> Writing a personal statement		<b>University Coaching</b> Public Speaking Skills	
16:15-18:15	Free Time Tutorials once per week, 16:30-17:30 Career Counselling Clinic, 16:30-17:30				

### WEEK TWO TIMETABLE

8:45-9:00	Morning Assembly				
9:00-10:30	<b>Seminar</b> Chemistry in Everyday Life	<b>Lecture</b> Engineering Solutions to Real-World Problems	<b>Keynote Guest Speaker</b>	<b>Lecture</b> Conducting Scientific Experiments	<b>Seminar</b> Emerging Trends in Science and Technology
11:00-12:30	Time to Shine Project Introduction   Research & Data Analysis   Group Project Discussions   Development and Public Speaking Skills   Presentation Ceremony				
13:30-14:45	<b>Seminar</b> The Biology of Human Systems	<b>Seminar</b> Technology and Society: Innovations for the Future	<b>Industry Experience</b>	<b>Seminar</b> Designing Technological Solutions	<b>Packing and Graduation</b>
15:00-16:15	<b>University Coaching</b> Interview Preparation	<b>University Coaching</b> Writing a personal statement		<b>University Coaching</b> Public Speaking Skills	
16:15-18:15	Free Time Tutorials once per week, 16:30-17:30 Career Counselling Clinic, 16:30-17:30				

Please note the above is given as an example and is subject to change.



## Course Objectives

By the end of this course, you will have a deep understanding of core STEM disciplines, including mathematics, physics, computer science, and engineering principles. You will acquire the skills to solve complex scientific problems, design and implement technological solutions, and communicate your findings effectively. This course is ideal for those aspiring to pursue careers in science, technology, engineering, or research.

### Module 1

#### Foundations of Mathematics and Physics

Build a solid foundation in mathematics and physics by exploring topics such as calculus, mechanics, and electromagnetism, with problem-solving sessions and experiments to prepare for advanced scientific challenges.

### Module 2

#### Computer Science and programming

Explore computer science with a focus on programming, covering the basics of coding, algorithms, and data structures, while learning to develop efficient software solutions for real-world problems.

### Module 3

#### Engineering Principles and Applications

Learn core engineering principles, including materials science, electrical circuits, and mechanical systems, through hands-on projects that equip you to design and build technological solutions for real-world challenges.



### Previous projects include:

**Project 1:** "Developing a Sustainable Energy Solution" – A comprehensive design and prototype for a renewable energy system that addresses local energy needs.

**Project 2:** "AI in Healthcare: Enhancing Diagnostic Accuracy" – A research project exploring the application of artificial intelligence to improve diagnostic processes in medical practice.



## Time to Shine

For your Time to Shine project, you will undertake an extended research or engineering project that allows you to apply the concepts learned during the course. This project will culminate in a presentation or demonstration where you will showcase your scientific discovery or technological innovation.



## Industry Experience

Gain first-hand experience in the STEM fields with our industry experience sessions. You will have the opportunity to visit research labs, tech companies, or engineering firms, where you can observe cutting-edge technology in action, interact with industry professionals, and understand the challenges of applying science and technology in real-world scenarios.



## Guest Speakers

Our programme features guest speakers who are leaders in the fields of science and technology. These experts will share their experiences, discuss the latest advancements in STEM, and provide valuable insights on navigating a successful career in these dynamic fields.



## Academic Coaching

Throughout the course, you will receive personalised academic coaching to help you achieve your goals. Our experienced tutors will provide feedback on your projects, assist you in developing your technical and analytical abilities, and guide you in honing the skills essential for success in science and technology.

## Secure your place

A booking can be made online on our website [summerboardingcourses.com](https://summerboardingcourses.com)

Our programmes fill up fast so we recommend you book early to secure a space on our most popular courses. If you are booking on behalf of a family, please let us know at the time of booking.



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