



Programme Specification						
Save		Show Guidance				
General Information						
Title	MEng (Hons) Mechanical Engineering with Manufacturing and Management					
Awarding Institution	University of Bath					
Teaching Institution	University of Bath					
Programme Accredited by	IMechE January 2014 / IET January 2014					
Collaborative Provision Type	Not Applicable <input type="checkbox"/>					
Placement Available?	Yes <input checked="" type="checkbox"/>					
Study Abroad Available?	Select.. <input type="checkbox"/>					
Subject Benchmark Statement(s) Click here to see 'QAA List'	Engineering: http://www.qaa.ac.uk/en/Publications/Documents/Subject-benchmark-statement-Engineering-.pdf					
Programme Approved by	Senate Minute 10030, 20 March 1996					
Aims	Learning Outcomes	Assessment	Placement/Prof Acc	Admissions/Support	Show All	Close
Aims; "What is the purpose of this programme of study? What is the programme intended to achieve?"						
Synopsis and Coherence	<p>Synopsis</p> <p>The first two years provide a core foundation curriculum with 66 credits (equivalent to 132 CATS credits) in Mechanical Engineering Science and Manufacturing, 24 credits in Mathematics and Computing topics, 24 credits of Design and Materials and 6 credits of Experimentation and Applied Engineering. All units are compulsory in years one and two.</p> <p>The third year may be spent on a period of supervised industrial training.</p> <p>The third academic year includes, as core material, 30 credits of Manufacturing and Management topics and a full-time Group Business and Design Project that takes place in the second semester. The projects are usually integrated with an engineering/manufacturing company or the group project may be carried out in industry as an Integrated Industrial Design Project.</p> <p>The fourth year comprises one core Manufacturing unit and four optional units that may be chosen from a selection of around 25 available units.</p> <p>An individual full-time project will be taken in the second semester of the final year, which will contribute 30 credits to the programme. Typically the manufacturing projects cover management, engineering and manufacturing processes.</p> <p>Academic Coherence</p> <p>The curriculum has been designed to provide for those students who want a Manufacturing Engineering and Management education, with the widest possible choice of courses in the final year. Design is a common thread that runs through the degree programme and integrates taught engineering science, manufacturing and management elements in project based engineering activities.</p> <p>The first two years of the programme lay the foundations of the common mechanical principles and give students a view of most of the important areas of mechanical engineering, including design and manufacture which runs throughout the whole 4 academic years of the course. The final two years provide scope for students to study topics that are of particular interest to them in the area of manufacturing and management. Full-time group and individual project work provide opportunities to apply the lecture material to the solution of practical problems and to introduce the elements of the management of an engineering enterprise.</p> <p>This MEng degree is accredited by the IMechE and the IET as satisfying the educational requirements for Chartered Engineer Status.</p>					
Educational Aims of the Programme						

	<p>Aims</p> <ul style="list-style-type: none"> • To enable students to pursue professional careers in manufacturing engineering at a level which requires the exercise of sound judgement, personal responsibility and initiative, and the ability to make engineering decisions in complex and unpredictable professional environments. • To equip students with a detailed understanding of the principles of mechanical engineering science, many aspects of which will be at, or informed by, the current boundaries of the discipline. • To equip students with skills to systematically employ engineering principles to produce original analyses of, and solutions to, manufacturing engineering problems. • To provide an understanding of the knowledge required to design, operate and control manufacturing systems. • To develop an understanding of the holistic nature of manufacturing and the mechanisms for achieving manufacturing system integration. • To develop an understanding of the means by which processes and manufacturing systems can be modelled. • To enable students to work successfully in engineering teams <p>Objectives</p> <p>It is expected that graduates of this programme will meet the educational requirements for registration as Chartered Engineers. It is intended that all graduates will satisfy the UK SPEC Learning Outcomes from C to M Level and will have experienced a wide range of delivery and assessment strategies.</p> <p>To this end the objectives of the programme will be to prepare graduates to:</p> <ul style="list-style-type: none"> • use their knowledge and understanding of mechanical science and management to produce soundly based and original solutions to manufacturing problems, through the detailed evaluation of available evidence, arguments and assumptions, some aspects of which are informed by research in the area; • apply theoretical and practical techniques to produce creative analyses of, and solutions to, manufacturing problems in both familiar, and complex and unpredictable professional environments; • provide a high level of technical leadership; • use initiative, effective communication and interpersonal skills; • operate within the appropriate code of professional conduct, recognising obligations to society, the profession and the environment.
<p>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 SECC guidance.</p>	
<p>Knowledge and Understanding</p>	<p>Students will demonstrate:</p> <ul style="list-style-type: none"> • systematic, detailed and critical understanding of manufacturing processes and systems, 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 manufacturing; • 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 manufacturing engineers may have to work under. <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>
<p>Intellectual Skills</p>	<p>Students will demonstrate an:</p> <ul style="list-style-type: none"> • ability to apply the concepts and principles of mechanical engineering science and management to the solution of manufacturing 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 manufacturing that may be either of a routine nature or require the development of new and original techniques. <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>
<p>Professional Practice Skills</p>	

	<p>Students will be able to:</p> <ul style="list-style-type: none"> • employ a range of established and new techniques to review and critically analyse information concerning manufacturing engineering problems, and to propose and implement solutions in a professional manner; • deal with complex engineering and management 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; • 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 a manufacturing organisation. <p>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.</p>
<p>Transferable/Key Skills</p>	<p>Students will demonstrate:</p> <ul style="list-style-type: none"> • an ability to use IT to collect, analyse and present technical information; • an ability to use appropriate professional simulation and design tools; • the exercise of initiative and personal responsibility; • an ability to effectively present technical information in both written and spoken form; • independent learning ability required for continuing professional development; • how to plan and execute a project • an ability to work in a team <p>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.</p>
<p>Assessment Methods</p>	
<p>Summary of Assessment Regulations</p>	<p>NFA - fully compliant <input checked="" type="checkbox"/></p>
<p>Progression Regulations and Awards</p> <p><i>For programmes fully compliant with NFA refer to the relevant appendices of the relevant NFAAR document (UG, PGT, FD, HY, or CPD)</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 NFA.</i></p>	<p>Students leaving an undergraduate programme prematurely may be eligible for a Certificate of Higher Education (www.bath.ac.uk/quality/documents/certhe.pdf) or a Diploma of Higher Education (www.bath.ac.uk/quality/documents/diplhe.pdf)</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 http://www.bath.ac.uk/registry/nfa/nfaar-ug.pdf</p>
<p><i>Students leaving an undergraduate programme prematurely may be eligible for a Certificate of Higher Education or a Diploma of Higher Education.</i></p>	
<p>Click here to see 'Indicators of Quality & Standards'</p>	
<p>Placement and Professional Accreditation</p>	
<p>Details of Work Placements Requirements / Work Based Learning / Industrial Training Requirements</p>	<p>Students on the sandwich programme will undertake a placement of at least thirty weeks during the third year. An informal report on the placement will be produced and 60 credits will be awarded for successful completion of the placement year although this will not contribute to the degree classification.</p>
<p>Details of Study Abroad Requirements</p>	
<p>Details of Professional Accreditation</p>	
<p>Admissions and Support</p>	

<p>Admissions Criteria including APL/APEL arrangements</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: http://www.bath.ac.uk/study/ug/prospectus/subject/mechanical-engineering/entry-requirements/</p> <p>GCE A-level candidates are normally required to obtain A*AA to include Mathematics and Physics. Either Mathematics or Physics must be A*. Other equivalent qualifications are accepted.</p> <p>English language requirements are the same as the institution's minimum requirement, that is 6.5 in IELTS with a minimum of 6.0 in the four components.</p> <p>Students from Taylor's University College (TUC), Malaysia who have completed the first and second years of the BEng (Hons) in Mechanical Engineering programme at the University College may be considered for entry into the third year of the MEng programme provided they satisfy the following entry requirements.</p> <ul style="list-style-type: none"> • The University of Bath's minimum English language requirements (as detailed above). • A minimum overall average mark of 70% for their second year at TUC. <p>TUC students admitted directly into the third year of the MEng programme will carry forward their second year average mark from TUC for the purposes of final degree classification.</p>
<p>Details of Support Available to Students</p> <p>[link to Ac Reg quality page]</p>	
<p>Department and Programme Specific Support Information</p> <p><i>e.g. induction programmes, any peer mentoring schemes, regular department events</i></p>	<p>Further information about the Department is available at http://www.bath.ac.uk/mech-eng/</p> <p>Information relating to the various degree course programmes and units is available at http://www.bath.ac.uk/catalogues/</p>

Business Support Systems - part of Computing Services



MEng(Hons) Mechanical Engineering with Manufacturing and Management - Being delivered 2017/2018
UEME-AFM38

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NFAAR Version	UG <input type="checkbox"/>
Length	4 Years
Mode of Attendance	Full-time
Mode of Placement	None
Type of Placement	None
Intended Award	Master of Engineering with Honours
Award Title	MASTER OF ENGINEERING IN MECHANICAL ENGINEERING WITH MANUF/
For UG Masters Type Programmes this is	
Exit Awards	UEME-AFC38 Certificate of Higher Education UEME-AFL38 Diploma of Higher Education
Exit Award Rules	
Designated Alternative Programmes	

Assessment weightings and decision references		
Stage	Weighting within programme %	NFAAR decisions reference http://www.bath.ac.uk/registry/nfa/index.htm
Stage 1	0	
Stage 2	20	
Stage 3	40	Additional information for Year 3: NB. Students may be permitted to take ME40315 (External integrated project - 30 credits) instead of ME30068 and ME40228 in Semester 2 subject to
Stage 4	40	Additional information for Year 4: Students must choose at least one ME4 unit as an option in Semester 1.
Stage 5		
Stage 6		

Unit	Unit Title	Credits	Period	Part	Stage	DEU	SRU	TSC or DPC	Placement Status
Year of Study : 1 (10)									
Unit Status : Compulsory Unit (10)									
ME10001	Experimentation, engineering skills & applied engineering	6	Semester 1	1	1				
ME10003	Thermodynamics	6	Semester 1	1	1				
ME10004	Solid mechanics 1	6	Semester 1	1	1				
ME10006	Design materials & manufacturing 1	6	Semester 1	1	1				
ME10304	Mathematics 1	6	Semester 1	1	1				
ME10009	Fluid mechanics	6	Semester 2	1	1				
ME10010	Solid mechanics 2	6	Semester 2	1	1				
ME10012	Design materials & manufacturing 2	6	Semester 2	1	1				
ME10285	Instrumentation, electronics & electrical drives	6	Semester 2	1	1				
ME10305	Mathematics 2	6	Semester 2	1	1				
Year of Study : 2 (10)									
Unit Status : Compulsory Unit (10)									
ME20013	Systems & control	6	Semester 1	2	2				
ME20014	Modelling techniques 1	6	Semester 1	2	2				
ME20016	Solid mechanics 3	6	Semester 1	2	2				
ME20018	Design 3	6	Semester 1	2	2				
ME20022	Fluid dynamics with historical perspective	6	Semester 1	2	2				
ME20015	Thermal power and heat transfer	6	Semester 2	2	2				
ME20021	Modelling techniques 2	6	Semester 2	2	2				
ME20023	Solid mechanics 4	6	Semester 2	2	2				
ME20025	Design 4	6	Semester 2	2	2				
ME20026	Manufacturing operations and technology	6	Semester 2	2	2				
Year of Study : 3 (7)									
Unit Status : Compulsory Unit (7)									
ME30042	Computer integrated manufacturing	6	Semester 1	2	3				
ME30197	Business processes	6	Semester 1	2	3				
ME30335	Costing for engineering design and manufacture	6	Semester 1	2	3				
ME30342	Advanced manufacturing technology	6	Semester 1	2	3				
MN20275	Project management	6		2	3				

Unit	Unit Title	Credits	Period	Part	Stage	DEU	SRU	TSC or DPC	Placement Status
			Semester 1						
ME30068	Group business & design project - I	12	Semester 2	2	3				
ME40228	Group business & design project - II	18	Semester 2	2	3				

Year of Study : 4 (29)

Unit Status : Compulsory Unit (2)

ME40321	Engineering project	30	All Year	3	4	Yes			
ME40046	Modelling and analysis of manufacturing systems	6	Semester 1	3	4				

Unit Status : ME4017 Optional Units: Select a minimum of 0 and a maximum of 1 units from this list: BLOCK 1 (2)

ME30218	Aircraft propulsion	6	Semester 1	3	4				
ME40212	Biomimetics	6	Semester 1	3	4				

Unit Status : ME4018 Optional Units: Select a minimum of 0 and a maximum of 1 units from this list: BLOCK 2 (3)

ME30030	Structural mechanics	6	Semester 1	3	4				
ME30045	Aerospace structures 1	6	Semester 1	3	4				
ME40058	Fluid power	6	Semester 1	3	4				

Unit Status : ME4019 Optional Units: Select a minimum of 0 and a maximum of 1 units from this list: BLOCK 3 (3)

ME30029	Control systems	6	Semester 1	3	4				
ME30293	Computer aids for design	6	Semester 1	3	4				
MN20072	Managing human resources	6	Semester 1	3	4				

Unit Status : ME4020 Optional Units: Select a minimum of 0 and a maximum of 1 units from this list: BLOCK 5 (4)

ME30067	Vehicle dynamics	6	Semester 1	3	4				
ME30295	Electronics, signals and drives	6	Semester 1	3	4				
ME40054	Computational fluid dynamics	6	Semester 1	3	4				
ME40061	Biomechanics	6	Semester 1	3	4				

Unit Status : ME4021 Optional Units: Select a minimum of 0 and a maximum of 1 units from this list: BLOCK 6 (2)

ME30219	Aircraft performance	6	Semester 1	3	4				
ME40064	System modelling & simulation	6	Semester 1	3	4				

Unit Status : ME4022 Optional Units: Select a minimum of 0 and a maximum of 1 units from this list: BLOCK 7 (3)

ME30041	Aircraft stability & control	6	Semester 1	3	4				
ME30217	Vehicle engineering	6	Semester 1	3	4				
ME40331	Robotics engineering	6	Semester 1	3	4				

Unit Status : ME4023 Optional Units: Select a minimum of 0 and a maximum of 1 units from this list: BLOCK 8 (3)

ME30032	Aerodynamics	6	Semester 1	3	4				
ME30037	Internal combustion engine technology	6	Semester 1	3	4				
ME30264	Materials selection in engineering design	6		3	4				

Unit	Unit Title	Credits	Period	Part	Stage	DEU	SRU	TSC or DPC	Placement Status
▲Unit Status : ME4079 Optional Units: Select a minimum of 0 and a maximum of 1 units from this list: BLOCK 9 (4)									
ME30060	Heat transfer	6	Semester 1	3	4				
ME40049	Innovation and advanced design	6	Semester 1	3	4				
ME40055	Energy & the environment	6	Semester 1	3	4				
ME40195	Medical engineering	6	Semester 1	3	4				
▲Unit Status : ME4116 Optional Units: Select a minimum of 0 and a maximum of 1 units from this list: BLOCK 10 (3)									
ME30294	Product design and development	6	Semester 1	3	4				
ME40057	Finite element analysis	6	Semester 1	3	4				
MN20074	Digital business innovation	6	Semester 1	3	4				

Business Support Systems - part of Computing Services



MEng(Hons) Mechanical Engineering with Manufacturing and Management with Year long work placement - Being delivered 2017/2018
UEME-AKM38

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NFAAR Version	UG <input type="checkbox"/>
Length	5 Years
Mode of Attendance	Full-time
Mode of Placement	Thick Sandwich
Type of Placement	Year Long Work Placement
Intended Award	Master of Engineering with Honours
Award Title	MASTER OF ENGINEERING IN MECHANICAL ENGINEERING WITH MANUF/
For UG Masters Type Programmes this is	
Exit Awards	UEME-AKC38 Certificate of Higher Education UEME-AKL38 Diploma of Higher Education
Exit Award Rules	
Designated Alternative Programmes	UEME-AFM38 MEng (hons) Mechanical Engineering with Manufacturing and Management

Assessment weightings and decision references		
Stage	Weighting within programme %	NFAAR decisions reference
Stage 1	<input type="text" value="0"/>	http://www.bath.ac.uk/registry/nfa/index.htm
Stage 2	<input type="text" value="20"/>	
Stage 3	<input type="text" value="0"/>	
Stage 4	<input type="text" value="40"/>	Additional information for Year 4: NB. Students may be permitted to take ME40315 (External integrated project - 30 credits) instead of ME30068 and ME40228 in Semester 2, subject to
Stage 5	<input type="text" value="40"/>	Additional information for Year 5: Students must choose at least one ME4 unit as an option in Semester 1.
Stage 6	<input type="text"/>	

Unit	Unit Title	Credits	Period	Part	Stage	DEU	SRU	TSC or DPC	Placement Status
Year of Study : 1 (10)									
Unit Status : Compulsory Unit (10)									
ME10001	Experimentation, engineering skills & applied engineering	6	Semester 1	1	1				
ME10003	Thermodynamics	6	Semester 1	1	1				
ME10004	Solid mechanics 1	6	Semester 1	1	1				
ME10006	Design materials & manufacturing 1	6	Semester 1	1	1				
ME10304	Mathematics 1	6	Semester 1	1	1				
ME10009	Fluid mechanics	6	Semester 2	1	1				
ME10010	Solid mechanics 2	6	Semester 2	1	1				
ME10012	Design materials & manufacturing 2	6	Semester 2	1	1				
ME10285	Instrumentation, electronics & electrical drives	6	Semester 2	1	1				
ME10305	Mathematics 2	6	Semester 2	1	1				
Year of Study : 2 (10)									
Unit Status : Compulsory Unit (10)									
ME20013	Systems & control	6	Semester 1	2	2				
ME20014	Modelling techniques 1	6	Semester 1	2	2				
ME20016	Solid mechanics 3	6	Semester 1	2	2				
ME20018	Design 3	6	Semester 1	2	2				
ME20022	Fluid dynamics with historical perspective	6	Semester 1	2	2				
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ME20021	Modelling techniques 2	6	Semester 2	2	2				
ME20023	Solid mechanics 4	6	Semester 2	2	2				
ME20025	Design 4	6	Semester 2	2	2				
ME20026	Manufacturing operations and technology	6	Semester 2	2	2				
Year of Study : 3 (1)									
Unit Status : Compulsory Unit (1)									
ME20120	Industrial placement	60	All Year	2	3				
Year of Study : 4 (7)									
Unit Status : Compulsory Unit (7)									
ME30042	Computer integrated manufacturing	6	Semester 1	2	4				
ME30197	Business processes	6		2	4				

Unit	Unit Title	Credits	Period	Part	Stage	DEU	SRU	TSC or DPC	Placement Status
			Semester 1						
ME30335	Costing for engineering design and manufacture	6	Semester 1	2	4				
ME30342	Advanced manufacturing technology	6	Semester 1	2	4				
MN20275	Project management	6	Semester 1	2	4				
ME30068	Group business & design project - I	12	Semester 2	2	4				
ME40228	Group business & design project - II	18	Semester 2	2	4				

Year of Study : 5 (29)

Unit Status : Compulsory Unit (2)

ME40321	Engineering project	30	All Year	3	5	Yes			
ME40046	Modelling and analysis of manufacturing systems	6	Semester 1	3	5				

Unit Status : ME4017 Optional Units: Select a minimum of 0 and a maximum of 1 units from this list: BLOCK 1 (2)

ME30218	Aircraft propulsion	6	Semester 1	3	5				
ME40212	Biomimetics	6	Semester 1	3	5				

Unit Status : ME4018 Optional Units: Select a minimum of 0 and a maximum of 1 units from this list: BLOCK 2 (3)

ME30030	Structural mechanics	6	Semester 1	3	5				
ME30045	Aerospace structures 1	6	Semester 1	3	5				
ME40058	Fluid power	6	Semester 1	3	5				

Unit Status : ME4019 Optional Units: Select a minimum of 0 and a maximum of 1 units from this list: BLOCK 3 (3)

ME30029	Control systems	6	Semester 1	3	5				
ME30293	Computer aids for design	6	Semester 1	3	5				
MN20072	Managing human resources	6	Semester 1	3	5				

Unit Status : ME4020 Optional Units: Select a minimum of 0 and a maximum of 1 units from this list: BLOCK 5 (4)

ME30067	Vehicle dynamics	6	Semester 1	3	5				
ME30295	Electronics, signals and drives	6	Semester 1	3	5				
ME40054	Computational fluid dynamics	6	Semester 1	3	5				
ME40061	Biomechanics	6	Semester 1	3	5				

Unit Status : ME4021 Optional Units: Select a minimum of 0 and a maximum of 1 units from this list: BLOCK 6 (2)

ME30219	Aircraft performance	6	Semester 1	3	5				
ME40064	System modelling & simulation	6	Semester 1	3	5				

Unit Status : ME4022 Optional Units: Select a minimum of 0 and a maximum of 1 units from this list: BLOCK 7 (3)

ME30041	Aircraft stability & control	6	Semester 1	3	5				
ME30217	Vehicle engineering	6	Semester 1	3	5				
ME40331	Robotics engineering	6	Semester 1	3	5				

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ME30032	Aerodynamics	6	Semester 1	3	5				
ME30037	Internal combustion engine technology	6	Semester 1	3	5				
ME30264	Materials selection in engineering design	6	Semester 1	3	5				
▲Unit Status : ME4079 Optional Units: Select a minimum of 0 and a maximum of 1 units from this list: BLOCK 9 (4)									
ME30060	Heat transfer	6	Semester 1	3	5				
ME40049	Innovation and advanced design	6	Semester 1	3	5				
ME40055	Energy & the environment	6	Semester 1	3	5				
ME40195	Medical engineering	6	Semester 1	3	5				
▲Unit Status : ME4116 Optional Units: Select a minimum of 0 and a maximum of 1 units from this list: BLOCK 10 (3)									
ME30294	Product design and development	6	Semester 1	3	5				
ME40057	Finite element analysis	6	Semester 1	3	5				
MN20074	Digital business innovation	6	Semester 1	3	5				

Business Support Systems - part of Computing Services