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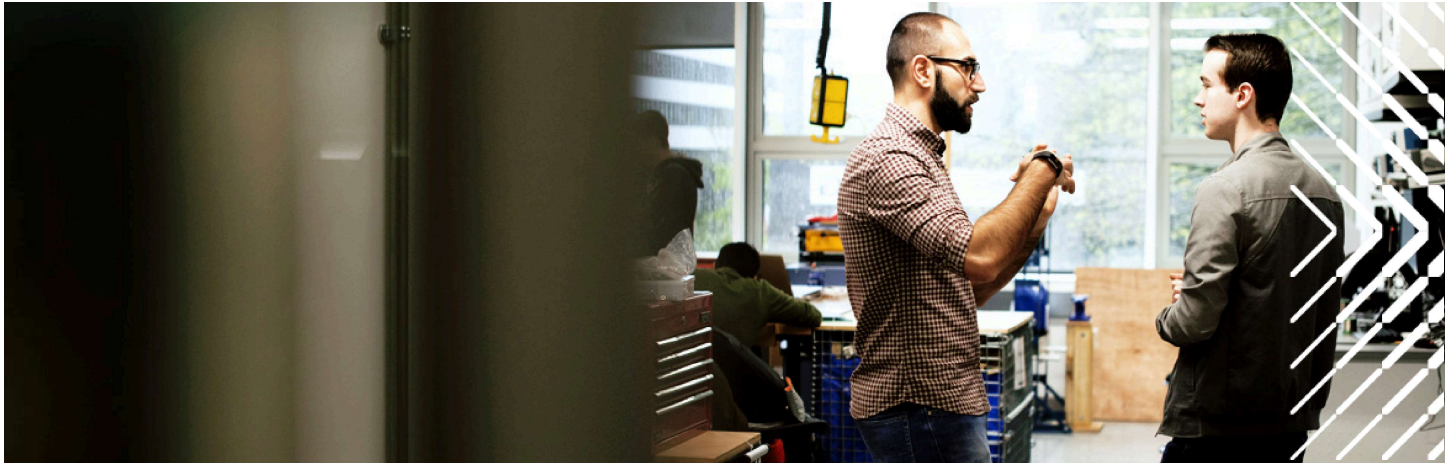
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Civil Engineering MEng (UCAS H202)



UCAS code



Start date



Duration



Qualification



Led by



Location

Undergraduate

Discover more about our Civil Engineering MEng at Warwick

Civil Engineering is the practice of improving and maintaining the built and natural environment. Our degree will allow you to develop expertise in fundamental civil engineering principles in order to enhance the quality of life for present and future generations.

This course is accredited by the Joint Board of Moderators (ICE, IStructE, IHE, CIHT and The PWI). More information is available on the [School of Engineering website](#).

Core modules

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We offer flexible degree programmes that enable you to experience a range of different engineering disciplines before you decide to specialise.


All first year students study a general engineering programme, which is much favoured by industry. From second year onwards you can specialise in one of nine engineering disciplines, or continue on the general Engineering pathway.

You can also switch from the three-year BEng to the four-year MEng if academic requirements and regulations are met. Alternatively, you can switch from the MEng to the BEng if you prefer to graduate earlier.

Year One


Dynamics and Thermodynamics

You will gain a thorough understanding of the fundamental concepts of thermodynamics and the dynamics of mechanical systems. You will study the motion of an object and its causes in one and two dimensions and learn to solve a range of problems using appropriate coordinate systems. You will learn how to use quantities such as impulse, momentum, work and energy conservation to solve problems in dynamics. You will develop an understanding of engineering thermodynamics, considering the properties of working fluids and mechanisms of heat transfer. You will develop and apply an understanding of the First and Second Laws of Thermodynamics, and learn to make appropriate assumptions to model real-life engineering situations, including engine cycles.

[Read more about the Dynamics and Thermodynamics module](#) , including the methods of teaching and assessment (content applies to 2024/25 year of study).

Electrical and Electronic Circuits


You will gain a secure foundation in the fundamental concepts of circuits, devices and systems that underpin all branches of engineering. This will include study of the mathematical operations of AC quantities, including phasors, vectors and complex numbers. You will study the electronic components that comprise complex electrical and electronic circuitry, and control systems theory. You will be encouraged to develop your problem-solving and modelling skills to prepare you for more advanced material in later years.

[Read more about the Electrical and Electronic Circuits module](#) , including the methods of teaching and assessment (content applies to 2024/25 year of study).

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Engineering Design

Design is a major activity within all branches of engineering. This module aims to introduce students to the complexities of the design task and equip them with some of the techniques and experience required to design for a function and manufacturing/construction process within their discipline. You will learn the ability to generate innovative designs and solutions to problems, to design for a particular manufacturing process, to collaborate effectively across teams and deliver compelling presentations of designs.

[Read more about the Engineering Design module](#) , including the methods of teaching and assessment (content applies to 2024/25 year of study).

Engineering Mathematics

Through the practical problem-solving tasks provided in this module, you will gain the skills needed to apply the fundamental mathematical concepts that underpin all engineering disciplines, and prepare yourself for more advanced study. You will apply mathematical, probabilistic and statistical tools and techniques to real-life engineering problems, make appropriate, informed assumptions and examine models using analytical, statistical and numerical techniques.


[Read more about the Engineering Mathematics module](#) , including the methods of teaching and assessment (content applies to 2024/25 year of study).

Engineering Business Management and Professional Skills

Most professional engineers apply their skills within a business organisation. A key objective of business is to be commercially successful. Hence it is important for engineers to appreciate the industrial and commercial environment in which businesses operate and recognise the requirements and constraints created by this environment, ultimately with a view to strategically managing the business to greater success.

The aim of this module is to provide the engineering student with an appreciation of some of the practical problems and issues (such as ethics, equality and diversity) involved in competitively managing an engineering business.

The module presents a systems view of the firm or business, consistent with many engineering models, where a collection of inputs are transformed into outputs which are valued by the customer. For the purposes of this module an engineering business is simply defined as a business that employs at least one engineer. The business could deliver a product or a service, it could be any size from a single consulting engineer to a global corporation and it can take a variety of legal forms from sole trader to public limited company.

[Read more about the Engineering Business Management and Professional Skills module](#) , including the methods of teaching and assessment (content applies to 2024/25 year of study).

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Materials for Engineering




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As an Engineer, you will be required to evaluate and select appropriate materials and manufacturing processes, whilst taking due account of performance, cost and sustainability. During this module you will learn to distinguish the main classes of materials, explain how their structure affects their properties, and describe how their structure can be manipulated to enhance those properties. You will make decisions on the appropriateness of materials for a particular design and justify your choices, as well as being able to evaluate their environmental impact.

[Read more about the Materials for Engineering module](#) , including the methods of teaching and assessment (content applies to 2024/25 year of study).


Engineering Structures

You will build fundamental knowledge of statics and the behaviour of structures that underpin many branches of engineering science in this module. This will provide the knowledge required for further study in the design and analysis of structures from buildings to spacecraft, motor vehicles and wind turbines. The module will increase your ability in mathematical analysis and in particular its application to solving problems in structures and will further help in developing experimental skills and awareness of health and safety issues applicable to working in a supervised laboratory.

[Read more about the Engineering Structures module](#) , including the methods of teaching and assessment (content applies to 2024/25 year of study).

Systems Modelling, Simulation and Computation

Systems modelling is an essential skill that underpins all engineering disciplines, allowing complex engineering problems to be approximated using mathematical models. Systems modelling provides necessary information to make decisions in the design and development of engineering solutions or to investigate systems that are too costly, difficult or unethical to investigate physically. This module focuses on the design and programming of models from first principles by the application of mathematical techniques and avoidance of modelling errors. You will learn how to: represent multi-domain systems graphically, derive models from data, construct a simulation model to predict system responses, and consider design principles that ensure robust model development (covering verification and validation techniques).

[Read more about the Systems Modelling, Simulation and Computation module](#) , including the methods of teaching and assessment (content applies to 2024/25 year of study).

Year Two

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- Dynamics and Fluid Mechanics
- Engineering Mathematics and Data Analytics
- Creative and Conceptual Design
- Materials for Net Zero
- Design, Surveying and Field Practice
- Structural Analysis and Design
- Hydraulics and Water Resources

Year Three

- Managing Engineering Excellence
- Structural Concrete Design
- Structural Steel Design
- Geology and Soil Mechanics
- Design of Earth Structures
- Individual Project

Year Four

- Sustainable Ground Engineering
- Construction Project Management
- Water and Sanitation Technologies
- Design for Sustainability


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Group Project

MEng students participate in a large group project worth 25% of the year, which simulates the multidisciplinary working practices you will experience in your career. Students from all specialist courses work together on these projects allowing you to develop more advanced skills for the workplace and form new friendships and professional networks.

Popular projects include the IMechE Formula Student racing car competition, electric racing motorcycle (TT Zero), IMechE Railway Challenge, creating a human-powered submarine, building search-and-rescue robots with Warwick Mobile Robotics, Warwick University satellite project (WUSAT), Severn Trent reservoir design, or ICE shaping the world infrastructure design for poor communities.

The MEng final-year multidisciplinary group project is unique to the four-year degree and is not something that you would normally find as part of a one year standalone Master's.

[Read more about the Group Project module](#) , including the methods of teaching and assessment (content applies to 2023/24 year of study).

Optional modules

Optional modules can vary from year to year. Example optional modules may include:

- Transport Systems
- Coastal and Flood Resilience
- Innovative Structural Solutions
- Earthquake Resilient Structures
- Structural Dynamics and Vibration
- Renewable Energy
- Quality Systems
- Simulation of Operations



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Why Warwick



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Discover why Warwick is one of the best universities in the UK and renowned globally.

About Warwick

Accommodation

Wellbeing

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Register to take part in our next Open Day



Page updates

We have revised the information on this page since publication. [See the edits we have made and content history.](#)



9th in the UK

(The Guardian University Guide 2024)



67th in the world

(QS World University Rankings 2024)



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