

Engineering Design

Robert Gordon University

Content

Year 1:

You will be introduced and learn the fundamental principles of the engineering design methods and manufacturing processes, properties of engineering materials, metal alloys and heat treatment, what the role of an Engineer is in product development, the primary physics related to statics and dynamics science in order to solve problems, the fundamentals of hydrostatic and thermodynamics systems, the basic concepts and principles of electrical and electronic engineering.

Year 2:

You will gain the ability to solve problems including thermal-fluid and vibration systems, be introduced and develop an understanding of the formal design process for components and machine elements, learn the main manufacturing processes for metals, ceramics, polymer and composite materials, and how to select appropriate materials and the manufacturing processes for a given product, and you will be introduced to CAD and CAM software.

Year 3:

You will gain the skills to analyse and interpret the dynamic structural behaviour of engineering system components, stress analysis of components subject to combined loading, fatigue and failure analysis and fracture mechanics, national and international codes of practice design approaches including BS and Eurocodes, you will be introduced to joining processes and equipment, surface technology and engineering metallurgy, gain an understanding of manufacturing support systems, process planning and production control, quality control, inspection and sustainable manufacturing, learn design methodology including design for manufacturing and design optimisation, project management and finally, you will take part in a group project.

Year 4:

In your final year, you will learn to use finite element methods to analyse a range of engineering systems including static stress, dynamic modal analysis and heat transfer analysis. You will be introduced to design for vibration and manufacturing, quality control and assurance, risk and reliability, cost evaluation and supply change management, learn the skills needed to use a variety of commercial software in design and manufacture of products and the rapid prototyping techniques including NC programming, mould modelling, rapid prototyping and sensitivity analysis, undertake a substantial professional design project incorporating planning, decision making, data collection and critical analysis.

Start Date

September

Qualification

Degree

Study Method

Full time

Award Title

BEng Hons

UCAS Code

H150

Course Length

4 years

Department

School of Engineering

Entry Requirements

2023 entry requirements

Standard entry:

4 Highers at BBCC including Maths and Engineering Science, Physics or another technological subject plus English at National 5 (if not held at Higher).

Widening access entry:

4 Highers at CCCC including Maths and Engineering Science, Physics or another technological subject plus English at National 5 (if not held at Higher).

SCQF Level

10

Progression Routes

«ProgressionRoutes»

Combination Courses

«htmlCombinationCourse»

«htmlCombinationUCASCode»

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