

Changes to previous information

During the global COVID-19 pandemic, we prioritised the health, wellbeing and safety of our students and staff.

As we start the new academic year, your health, wellbeing and safety remains our top priority. This means when we return to our campuses and buildings in September 2020 social distancing and other health and safety measures will be in place. This is to help keep you, and others around you, safe. We will respond to the requirements of vulnerable students regarding their personal safety on an individual basis.

We remain committed to delivering an outstanding education and student experience both on campus and online. Like most universities, we'll be providing a mix of on-site face-to-face and digital learning and teaching. The exact mix will vary between courses and course modules taking into account teaching requirements and other considerations such as meeting the safety of vulnerable staff.

It is important to emphasise that a face-to-face, on-site experience will be delivered within the Government and Public Health England guidance and providing there are no serious unforeseeable public health issues that result in the Government introducing further lockdown measures.

Our response to the pandemic means we may have made changes to your course. This is to take account of these important health and safety measures.

We ask you to read the information provided about course changes carefully. We detail what we include in our online prospectus and explain what has changed.

You should read our statement of changes alongside any information provided in videos, at open days or in other promotional materials. This is because the information may also have been affected by the changes we had to make. We are providing this information so you can make an informed choice about whether the course remains suitable for you.

When you register for your course, you will be asked to confirm you have read about our changes and you agree to them. It means that by choosing to continue with your application, and register with us, you accept these changes and are happy to study your course with us.

We really look forward to seeing you in the next academic year. In the meantime, if you want to find out more about University life from this September, and being part of our supportive and welcoming community, please visit our [September 2020 web pages](#).

Current published course related information		
Course title	Mechanical Engineering (BEng)	
Award level	BEng – Single honours only	
How do you want to study?		
Start Date	Sept 2020	
Modes of study	Full-time	
Duration	3 years full-time	
UCAS code	H145	
Location	Canterbury	
Partner institution	N/A	
Available with a Foundation Year	Yes	
Overview		
	<p>Unlock your creative potential and build technical expertise with a degree in Mechanical Engineering that will help you become a highly skilled, work-ready graduate.</p> <p>If you want to work at the cutting-edge of engineering, developing and designing the components and machinery used in manufacturing, construction and other industries, then this is the course for you.</p> <p>It offers you real-world application of science, technology and maths where you'll take genuine problems proposed by the industry and apply your practical skills and technical knowledge to solve them, working with engineering experts along the way.</p> <p>On completion of the course you'll be skilled in professional engineering practice and prepared to work as an effective, industry-ready engineer who is on track to become an Incorporated Engineer.</p>	
Why study Mechanical Engineering?		
	Mechanical engineers make a vital contribution to a variety of industries by developing, implementing and maintaining	Mechanical engineers make a vital contribution to a variety of industries by developing, implementing and

	<p>engineering solutions that ensure products are manufactured efficiently and to customer's quality requirements.</p> <p>Our hands-on course will prepare you to enter an engineering career with varied and exciting prospects. You could be involved in finding solutions to automate packaging processes for your favourite biscuits or using energy as efficiently as possible throughout a building. Wherever the course leads you, you'll be equipped with the skills you need to work as a mechanical engineer ensuring systems meet demand, are reliable, integrated and operate smoothly.</p> <p>There is a strong practical element to the course and you'll spend a significant amount of time in workshops and laboratories using your enquiring mind and demonstrating your technical skills and creativity.</p> <p>Read less You'll use the pioneering CDIO (Conceive, Design, Implement, Operate) approach to problem solve mechanical engineering issues. The CDIO approach is an international engineering education model, developed by the Massachusetts Institute of Technology (MIT). It allows you to learn in a practical, hands-on way to find creative, evaluated solutions to industry related engineering challenges. We we are one of only a handful of universities in the UK to offer CDIO.</p> <p>Throughout the course you'll develop employability and job application skills to help you apply for placement opportunities that could open the door to your future career and/or prepare you for further studies such as an MEng course.</p>	<p>maintaining engineering solutions that ensure products are manufactured efficiently and to customer's quality requirements.</p> <p>The course learning is adhering to World Health Organisation (WHO) and UK GOV Coronavirus guidance to ensure a safe learning and working environment during COVID19 endemic. The course will consist of a blend of on and off campus practical learning in engineering and science laboratories and off-campus on-line theoretical and practical learning. The off-campus hands on practical learning are being designed to use resources provided or common household items so we can support your learning in your home. The on and off campus and on-line practical learning are being designed to help you develop practical skills, also an enquiring mind and demonstrating your technical skills and creativity.</p> <p>On-line learning will be provided by virtual learning environment Blackboard and appropriate specialist software tools that support certain module areas, for example computer aided design using Fusion 360</p> <p>Read Less The on and off campus practical elements of the course will prepare you to enter an engineering career with varied and exciting prospects. A proportion of group-work activities will be on-line developing your skills for working world COVID19 endemic. You'll work on individual and group projects supported with on-line tools akin to current professional engineering working activities and Personal Academic Tutor. You will be supported by academic teaching team on and off campus and on-line at</p>
--	---	--

		<p>timetabled sessions.</p> <p>Our hands-on learning on and off campus and on-line on the course will prepare you to enter an engineering career with varied and exciting prospects. You could be involved in finding solutions to automate packaging processes for your favourite biscuits or using energy as efficiently as possible throughout a building. Wherever the course leads you, you'll be equipped with the skills you need to work as a mechanical engineer ensuring systems meet demand, are reliable, integrated and operate smoothly.</p> <p>You'll use the pioneering CDIO (Conceive, Design, Implement, Operate) approach to problem solve mechanical engineering issues. The CDIO approach is an international engineering education model, developed by the Massachusetts Institute of Technology (MIT). It allows you to learn in a practical, hands-on way to find creative, evaluated solutions to industry related engineering challenges. We are one of only a handful of universities in the UK to offer CDIO.</p> <p>Throughout the course you'll develop employability and job application skills to help you apply for placement opportunities that could open the door to your future career and/or prepare you for further studies such as an MEng course.</p>
--	--	---

<p>Entry requirements</p>	<p>88-112 UCAS points (including A level or equivalent in maths, physics, applied science or engineering).</p> <p>5 GCSEs grade C/4 or above (including maths, English, science) Science can be physics, chemistry, biology or computer science This course is also available with a Foundation Year.</p> <p>More information about entry requirements.</p>	
<p>About the course</p>		
<p>Years 1-3</p>	<p>You'll begin the course by learning about professional practical engineering and you'll study engineering design and engineering science. As you progress through the degree, you'll explore mechanical engineering in more depth studying modules such as dynamics of solid materials and mechanics, and material and mechanical methods of test analysis.</p> <p>All through the course, you'll experience plenty of hands-on learning through active learning laboratories, engineering laboratories and the use of engineering workshops and makerspace. You will undertake small group projects, typically sourced from industry. You'll also develop skills enabling you to:</p> <p>work effectively and supportively in diverse and inclusive groups communicate effectively in groups and one to one apply project management to group-work apply principles of commercial management and consideration of wider issues.</p> <p>Each year you'll undertake a large group project. These projects, which are typically sourced from industry, will help you to develop your learning in engineering business, practice and project management.</p> <p>In year 1, you'll have the opportunity to develop your knowledge and understanding and some application. As you progress to year 2, you'll apply your knowledge and understanding to conceive, design, build</p>	<p>You'll begin the course by learning about professional practical engineering and you'll study engineering design and engineering science. As you progress through the degree, you'll explore mechanical engineering in more depth studying modules such as dynamics of solid materials and mechanics, and material and mechanical methods of test analysis.</p> <p>All through the course, you'll experience through hands-on learning from on- and off campus and on-line learning will develop your practical problem-solving approach through active learning laboratories, engineering laboratories and the use of engineering workshops and makerspace. You will undertake small group projects, typically sourced from industry. You'll also develop skills enabling you to:</p> <p>work effectively and supportively in diverse and inclusive groups communicate effectively in groups and one to one apply project management to group-work apply principles of commercial management and consideration of wider issues.</p> <p>Each year you'll undertake a large</p>

	<p>and operate a solution to a problem. In your third year, you will undertake an individual research and development project that will inform the group project and help you to develop and illustrate the ability to critically analyse the application of your knowledge and understanding to solve an engineering problem.</p> <p>You'll also have the opportunity to undertake a work placement and gain valuable experience working alongside industry experts.</p> <p>We also offer a number of four-year integrated Masters degrees (MEng). If you are interested in this higher-level degree, then take a look at the following course pages:</p> <p>MEng (Hons) Mechanical Engineering (Advanced Manufacture) MEng (Hons) Mechanical Engineering (Building Services) MEng (Hons) Mechanical Engineering (Systems)</p>	<p>group project which will supported through use on-line tools and on-line project management approach akin to industry. These projects, which are typically sourced from industry, will help you to develop your learning in engineering business, practice and project management.</p> <p>In year 1, you'll have the opportunity to develop your knowledge and understanding and some application. As you progress to year 2, you'll apply your knowledge and understanding to conceive, design, build and operate a solution to a problem. In your third year, you will undertake an individual research and development project that will inform the group project and help you to develop and illustrate the ability to critically analyse the application of your knowledge and understanding to solve an engineering problem.</p> <p>You'll also have the opportunity to undertake a work placement and gain valuable experience working alongside industry experts.</p> <p>We also offer a number of four-year integrated Masters degrees (MEng). If you are interested in this higher-level degree, then take a look at the following course pages:</p> <p>MEng (Hons) Mechanical Engineering (Advanced Manufacture) MEng (Hons) Mechanical Engineering (Building Services) MEng (Hons) Mechanical Engineering (Systems)</p>
--	---	--

Module information

- Please note that the list of optional modules and their availability may be subject to change. We continually review and where appropriate, revise the range of modules on offer to reflect changes in the subject and ensure the best student experience. Modules will vary when studied in combination with another subject.

Core year 1

	Professional Practical Engineering (with	
--	--	--

	<p>Mechatronics Project) Core module - (40 Credits)</p> <p>In this module, you'll learn about applying mechanical related engineering, engineering evaluation, concept generation, design, prototype and testing to a real problem (typically sourced from industry).</p>	
	<p>Mathematics, Computing and Physics for Mechanical Engineers Core module - (20 Credits)</p> <p>You'll develop your confidence in applying the fundamental science (laws of physics), mathematics, statistics principles and computing skills in engineering contexts.</p>	<p>Mathematics and Computing for Engineers Core module - (20 Credits)</p> <p>Mathematics, Computing and Physics for Mechanical Engineers has been updated to the Mathematics and Computing for Engineers. The Physics content has been added to the Introduction to Electro-Mechanical Systems and Practice module. These changes will balance the content in the modules and enhance your learning experience. Mathematics and Computing for Engineers module will focus on developing your confidence in applying mathematics and statistics principles, and computing skills in context to engineering, ensuring you have the mathematical and digital skills for your engineering ambitions.</p>
	<p>Introduction to Engineering Design Core module - (20 Credits)</p> <p>You will learn through practical experience of creating and translating engineering drawings. You will practice by hand and on a computer in a group design project, developing similar habits and minds as commercial engineers.</p>	
	<p>Introduction to Elec/Mechanical Systems and Practice Core module - (20 Credits)</p> <p>You will gain experience of electronic, electrical and mechanical principles, methods and practice used in commercial engineering components. You will also develop engineering practical workshop skills to manufacture and fabricate engineering products.</p>	<p>Introduction to Electro-Mechanical Systems and Practice Core module - (20 Credits)</p> <p>Introduction to Elec/Mechanical Systems and Practice has been updated to the Introduction to Electro-Mechanical Systems and Practice. You will gain the opportunity to learn the fundamentals of laws of physics,</p>

		electronic, electrical and mechanical principles, methods and practice used in commercial engineering components. You will also develop engineering practical workshop skills to manufacture and fabricate engineering products
	<p>Introduction to Material Engineering Characteristics & Manufacture Core module - (20 Credits)</p> <p>This module introduces you to materials used in engineering, specifically metals, plastics, ceramics and composites and material mechanical properties to enable you to select appropriate materials for future products or tasks.</p>	
Optional year 1		
	N/A	
Core year 2		
	<p>Engineering Product Lifecycle Core module - (40 Credits)</p> <p>You will gain experience of developing products in context to product life-cycle from raw materials to end of life, and take into consideration the wider social, environmental, commercial and financial issues and your role as an engineer.</p>	
	<p>Computer Aided Engineering and Design Core module - (20 Credits)</p> <p>You will learn Computer Aided Design (CAD) tools and design processes for designing, sizing and developing products and parts akin to a commercial engineer.</p>	
	<p>Dynamics of Solid Mechanics and Materials Core module - (20 Credits)</p> <p>You will strengthen your knowledge and understanding of materials, solid mechanics and dynamics applied to material selection.</p>	
	<p>Dynamics of Fluid and Thermal Systems Core module - (20 Credits)</p> <p>You will develop your knowledge and understanding of thermodynamics and fluid mechanics as applied to mechanical engineering type of applications, like district heating system.</p>	

	<p>Control, Instrumentation, and Communication Systems in an Industrial Environment Core module - (20 Credits)</p> <p>You will gain technology insights and applications of communication, control and instrumentation for an industrial environment, for example oven temperatures, automated pickers.</p>	
Optional year 2		
	N/A	
Core year 3		
	<p>Professional Mechanical Engineering Project Core module - (40 Credits)</p> <p>You will gain experience of working individually and as part of a team to design and develop a solution to a complex mechanical engineering problem giving you a real sense of the work an engineer in industry would do.</p>	
	<p>FEA for Mechanics and Materials Core module - (20 Credits)</p> <p>You will apply, critically analyse and interpret the fundamental principles of advanced stress analysis and computational mechanical dynamics finite element analysis of products to evaluate if products in principle are fit for purpose, prior to prototyping.</p>	
	<p>CFD for Thermal and Fluid Dynamic Modelling Core module - (20 Credits)</p> <p>You will learn to model and analyse industrial fluid flow and heat transfer systems like a biofuel plant.</p>	
	<p>Material and Mechanical Methods of Test Analysis Core module - (20 Credits)</p> <p>You will learn testing methods to determine and analyse mechanical and material behaviour, end of life, process limitation, diagnosis of material and mechanical failure.</p>	
	<p>Systems Design and Engineering Analysis Core module - (20 Credits)</p>	

	You will learn to design creative, considered, sustainable, ethical, economical, inclusive complex engineering components. For example, an emulsifier cream filling station for biodegradable tube packaging.	
Optional year 3		
	N/A	

How you'll learn

Teaching

You will be taught through a combination of lectures, seminars, tutorials, laboratory work and workshops.

Seminars and tutorials in smaller groups will enable you to discuss and develop your understanding of topics covered in lectures. In addition, you will meet with your academic personal tutor and will spend a significant amount of time gaining hands-on experience in the computing and engineering laboratories.

In each academic year you will complete a team CDIO project (typically sourced from industry) in a 40 credit module. These large group projects provide you with the opportunity to reflect on your knowledge and understanding in context to a real-world scenario and develop your confidence in your mechanical and product engineering understanding and knowledge.

Additional drop-in academic and peer learning mentoring sessions will be typically timetabled and you will be encouraged to make use of and support these sessions to develop your learning.

We will also nurture your transferable skills so you can:

- work effectively in diverse and inclusive groups
- communicate effectively in groups and one-to-one
- apply project management to group-work
- apply principles of commercial management and solutions considerations
- develop effective communication with professionals from other disciplines, especially clinicians
- contribute to industry through your solutions

The course learning is adhering to [World Health Organisation \(WHO\)](#) and [UK GOV Coronavirus guidance](#) to ensure a safe learning and working environment during COVID19 endemic. The course will consist of blend of on and off campus practical learning in engineering and science laboratories and off-campus on-line theoretical and practical learning. The off-campus hands on practical learning are being designed to use resources provided or common household items so we can support your learning in your home. The on and off campus and on-line practical learning are being designed to help you develop practical skills, also an enquiring mind and demonstrating your technical skills and creativity.

On-line learning will be provided by virtual learning environment Blackboard and appropriate specialist software tools that support certain module areas, for example computer aided design using Fusion 360

Each module will have face to face on campus learning and off campus on-line learning. The contact time per module is typically a blend of lectures, laboratories and tutorials:

Year 1 60hrs

Year 2 50hrs

Year 3 40hrs

Typical contact time per week:

Year 1 15hrs

Year 2 12.5hrs

Year 3 10hrs

Additionally, in each academic year you will complete a team CDIO project (typically sourced from industry) in a 40-credit module. These large group

	<ul style="list-style-type: none"> • provide tangible results for your portfolio of evidence for future employment. <p>All courses are informed by the University's Learning and Teaching Strategy 2015-2022.</p>	<p>projects provide you with the opportunity to reflect upon your knowledge and understanding in context to a real-world scenario and develop your confidence in your mechanical and product engineering understanding and knowledge. We will also facilitate your learning to be able to:</p> <ul style="list-style-type: none"> Work effectively and supportively in diverse and inclusive groups Communicate effectively in groups and one-to-ones Apply project management to group-work Apply principles of commercial management and solutions considerations Develop effective communication with professionals from other disciplines, especially clinicians Contribute to industry through your solutions Provide tangible results for your portfolio of evidence for future employment. <p>All programmes are informed by the University's Learning and Teaching Strategy 2015-2022.</p>
--	--	---

<p>Independent study</p>	<p>When not attending lectures, seminars, tutorials, workshops or other timetabled sessions you will continue learning through self-study. Typically, this involves reading books and articles from academic journals, undertaking research in the library, and preparing for coursework assignments/examinations and seminars.</p> <p>Your module tutor will direct you towards specific readings and/or activities to complete before class.</p>	<p>When not attending lectures, seminars, tutorials, workshops or other timetabled sessions you will continue learning through self-study. Typically, this involves reading books and articles from academic journals, undertaking research in the library, and preparing for coursework assignments/examinations and seminars.</p> <p>Your module tutor will direct you towards specific readings and/or activities to complete before class.</p> <p>Additional drop-in academic and peer learning mentoring online sessions with your personal academic tutor will be typically provided and you will be encouraged to make use of and support these sessions, to develop your learning. They are also an opportunity to apply your learning on new unfamiliar problems with the academics. As at other institutions these sessions have supported students to progress in their studies and provided valuable evidence for employment.</p>
<p>Overall workload</p>	<p>Each 20 credit module requires 200 hours of input over the academic year. This includes class contact time in lectures, tutorials, workshops, laboratory work, module preparation, module learning contextualisation, assessment research, development and submission, and examination revision.</p> <p>The contact time per module is typically a blend of lectures, laboratories and tutorials and equates to:</p> <ul style="list-style-type: none"> • Year 1 60 hours • Year 2 50 hours • Year 3 40 hours 	<p>Each 20 credits of a course of study, requires 200 hours of input over the academic year. This includes class timetabled contact time on and off campus and on-line; lectures, tutorials, workshops and laboratories. Also includes yourself study time; module preparation, module learning contextualisation, assessment research, development and submission of assessments, and examination revision.</p>

	<p>Typical contact time per week:</p> <ul style="list-style-type: none">• Year 1 15 hours• Year 2 12.5 hours• Year 3 10 hours	
--	---	--

Academic input	<p>The modules are led by our engineering academic team consisting of lecturers, senior lecturers and principal lecturers. Laboratory learning is further supported by senior and junior technicians and postgraduate demonstrators.</p>	
How you'll be assessed		
Years 1-3	<p>All academic years consist of a mix of modules that are assessed by coursework only, to modules that are assessed by examination and coursework. Examinations may be open-book or closed book exams. Coursework may include, Engineering log book, Technical drawings, Wiki pages, blogs, pitches to industry, posters, leaflets, engineering manual, etc.</p> <p>Years 1-3 (Levels 4-6) consist of 4 modules that are 20 credits each and 1 module that is 40 credits.</p> <p>In the modules and module assessment you will need to demonstrate:</p> <p>Knowledge and understanding of engineering science and principles engineering at Level 4; Application of knowledge and understanding of Mechanical Engineering at Level 5; Critical analysis of application of knowledge and understanding of Mechanical Engineering at Level 6.</p> <p>The 40 credit modules will provide you with the opportunity to work on a substantial group CDIO (Create, Design, Implement and Operate) project typically sourced from industry. These projects will provide you with the opportunity to build your technical skills, as well as your professional practice skills. The pioneering CDIO approach is being designed to enable you to develop your creative skills to find solutions based on engineering science, principles and provide practical benefits to end users, and manufacturers.</p> <p>The Level 6 Professional Mechanical Engineering Project 40 credits module will entail group and individual project. The overall group project will be typically</p>	<p>In addition to previous information Examinations maybe open-book, closed book style exam, on-line, or 24hr take home exam.</p>

	<p>sourced from industry, and will require several individual projects to support a solution to the overall group project. Each individual project will entail dissertation assessment. Each group will be led and managed by a Level 7 MEng student studying the Professional Engineering Project and Management module. Each Level 7 student will research, develop, apply and test through the development of their own evaluation methods to critically analyse a more complex problem that contributes to the Level 6 Professional Engineering group. Each Level 6 and 7 individual projects within the group project will entail a dissertation.</p> <p>Level 7 students will be responsible to lead and manage integration of all the project solutions to provide an integrated system, and verifying and validation that the solutions are timely, cost effective and are the desired quality, in addition to meeting IS standards, current and anticipated future regulations and public policy, ethical considerations, patents, health and safety.</p>	
Fees		
UK/EU	Full-time £9,250	
	Part-time N/A	
Overseas	Full-time £13,000	
	Part-time N/A	
UK/EU with placement Year	Full-time £1,850	
	Part-time N/A	
Overseas with placement Year	Full-time N/A	
	Part-time N/A	

Course specific costs		
Travel	<p>Additional costs include travel to and from Canterbury to Kent Science Park, Sittingbourne or Discovery Park, Maidstone or CCCU Medway campus as when required for learning.</p> <p>Also possible opportunities to visit Industrial facilities on the Isle of Sheppey, Medway, Maidstone, Ashford and Discovery Park, Maidstone and partner institutions in Europe.</p>	<p>There may be optional travel to off site locations and field trips will arranged in line with World Health Organisation (WHO) and UK GOV Coronavirus guidance This is to ensure a safe learning and working environment for all parties.</p> <p>Additional costs include travel to and from Canterbury to Kent Science Park, Sittingbourne or Discovery Park, Maidstone or CCCU Medway campus as when required for learning.</p> <p>Also possible opportunities to visit Industrial facilities online on the Isle of Sheppey, Medway, Maidstone, Ashford and Discovery Park, Maidstone and partner institutions in Europe.</p>
Professional accreditation	<p>The courses have been developed and designed to meet the professional accreditation requirements. At present these courses do not have professional accreditation. We are working towards professional accreditation of our engineering courses. Accredited courses are delivered to a UK recognised standard. We are consulting the accrediting bodies, such as IChemE, BCS, IMechE, in designing our courses. This is to keep us on track for accreditation. We hope to receive accreditation by 2022. If we receive accreditation, it will apply to these courses.</p>	
Industry links	<p>This degree has been co-designed with engineering professionals and input from manufacturing, small and medium Enterprise (SME) employers of engineers, power generation, and building services/construction industries, who recruit and employ mechanical engineers. This helps to ensure that our mechanical engineering graduates meet employer needs and expectations in terms of the technical and employability skills relevant for these industries.</p>	
Other important information		

<p>Progression to Integrated Masters</p>	<p>The difference in learning between MEng and BEng degrees in accordance to the accrediting engineering council, AHEP 3.0, is that:</p> <p>On an MEng degree you will need to demonstrate leadership, management, tackling complex problems, innovation and critical analysis in the application of your knowledge and understanding of engineering.</p> <p>On a BEng degree you will need to demonstrate critical analysis in the application of your knowledge and understanding of engineering.</p> <p>Please note: progression from BEng to the MEng is an optional possibility at the end of Year 2 (Level 5) if you meet the Integrated Master's Framework criteria for progression to the Integrated Masters programme.</p> <p>In addition, MEng Mechanical Engineering students, need to meet Integrated Master's Framework criteria for continued progression on an Integrated Masters in order to remain on the MEng after Level 5 (Year 2).</p>	
<p>Specialist facilities</p>	<p>In 2020, we will open a major new facility for science, engineering, health and medicine, part of our £150m vision to transform our Canterbury Campus. The new building will be the main base for our Kent and Medway Engineering, Design, Growth and Enterprise (EDGE) Hub, with specialist centres across the region located alongside Engineering and Technology businesses. Our main campus in Canterbury has city centre facilities on its doorstep and, of course, you will benefit from all the new building has to offer.</p>	
<p>Date of publishing</p>	<p>29/06/2020</p>	