The combination of mechanical, electrical, electronic, computing, measurement and control elements all form an integral part of modern engineering systems and are essential to meet new challenges in engineering innovation. Examples include energy generation, hybrid petrol/electric vehicles, aircraft design, satellite technology, robotic systems and technology for a sustainable environment.

These degrees cover key areas of both electrical and mechanical engineering, reflecting the multidisciplinary nature of modern engineering and the demand for graduates with expertise within and across the boundaries of both disciplines.

They are taught jointly by the Departments of Electronic & Electrical Engineering (EEE), and Mechanical & Aerospace Engineering (MAE).

The degrees have dual accreditation by the Institution of Engineering and Technology (IET) and the Institution of Mechanical Engineers (IMechE), which means that you will be able to capitalise on career opportunities in both or either discipline. You will also gain "chartered engineer" (CEng) status with either of these professional bodies after relevant work experience.

Course Syllabus

**Year 1 – Core Engineering & Science Skills**
You are introduced to the analysis and design of analogue and digital circuits for electronics and power applications, supported by practical laboratory sessions. You also learn the physical principles underlying the design of mechanical systems and structures including topics such as dynamics, thermodynamics and fluid mechanics.

Project work introduces students to design and build activities in fuel cells and hydrogen-powered vehicles. Classes in mathematics and software engineering develop numerical and modelling skills and you gain awareness of the engineering in a class that introduces engineering industry principles and practice.

**Year 2 – Core Engineering & Technology Skills**
You develop key skills for the engineering profession, including team working on practical design projects and oral presentation skills.

**Year 3 – Specialist Engineering Skills**
Your specialist engineering skills through the following topics:

- Computer Aided Engineering
- Software Engineering
- Mathematical Methods for Engineering Analysis
- Signals and Systems Analysis
- Instrumentation and Microcontrollers
- Mechanical Systems in Motion
- Heat and Flow
- Integrated Design of Engineering Systems
- Engineering Innovation & Management
Years 4 & 5 – Engineering for your Professional Future:

Year 4 (BEng Honours & MEng)
You combine a individual design project, with a selection of classes to enhance your technical understanding and project management skills. You take special classes in the design and analysis of electro-mechanical systems and optional topics such as:

- Communications Networks
- Microcontroller Applications
- Robotics Design
- Alternative Energy Systems
- Power System Analysis and Design
- Protection Control & Intelligent Systems
- Flight and Spacecraft
- Computer Aided Engineering
- Control Principles & Techniques

BEng Honours students graduate at the end of this year.

MEng students may spend Year 4 studying abroad at one of our overseas university partners in Europe, the USA, Canada, Japan, Hong Kong, Singapore, Australia or New Zealand. Students who complete Year 4 abroad are awarded the MEng with International Study.

Years 5 (MEng only)
You combine a major group design project with classes in advanced topics. The project has a strong industrial influence, requiring you to design and build a prototype system to showcase at the end-of-year exhibition. Advanced class options include:

- Information Transmission & Security
- Computer Aided Engineering Design
- Electronics for Energy Control
- High Voltage Technology
- Aerodynamic Performance and Propulsion Systems
- Machinery Diagnostics and Condition Monitoring
- Renewable Energy Systems

Teaching and Assessment
Teaching methods involve interactive lectures, small group problem-solving tutorials, practical laboratories as well as industrial visits and seminars by professional engineers. The programme ensures that you develop not only technical engineering and computing expertise, but also communication, project management, leadership and entrepreneurial skills.

Assessment methods include assignments, exams and individual and group-based projects. Both class delivery and assessment make use of web-based and multimedia facilities.

The course typically consists of around 10 lectures, five tutorial/problem-solving classes and three practical classes per week. Students also undertake around 20 hours of self-study.

THESE DEGREES REFLECT THE MULTIDISCIPLINARY NATURE OF MODERN ENGINEERING
Scholarships and Work Placements
Students have access to the industry-supported Scholarship Programme offered by the Department of Electronic & Electrical Engineering. They can benefit from annual bursaries up to £5,000, paid summer placements and mentoring from key UK and global employers such as Jaguar Land Rover and Rolls-Royce.

Students are also eligible for other scholarship schemes the department participates in, such as those offered by BP, Siemens, the Wood Group and the IET Power Academy.

EEE is the only Department in Scotland in the IET Power Academy. It supports career development in the energy sector and offers unparalleled access to major energy companies such as Scottish Power, SSE, National Grid and Rolls-Royce.

For details search for engineering scholarships at www.strath.ac.uk.

Careers
There is a growing demand for graduates with expertise in electrical and mechanical engineering. Career opportunities where expertise in both is essential include aeronautics (control systems for aircraft); automotive industry (electronic performance monitoring and pollution-free vehicles); renewable energy; and marine engineering applications (electronic propulsion, radar and sonar systems). Opportunities also exist in non-technical areas as our graduates possess the first-rate numeracy, literacy, IT, problem-solving and team-working skills demanded by employers.

Recent graduates took up positions as mechanical engineers, design specialists and power systems engineers with employers such as Rolls-Royce, Nexen Petroleum, Jaguar Land Rover, Arup and Siemens.

Contacts
Academic Selector
t: 0141 548 2097/2471
e: eee-ugadmissions@strath.ac.uk

www.strath.ac.uk/studywithus

I hope to pursue a career which focuses on project management within the energy sector. My interdisciplinary degree has equipped me with the technical and transferable practical skills to address challenges in both disciplines.

MARNIE MCKAY
MEng ELECTRICAL & MECHANICAL ENGINEERING WITH INTERNATIONAL STUDY

the place of useful learning
www.strath.ac.uk
University of Strathclyde Glasgow G1 1XQ

Information current at August 2017. Please consult the University website for the most up-to-date information. The University of Strathclyde is a charitable body, registered in Scotland, with registration number SC015263.