

Programme Specification						
<input type="button" value="Save"/>		<input type="button" value="Show Guidance"/>				
<b>General Information</b>						
<b>Title</b>	<input type="text" value="MEng Chemical Engineering"/>					
<b>Awarding Institution</b>	<input type="text" value="University of Bath"/>					
<b>Teaching Institution</b>	<input type="text" value="University of Bath"/>					
<b>Programme Accredited by</b>	<input type="text" value="Institution of Chemical Engineers (IChemE) (July 2016)"/>					
<b>Collaborative Provision Type</b>	<input type="text" value="Not Applicable"/>					
<b>Placement Available?</b>	<input type="text" value="Yes"/>					
<b>Study Abroad Available?</b>	<input type="text" value="No"/>					
<b>Subject Benchmark Statement(s)</b>	Engineering: <a href="http://www.qaa.ac.uk/en/Publications/Documents/Subject-benchmark-statement-Engineering-.pdf">http://www.qaa.ac.uk/en/Publications/Documents/Subject-benchmark-statement-Engineering-.pdf</a> <a href="#">Click here to see 'QAA List'</a>					
<b>Programme Approved by</b>	<input type="text" value="August 2003"/>					
Aims	Learning Outcomes	Assessment	Placement/Prof Acc	Admissions/Support	Show All	Close
<b>Aims; "What is the purpose of this programme of study? What is the programme intended to achieve?"</b>						
<b>Synopsis and Coherence</b>	<p>The first two years are designed to give students a thorough grounding in the principles and practices of chemical engineering as well as in the topics which underpin professional chemical engineering, ranging from the pure sciences through to information technology, communication, laboratory and design skills. There is a first-year design project in Semester 2 which introduces students to this key chemical engineering activity at an early stage and reinforces the concepts introduced in the 12-credit Chemical Engineering Principles Unit (CE10167). Additional foreign language units may be taken in these first two years of study, although marks from these are not included in year marks. The third and fourth academic years apply and develop skills and knowledge learned in the first two years of academic study, and introduce advanced chemical and biochemical engineering topics at both breadth and depth.</p> <p>A major activity in the third year is the research project which may be carried out at Bath, at a university abroad, or in industry. Alternatively, MEng students who prefer to gain research experience overseas or in industry may carry out their research projects at appropriate external institutions.</p> <p>Key activities in the final year include the product and process design project in Semester 2. The final year also includes an option in Semester 1, so that students may develop their own interests in different academic areas.</p> <p>The MEng final process design projects incorporate elements of both individual and group work. This MEng programme in Chemical Engineering (UECE-AFM05) is mainly distinguished from the equivalent MEng programme in Biochemical Engineering (UECE-AFM01) in that the third year research and final year process design projects are normally carried out in the areas of chemical engineering. There may also be a difference in relation to a placement in terms of the industry that you work in, and there are options in the final years of the programme to provide further specialisation.</p> <p>For students taking the five-year thick sandwich programme, the year of industrial placement is taken immediately before the final year which builds on skills and knowledge acquired in the first three years of academic study, as well as on knowledge and skills gained whilst on placement.</p>					
<b>Educational Aims of the Programme</b>						

The broad aim is to enable and inspire graduates to pursue professional careers, nationally or internationally, mainly in industry but also in commerce or academia. The specific aim is to provide the breadth and depth of education in Chemical Engineering, including its industrial practice, to allow graduates to work successfully in situations requiring sound judgement, personal responsibility and initiative, and decision making in complex and unpredictable circumstances.

Graduates should be able to:

1. Formulate and solve technical, economic and managerial problems applicable to the full range of processing industries;
2. Appreciate advanced material and some of the research in the department, and understand its role in developing the discipline;
3. Operate small and pilot-scale equipment and use it to acquire essential data;
4. Understand process design and use integrated approaches to solve complex, often open-ended process design problems;
5. Judge the criteria for successful industrial strategies;
6. Demonstrate both a broad and deep knowledge of some internationally significant aspects of advanced chemical and biochemical engineering, achieved mainly through undertaking advanced project work and specialised third and final year units;
7. Demonstrate achievement of a specialised knowledge, particularly via project work, of process engineering which is founded on the chemical and physical sciences.

Additionally, for students on the five-year thick sandwich programme:

8. Demonstrate a knowledge of industrial practice by means of a one-year placement which normally qualifies as part of the training and experience requirements for Corporate Membership of the Institution of Chemical Engineers (MIChemE) and Chartered Engineer (CEng) status.

The following methods cover the following four areas. Teaching and learning is mainly through lectures, tutorials, students' private study, laboratory work, and design projects. Plant visits and specialist external and internal speakers also contribute to teaching and learning. The main ways of assessment are written and oral examinations, coursework, poster presentations, as well as laboratory and project reports, including the reports on industrial placement (for placement students).

**Learning Outcomes; including teaching, learning and assessment methods, specifying those applicable for interim awards where appropriate. Indicate what successful students should be able to do, how well they should be able to do it and the context or conditions in which they should be able to do it. See also [FHEQ](#) and [SEEC](#) guidance.**

**Knowledge and Understanding**

Students will demonstrate:

- systematic and detailed understanding of chemical, biochemical and physical science, ranging from the well-established principles to new techniques, many of which are informed by the current boundaries of the discipline;
- detailed knowledge of a number of the practical technologies currently used in Chemical Engineering;
- critical understanding of the uncertainty, ambiguity and limits of their knowledge, and how these may affect analyses of, and solutions to, engineering problems;
- awareness of the commercial and financial constraints that engineers may have to work under.

Teaching and learning is through lectures, tutorials, students' own reading, practical exercises, laboratory work and design exercises.

Assessment is by a combination of written examination, written course work and oral presentation.

**Intellectual Skills**

Students will demonstrate an:

- ability to apply the concepts and principles of chemical and biochemical engineering science to the solution of engineering problems in both familiar and in complex and unpredictable professional environments;
- ability to critically evaluate information in the form of arguments, assumptions and/or technical data (that may or may not be complete) in order to be able to produce solutions to problems in Chemical Engineering that may be either of a routine nature or require the development of new techniques.

Teaching and learning is through lectures, tutorials, students' own reading, practical exercises, laboratory work and design exercises.

Assessment is by a combination of written examination, written course work and oral presentation.

**Professional Practice Skills**

	<p>Students will be able to:</p> <ul style="list-style-type: none"> <li>• employ a range of established and new techniques to review and analyse information concerning engineering problems, and to propose and implement solutions in a professional manner;</li> <li>• deal with complex engineering issues, both systematically and creatively, make sound judgements in the absence of complete data, and communicate their conclusions clearly to both specialist and non-specialist audiences;</li> <li>• undertake further continuing professional development and the development of new and advanced skills that will enable them to assume a high level of responsibility within an engineering organisation.</li> </ul> <p>Teaching and learning is through lectures, tutorials, students' own reading, practical exercises, laboratory work and design exercises.</p> <p>Assessment is by a combination of written examination, written course work and oral presentation</p>
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<p><b>Transferable/Key Skills</b></p>	<p>Students will demonstrate:</p> <ul style="list-style-type: none"> <li>• an ability to use IT to collect, analyse and present technical information;</li> <li>• an ability to use appropriate professional simulation and design tools;</li> <li>• the exercise of initiative and personal responsibility;</li> <li>• an ability to effectively present technical information in both written and spoken form;</li> <li>• independent learning ability required for continuing professional development;</li> <li>• how to plan and execute a project;</li> <li>• an ability to work in a team.</li> </ul> <p>Teaching and learning is through lectures, tutorials, students' own reading, practical exercises, laboratory work and design exercises.</p> <p>Assessment is by a combination of written examination, written course work and oral presentation.</p>
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<p><b>Assessment Methods</b></p>	
<p><b>Summary of Assessment Regulations</b></p>	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>

<p><b>Progression Regulations and Awards</b></p> <p><i>For programmes fully compliant with NFA refer to the relevant appendices of the relevant NFAAR document (<a href="#">UG</a>, <a href="#">PGT</a>, <a href="#">FD</a>, <a href="#">HY</a>, or <a href="#">CPD</a>)</i></p> <p><i>Note any significant features relevant to the "Assessment in the programme context" sections of the relevant NFAAR document.</i></p> <p><i>Set out any approved exemptions from NFA.</i></p> <p><i>Set out progression and assessment regulations where these do not comply with <a href="#">NFA</a>.</i></p>	<p>Assessment is by: oral assessment; practical work; written examination; individual project work; group project work; and laboratory reports</p> <p>The rules for progression from one stage to another and grading of assessed work and examinations conform to the University's framework for assessment and assessment regulations (NFAAR), see <a href="http://www.bath.ac.uk/registry/nfa/nfaar-ug.pdf">http://www.bath.ac.uk/registry/nfa/nfaar-ug.pdf</a></p>
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Students leaving an undergraduate programme prematurely may be eligible for a [Certificate of Higher Education](#) or a [Diploma of Higher Education](#).

[Click here to see 'Indicators of Quality & Standards'](#)

<p><b>Placement and Professional Accreditation</b></p>	
<p><b>Details of Work Placements Requirements / Work Based Learning / Industrial Training Requirements</b></p>	<div style="border: 1px solid black; height: 200px;"></div>

	<p>All students are exposed throughout the degree programme to work-based and industrial aspects of chemical engineering. For example, they meet professional chemical engineers throughout their programme at Bath. In addition, as a result of staff interests, the design projects have an industrial context. Additionally, some units are devoted to the management aspects of the professional chemical engineering work environment.</p> <p>All institutions abroad or industrial sites where MEng students may carry out a research project in Semester 2 of the third year will be known to the Department or University. For the overseas research project there will be a formal student-exchange agreement which has been developed after confirming the suitability of the institution as a University partner. In addition, while language qualifications are not formally required, students will be expected to demonstrate that they will be able to communicate effectively in the language of the host country. The evaluation and approval of an industrial partner for an external research project will be carried out in the same way as for a placement. While the Director of Undergraduate Studies has overall responsibility for all external research projects, managers of the relevant units will be the first points of contact between the Department and the students while they are away.</p> <p>For students on the five-year thick sandwich programme, the principal work-based experience is the one-year industrial placement. This is organised by a Departmental Industrial Placement Officer and has run successfully for many years with a wide range of industrial partners. A member of academic staff normally meets with the student at least twice during the year, at least once at the placement site, to discuss progress. On return to the University, students are required to submit both a report (typically 5000 words) and a poster which are assessed by staff. Industrial supervisors are also required to submit reports on student performance on placement. Full credit for the industrial placement, which is recorded on transcripts, normally only follows after satisfactory completion of these requirements.</p>
<p><b>Details of Study Abroad Requirements</b></p>	
<p><b>Details of Professional Accreditation</b></p>	<p>A more detailed overview of the University's Quality Management framework is set out in this summary document: <a href="http://www.bath.ac.uk/quality/documents/approach-to-quality-management.pdf">http://www.bath.ac.uk/quality/documents/approach-to-quality-management.pdf</a></p> <p>The University's management of its academic standards and quality is subject to external institutional review by the <a href="#">Quality Assurance Agency</a> on a six year cycle. In its 2013 Institutional Review, the QAA confirmed that the University met its expectations for the management of standards, the quality of learning opportunities, the enhancement of learning opportunities. The University was commended on its provision of information.</p> <p>Professional bodies (such as the Institution of Chemical Engineers (IChemE)) require particular standards and content in our programmes so that students exit able to claim professional registration or recognition, enabling them to progress successfully in their subsequent careers. Current professional accreditations are reviewed periodically by the bodies concerned. They are shown against each relevant programme in the prospectus. The full list can be seen here: <a href="#">QA&amp; RegisterofAccreditationsCurrent.pdf</a>.</p> <p>The MEng (Hons) degree in Chemical Engineering was last accredited by the Institution of Chemical Engineers (IChemE) in July 2016. The accreditation was for the maximum period of five years. The Department will request the IChemE to re-accredit the degree programme in Academic Year 2020/21. The Department therefore reserves the right to propose changes to the curriculum and syllabus from time to time, in line with both the University's quality assurance procedures and the IChemE's current guidelines on accreditation.</p>
<p><b>Admissions and Support</b></p>	
<p><b>Admissions Criteria including APL/APEL arrangements</b></p> <p><i>Only refer to APL, APEL or direct entry with advanced standing if regular use is likely to be made or is not possible.</i></p>	<p>Admissions criteria can be found by following the link below:  <a href="http://www.bath.ac.uk/study/ug/prospectus/subject/chemical-biochemical-engineering/entry-requirements/">http://www.bath.ac.uk/study/ug/prospectus/subject/chemical-biochemical-engineering/entry-requirements/</a></p> <p>Admissions criteria may change from year to year. Subjects must include Chemistry and Mathematics but not General Studies or Mother Language.</p>
<p><b>Details of Support Available to Students</b></p> <p>[link to Ac Reg quality page]</p>	

	<p>University of Bath students attending programmes of study at the Claverton Campus are usually encouraged to stay in University halls of residence during their first year and will be supported in their transition into University life and study by Resident Tutors. These are postgraduate students or staff who live in the halls of residence and are responsible for the general welfare, health and safety and discipline of student residents.</p> <p>All taught students will be allocated a Personal Tutor and postgraduate research students a supervisor who are responsible for monitoring and supporting the academic progress and general welfare of their students.</p> <p>Staff in these roles will be able to respond to many of the questions and concerns raised by their students. However, there is also a range of specialist student support services that will offer both information and advice to support these staff working with their students, as well as take referrals to work more directly with the students. Students can also self-refer to these services.</p> <p>These services can provide information, advice and support in relation to accommodation, emotional difficulties, assessment of needs and provision of support relating to disability, student funding, general welfare, academic problems, student discipline and complaints, careers, international students, spiritual matters, part time work, security and personal safety. The Students' Union can also provide advocacy for students. More information about these services can be accessed via: <a href="http://www.bath.ac.uk/students/support/">http://www.bath.ac.uk/students/support/</a>.</p> <p>There are also Medical and Dental Centres, and a Chaplaincy on campus that are very experienced in meeting the needs of a student population, as well as a University nursery and vacation play scheme to provide childcare for older children during the school holidays.</p>
<p><b>Department and Programme Specific Support Information</b></p> <p><i>e.g. induction programmes, any peer mentoring schemes, regular department events</i></p>	<p>Further information about the Department of Chemical Engineering and undergraduate study is available at: <a href="http://www.bath.ac.uk/chem-eng/">http://www.bath.ac.uk/chem-eng/</a></p>

Unit	Unit Title	Credits	Period	Part	Stage	DEU	SRU	TSC or DPC	Placement Status
<b>Year of Study : 1 (8)</b>									
Unit Status : Compulsory Unit (8)									
CE10185	Chemical engineering skills & practice 1	12	All Year	1	1				
CE10224	Science for chemical engineering	12	All Year	1	1				
CE10167	Chemical engineering principles (conservation, transformation & separation)	12	All Year	1	1	Yes			
CE10079	Bioprocess engineering fundamentals	6	Semester 1	1	1				
MA10192	Mathematics 1	6	Semester 1	1	1				
CE10083	Transport phenomena 1	6	Semester 2	1	1				
CE10087	First year design project	3	Semester 2	1	1				
MA10193	Mathematics 2	3	Semester 2	1	1				
<b>Year of Study : 2 (9)</b>									
Unit Status : Compulsory Unit (9)									
CE20186	Chemical engineering skills & practice 2	9	All Year	2	2				
XX20196	Process dynamics, modelling and control	12	All Year	2	2				
CE20089	Transport phenomena 2	6	Semester 1	2	2				
CE20090	Engineering thermodynamics	6	Semester 1	2	2				
CE20091	Reaction engineering	6	Semester 1	2	2				
CE20093	Particle technology	3	Semester 2	2	2				
CE20094	Management 1	6	Semester 2	2	2				
CE20095	Separations processes 2	6	Semester 2	2	2				
CE20223	Design & safety	6	Semester 2	2	2				
<b>Year of Study : 3 (8)</b>									
Unit Status : CE3014 Optional Units: Select 30 credits from this list: (3)									
CE30122	MEng research project (home)	30	Semester 2	2	3				
CE30124	MEng research project (overseas)	30	Semester 2	2	3				
CE30125	MEng research project (industry)	30	Semester 2	2	3				
Unit Status : Compulsory Unit (5)									
CE30119	Transport phenomena 3	6	Semester 1	2	3				
CE30123	Intermediate design project	6	Semester 1	2	3				
CE30145	Environmental management	6	Semester 1	2	3				
CE40128	Management 2	6	Semester 1	2	3				
XX40175	Advanced mathematical modelling	6	Semester 1	2	3				

Unit	Unit Title	Credits	Period	Part	Stage	DEU	SRU	TSC or DPC	Placement Status
<b>Year of Study : 4 (9)</b>									
Unit Status : CE4004 Optional Units: Select 1 unit from this list: (4)									
CE40129	Legislation & waste management	6	Semester 1	3	4				
CE40130	Biomedical engineering	6	Semester 1	3	4				
CE40169	Molecular and cellular biochemical engineering	6	Semester 1	3	4				
ZZ00001	Director of Studies approved unit		Semester 1	3	4				
Unit Status : Compulsory Unit (5)									
CE40126	Advanced biochemical engineering	6	Semester 1	3	4				
CE40127	Advanced chemical engineering	6	Semester 1	3	4				
CE40131	Advanced materials and porous solids	6	Semester 1	3	4				
CE40168	Micro-process engineering	6	Semester 1	3	4				
CE40187	MEng product & process design project	30	Semester 2	3	4	Yes			

**Business Support Systems** - part of Computing Services



<b>MEng(Hons) Chemical Engineering with Year long work placement - Being delivered 2017/2018</b>
UECE-AKM05

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<b>NFAAR Version</b>	UG <input type="checkbox"/>
<b>Length</b>	5 Years
<b>Mode of Attendance</b>	Full-time
<b>Mode of Placement</b>	Thick Sandwich
<b>Type of Placement</b>	Year Long Work Placement
<b>Intended Award</b>	Master of Engineering with Honours
<b>Award Title</b>	MASTER OF ENGINEERING IN CHEMICAL ENGINEERING
<b>For UG Masters Type Programmes this is</b>	
<b>Exit Awards</b>	UECE-AKC05 Certificate of Higher Education UECE-AKL05 Diploma of Higher Education
<b>Exit Award Rules</b>	
<b>Designated Alternative Programmes</b>	UECE-AFM05 MEng (hons) Chemical Engineering

Assessment weightings and decision references		
Stage	Weighting within programme %	NFAAR decisions reference
Stage 1	<input type="text" value="0"/>	<a href="http://www.bath.ac.uk/registry/nfa/index.htm">http://www.bath.ac.uk/registry/nfa/index.htm</a>
Stage 2	<input type="text" value="20"/>	
Stage 3	<input type="text" value="40"/>	
Stage 4	<input type="text" value="0"/>	
Stage 5	<input type="text" value="40"/>	
Stage 6	<input type="text"/>	



Unit	Unit Title	Credits	Period	Part	Stage	DEU	SRU	TSC or DPC	Placement Status
<b>Year of Study : 1 (8)</b>									
Unit Status : Compulsory Unit (8)									
CE10185	Chemical engineering skills & practice 1	12	All Year	1	1				
CE10224	Science for chemical engineering	12	All Year	1	1				
CE10167	Chemical engineering principles (conservation, transformation & separation)	12	All Year	1	1	Yes			
CE10079	Bioprocess engineering fundamentals	6	Semester 1	1	1				
MA10192	Mathematics 1	6	Semester 1	1	1				
CE10083	Transport phenomena 1	6	Semester 2	1	1				
CE10087	First year design project	3	Semester 2	1	1				
MA10193	Mathematics 2	3	Semester 2	1	1				
<b>Year of Study : 2 (9)</b>									
Unit Status : Compulsory Unit (9)									
CE20186	Chemical engineering skills & practice 2	9	All Year	2	2				
XX20196	Process dynamics, modelling and control	12	All Year	2	2				
CE20089	Transport phenomena 2	6	Semester 1	2	2				
CE20090	Engineering thermodynamics	6	Semester 1	2	2				
CE20091	Reaction engineering	6	Semester 1	2	2				
CE20093	Particle technology	3	Semester 2	2	2				
CE20094	Management 1	6	Semester 2	2	2				
CE20095	Separations processes 2	6	Semester 2	2	2				
CE20223	Design & safety	6	Semester 2	2	2				
<b>Year of Study : 3 (8)</b>									
Unit Status : CE3014 Optional Units: Select 30 credits from this list: (3)									
CE30122	MEng research project (home)	30	Semester 2	2	3				
CE30124	MEng research project (overseas)	30	Semester 2	2	3				
CE30125	MEng research project (industry)	30	Semester 2	2	3				
Unit Status : Compulsory Unit (5)									
CE30119	Transport phenomena 3	6	Semester 1	2	3				
CE30123	Intermediate design project	6	Semester 1	2	3				
CE30145	Environmental management	6	Semester 1	2	3				
CE40128	Management 2	6	Semester 1	2	3				
XX40175	Advanced mathematical modelling	6		2	3				