Brunel University London | Pathway College

University Foundation Studies in Engineering

The Engineering School offers undergraduate courses in four major subject areas including Design, Civil Engineering, Electronic and Computer Engineering and Mechanical Engineering. All programmes are designed to produce highly qualified graduates who will take up demanding roles within the engineering, design and technology industries by developing leadership, innovation and creative skills, in addition to the core technical and analytical skills, to enable and encourage graduates to follow successful careers and aspire to senior managerial roles.

In Stage 1 of the programme you will take the following core modules, four in the first semester and four in the second.

In Semester one you will study:

- Interactive Learning Skills and Communication
- Mathematics for Engineers 1
- Physics for Engineers 1
- Engineering Concepts
- ICT and Programming Techniques

In Semester two you will study:

- Mathematics for Engineers 2
- Physics for Engineers 2
- Engineering Concepts **continued**
- ICT and Programming Techniques **continued**
- Problem Solving, Creative Thinking and Analytical Skills

Module overview

Interactive Learning Skills and Communication

This module will help you learn how to study effectively at University. Students will be introduced to techniques and strategies to help support and enhance your learning at undergraduate level.

Mathematics for Engineers 1

This module aims to introduce students to recall, select and use their knowledge of mathematical facts, concepts, and techniques in a variety of contexts. Students will be able to construct mathematical argument and proofs through use of precise statements, logical deductions, and inference and by the manipulation of mathematical expressions, including the construction of extended arguments for handling substantial problems presented in unstructured form.

Physics for Engineers 1

This module has been designed to prepare students with knowledge and understanding of Physics, its theory, and concepts, which are required to study Engineering at degree level. Students have been taught how to make connections between different concepts of Physics in Engineering and apply their knowledge in different science and engineering contexts.

ICT and Programming Techniques

The first semester introduces students to software and the development of ICT in Engineering. The second semester introduces students to basic programing language and requires students to write a simple program for assessment by the end of the module. Students will be introduced to different languages and to CAD/CAM.

Engineering Concepts

This module aims to give students the opportunity to research into their chosen Engineering product or service using a range of tools and methods to support the outcomes. Semester 1 introduces students to the theoretical concepts of civil, electronics and electrical and mechanical Engineering. Semester 2 will focus upon core concepts and each student will produce an individual report on a discipline specific project.

Mathematics for Engineers 2

Students will build upon their knowledge and understanding from Maths 1 and continue to learn and apply mathematical skills in various Engineering and Problem-Solving context. Some of the topics students will cover in their Maths Foundation are Number theory, Numerical Techniques, Shapes, Coordinate Systems, Indices, Linear and Quadratics Functions, Inequalities, Polynomials, Exponential and Logarithmic Functions, Sequences, Differentiation, and Integration.

Physics for Engineers 2

Students will build upon their knowledge and understanding from Physics 1 and continue to learn and apply their concepts in various Engineering and Problem-Solving context.

Problem Solving, Creative Thinking and Analytical Skills

The principle aim of this module is to develop understanding and application in a range of methods of investigation relevant to the Engineering profession. The module is designed to develop in students the ability to problem solve, think critically, creatively and innovatively about Engineering, think laterally in regards to problem solving using case studies as well as using analytical techniques developed throughout the Level 0 in Engineering.

Want to know more?
Visit our website:
brunel.ac.uk/pathwaycollege

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