

## 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	Biomedical Engineering (MEng)	
Award level	MEng – Single honours	
How do you want to study?		
Start Date	Sept 2020	
Modes of study	Full-time	
Duration	4 years full-time	
UCAS code	H105	
Location	Canterbury	
Partner institution	N/A	
Available with a Foundation Year	Yes	
Overview		
	<p>Biomedical engineers are responsible for developing engineering solutions to help solve medical problems.</p> <p>Our degree will enable you to be part of exciting product developments including robots to help the disabled walk, advanced prosthetics, machines for complex treatments, diagnostic equipment and artificial organs. You can also get involved in smart technologies and applying them to transmit data directly to clinics, minimising the need for patient travel.</p> <p>Biomedical engineering is a dynamic and exciting area of growth and innovation, and one which will develop rapidly in the coming years.</p>	
Why study Biomedical Engineering?		
	<p>Biomedical engineers design and deliver engineering solutions to biomedical problems and contribute to improving our health and saving lives. Biomedical engineers are responsible for developing robots used in surgery, advanced prosthetics, machines for treating patients such as kidney dialysis, diagnostic equipment such as hospital NMR machines</p>	<p>Biomedical engineers design and deliver engineering solutions to biomedical problems and contribute to improving our health and saving lives. Biomedical engineers are responsible for developing robots used in surgery, advanced prosthetics, machines for treating patients such as kidney dialysis, diagnostic equipment such as</p>

	<p>and artificial organs to name a few.</p> <p>This innovative course has been designed in collaboration with industry and a research medical clinician. You will have the excellent opportunity to work with a range of employers. We offer a truly immersive learning opportunity where the applied elements of the course are delivered in professional standard environments. This course enables you to develop your science and maths knowledge to pursue your biomedical engineering degree and provides professional biomedical engineering practice and the opportunity to build professional networks with industry.</p> <p>We are one of only a handful of universities to offer the pioneering CDIO international engineering education model, developed by the world-renowned Massachusetts Institute of Technology (MIT). CDIO gives you a rich hands-on experience that you can deploy to develop technology to provide biomedical engineering solutions. You could find solutions to urgent issues in health, patient treatment or development of products required by medical teams and much more.</p>	<p>hospital NMR machines and artificial organs to name a few.</p> <p><b>The course learning is adhering to <a href="#">World Health Organisation (WHO)</a> and <a href="#">UK GOV Coronavirus guidance</a> to ensure a safe learning and working environment during COVID19 endemic.</b> 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. <b>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.</b></p> <p><b>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</b></p> <p><b>Read Less</b></p> <p><b>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 timetabled sessions.</b></p>
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	<p>You'll also develop leadership and management skills that will support you with pursuing a senior engineering role.</p> <p>This innovative course has been designed in collaboration with industry and a research medical clinician. You will have the excellent opportunity to work with a range of employers. We offer a truly immersive learning opportunity where the applied elements of the course are delivered in professional standard environments. This course enables you to develop your science and maths knowledge to pursue your biomedical engineering degree and provides professional biomedical engineering practice and the opportunity to build professional networks with industry.</p> <p>We are one of only a handful of universities to offer the pioneering CDIO international engineering education model, developed by the world-renowned Massachusetts Institute of Technology (MIT). CDIO gives you a rich hands-on experience that you can deploy to develop technology to provide biomedical engineering solutions. You could find solutions to urgent issues in health, patient treatment or development of products required by medical teams and much more.</p>
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Entry requirements	<p>MEng 112-120 UCAS points (including A level or equivalent in Maths, Physics, Applied Science or Engineering)</p> <p><b>Further entry requirements</b></p> <p>5 GCSEs grade C/4 or above (including Maths, English, Science)</p> <p>Science can be Physics, Chemistry, Biology or Computer Science.</p> <p>You will need to maintain 50% or more in each module during the first three years of undergraduate study to remain on/progress onto this course. Please note any module failure at Level 7 will result in being awarded the BEng Mechanical Engineering.</p> <p>This course is also available as a BEng or a BEng with Foundation Year.</p> <p><a href="#">More information about entry requirements.</a></p>	
<b>About the course</b>		
Years 1-3	<p>The three-year BEng (Hons) will unlock your full potential as a creative problem solver. Our hands-on, practical problem-solving approach makes up 40-60% of each year of study so you can be a confident, work-ready engineer by the time you graduate. On completion of the BEng, you will be on track to become an Incorporated Engineer (IEng).</p> <p>The four-year MEng course will advance your engineering talent even further and develop your leadership and management skills. On completion of the MEng you will be on track to become a Chartered Engineer (CEng).</p> <p>We are one of only a handful of universities in the UK to offer the CDIO international engineering education model, developed by MIT - Massachusetts Institute of Technology, which allows you to learn in a practical, hands-on way to find solutions to industry related engineering challenges.</p> <p>This course equips you to be a practising professional graduate Biomedical Engineer. Biomedical engineering is a key area for growth in south-east England which presents exciting opportunities for</p>	<p>The three-year BEng (Hons) will unlock your full potential as a creative problem solver. Our hands-on learning from on- and off campus and on-line learning will develop your practical problem-solving approach makes up 40-60% of each year of study so you can be a confident, work-ready engineer by the time you graduate. On completion of the BEng, you will be on track to become an Incorporated Engineer (IEng), subject to the course receiving accreditation.</p> <p>The four-year MEng course will advance your engineering talent even further and develop your leadership and management skills. On completion of the MEng you will be on track to become a Chartered Engineer (CEng), subject to the course receiving accreditation.</p> <p>We are one of only a handful of universities in the UK to offer the CDIO international engineering education model, developed by MIT - Massachusetts Institute of Technology, which allows you to learn in a practical,</p>

	<p>graduates. You will be able to apply and develop technology to provide biomedical engineering solutions for the healthcare industry.</p> <p>On the course you will be supported to develop your employability skills and job application skills to apply for placement opportunities. Placement opportunities in engineering often lead to opening doors to great potential engineering graduate employment opportunities with companies such as Burton Medical, Braun, Fielder Filter Systems, TwistDX, Futurenova, BMM Weston and many more.</p>	<p>hands-on way to find solutions to industry related engineering challenges.</p> <p>This course equips you to be a practising professional graduate Biomedical Engineer. Biomedical engineering is a key area for growth in south-east England which presents exciting opportunities for graduates. You will be able to apply and develop technology to provide biomedical engineering solutions for the healthcare industry.</p>
		<p>On the course you will be supported to develop your employability skills and job application skills to apply for placement opportunities. Placement opportunities in engineering often lead to opening doors to great potential engineering graduate employment opportunities with companies such as Burton Medical, Braun, Fielder Filter Systems, TwistDX, Futurenova, BMM Weston and many more.</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

	<p>Professional Practical Engineering (with Mechatronics Project) Core module - (40 Credits)</p> <p>This module will introduce you to mechanical related engineering, engineering evaluation, concept generation, design, prototype and testing a real problem. Engineering challenges are typically sourced from industry and therefore means you'll be contributing to local industry.</p>	
	<p>Mathematics, Computing and Physics for Mechanical Engineers Core module - (20 Credits)</p> <p>On this module you will develop your confidence in applying the fundamental science (laws of physics), mathematics and</p>	<p>Mathematics and Computing for Engineers Core module - (20 Credits)</p> <p>In the first year of level study, Mathematics, Computing and Physics</p>

	<p>statistics principles, and computing skills in context to engineering, ensuring you have the mathematical and digital skills for your engineering ambitions.</p>	<p>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><b>Introduction to Engineering Design</b> Core module - (20 Credits)</p> <p>In a group design project, you will learn to create and translate engineering drawings by hand and on a computer. This practical experience will help you develop similar habits and minds as commercial engineers.</p>	
	<p><b>Introduction to Elec/Mechanical Systems and Practice</b> Core module - (20 Credits)</p> <p>You will experience 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><b>Introduction to Electro-Mechanical Systems and Practice</b> Core module - (20 Credits)</p> <p>In the first year of level study, 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, 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><b>Introduction to Material Engineering Characteristics &amp; Manufacture</b> Core module - (20 Credits)</p> <p>This module introduces you to materials</p>	

	<p>used in engineering, specifically metals, plastics, ceramics, composites and material mechanical properties. This will support you in the future to be able to select appropriate materials for specific products or tasks.</p>	
<b>Optional year 1</b>		
	<p><b>Placement Module</b></p> <p>You will have the option to do a placement module at any time in your degree. The placement module is designed to permit different modes of placement, from day-release, vacations, and year-long.</p>	
<b>Core year 2</b>		
	<p><b>Engineering Product Lifecycle</b> 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, taking into consideration the wider social, environmental, commercial and financial issues and your role as an engineer.</p>	
	<p><b>Computer Aided Engineering and Design</b> Core module - (20 Credits)</p> <p>During this module 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><b>Dynamics of Solid Mechanics and Materials</b> Core module - (20 Credits)</p> <p>You will strengthen your knowledge and understanding of materials, solid mechanics and dynamics that are applied by engineers when making material selections.</p>	
	<p><b>Biological Medical Science</b> Core module - (20 Credits)</p> <p>You will learn about human physiology and anatomy and take a systems approach to the human body.</p>	
	<p><b>Control Instrumentation and Communications Systems for Biomedical and Biomechanical Application</b> Core module - (20 Credits)</p> <p>You will gain technology insights and learn</p>	

	<p>about the applications of engineering sensors and control to medicine in the diagnosis and treatment of human conditions.</p>	
Optional year 2		
	<p><b>Placement Module</b></p> <p>You will have the option to do a placement module at any time in your degree. The placement module is designed to permit different modes of placement, from day-release, vacations, and year-long.</p>	
Core year 3		
	<p><b>Professional Biomedical Engineering Project</b> 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 biomedical engineering problem. This will simulate the work of an engineer in industry.</p>	
	<p><b>FEA for Mechanics and Materials</b> Core module - (20 Credits)</p> <p>In this module you will apply, critically analyse and interpret the fundamental principles of advanced stress analysis and further product analysis methods to evaluate if products in principle are fit for purpose, prior to prototyping.</p>	
	<p><b>Design for Rapid Prototyping, Pattern, Moulding and Tooling</b> Core module - (20 Credits)</p> <p>You will gain knowledge and experience of applying rapid prototyping methods, critically analysing and considering its importance in terms of manufacture and design.</p>	
	<p><b>Design for Medical Applications</b> Core module - (20 Credits)</p> <p>You will learn how to design, create and consider medical science and human users' constraints when designing solutions for a breadth of medical devices.</p>	
	<p><b>Industry 4.0 for Manufacture</b> Core module - (20 Credits)</p>	

	You will investigate and critical analyse Industry 4.0 technology and solutions for the manufacturing industry.	
<b>Optional year 3</b>		
	<b>Placement Module</b>  You will have the option to do a placement module at any time in your degree. The placement module is designed to permit different modes of placement, from day-release, vacations, and year-long.	
<b>Core year 4</b>		
	<b>Professional Engineering Project and Management</b> Core module - (60 Credits)  During this module you will gain experience of leading a team and working individually on a team project. You will research and develop an innovative solution to a complex product, working in the way an industrial engineer would work.	
	<b>Advance Materials for Medicine</b> Core module - (20 Credits)  On this module you will explore appropriate materials and manufacturing processes in the medical device industry.	
	<b>Additive Manufacturing Processes and Materials</b> Core module - (20 Credits)  In more depth, you will critically evaluate the advances and innovations of materials and manufacturing techniques.	
	<b>Biomedical Quality Management, Compliance and Processes</b> Core module - (20 Credits)  You will develop your leadership and criticality of quality processes and standards for biomedical applications.	
<b>Optional year 4</b>		
	<b>Placement Module</b>  You will have the option to do a placement module at any time in your degree. The placement module is designed to permit different modes of placement, from day-release, vacations, and year-long.	

How you'll learn	
Teaching	<p>The contact time per module is typically a blend of lectures, laboratories and tutorials:</p> <p>Year 1 60hrs      Year 2 50hrs      Year 3 40hrs      Year 4 (MEng) 40hrs</p> <p>Typical contact time per week:</p> <p>Year 1 15hrs      Year 2 12.5hrs      Year 3 10hrs      Year 4 (MEng) 10hrs</p> <p>Additionally, 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 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> <p>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> <p>All programmes are informed by the University's Learning and Teaching Strategy 2015-2022.</p> <p><b>The course learning is adhering to <a href="#">World Health Organisation (WHO)</a> and <a href="#">UK GOV Coronavirus guidance</a> 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.</b></p> <p><b>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</b></p> <p><b>Each module will have face to face on campus learning and off campus on-line learning.</b> The contact time per module is typically a blend of lectures, laboratories and tutorials:</p> <p>Year 1 60hrs      Year 2 50hrs      Year 3 40hrs      Year 4 (MEng) 40hrs</p> <p>Typical contact time per week:</p> <p>Year 1 15hrs      Year 2 12.5hrs      Year 3 10hrs      Year 4 (MEng) 10hrs</p> <p>Additionally, in each academic year you will complete a team CDIO project (typically sourced from industry) in a</p>

	<p>40-credit module. These large group 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> <p>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> <p>All programmes are informed by the University's Learning and Teaching Strategy 2015-2022.</p>
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Independent learning	<p>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. 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>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>
Overall workload	<p>Each 20 credits of a course of study, 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>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>
Academic input	<p>The modules are led by our engineering academic team consisting of lecturers, senior lecturers, principal lecturers, and laboratory learning will be further supported by Senior and Junior technicians</p>	

	and Postgraduate demonstrators.	
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How you'll be assessed		
Years 1-3	<p>Each academic year consists 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) each consist of 4 modules that are 20 credits each and 1 module that is 40 credits.</p> <p>The 40 credits modules will provide you with the opportunity to work on a substantial group CDIO 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 clinicians, patients and allied health professionals and patient carers. Could your group develop the mechanical spinal support prototype to be the next generational aid in supporting patients with scoliosis?</p> <p>The Level 6 Professional Engineering Biomedical Project module will entail group and individual project work. The overall group project will be typically sourced from industry, and will require several individual projects to support a solution to the overall group project. Each individual project will entail a dissertation assessment. Each group will be led and managed by a Level 7 MEng student, providing peer and cross-fertilisation of learning.</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</p>	<p><b>In addition to previous information</b>  <b>Examinations maybe open-book, closed book style exam, on-line, or 24hr take home exam.</b></p>

	standards, current and anticipated future regulations and public policy, ethical considerations, patents, health and safety.	
<b>Fees</b>		
UK/EU	Full-time £9,250	
	Full-time (placement year) £1,850	
Overseas	Full-time £13,000	
	Part-time N/A	
<b>Course specific costs</b>		
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><b>There may be optional travel to off site locations and field trips will be arranged in line with <a href="#">World Health Organisation (WHO)</a> and <a href="#">UK GOV Coronavirus guidance</a></b> 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 on-line on the Isle of Sheppey, Medway, Maidstone, Ashford and Discovery Park, Maidstone and partner institutions in Europe.</p>
Professional accreditation	N/A	
Industry links	N/A	
<b>Other important information</b>		
Date of publishing	29/06/2020	