

**KEY PROGRAMME INFORMATION**

<b>Originating institution(s)</b> Bournemouth University	<b>Faculty responsible for the programme</b> Faculty of Science and Technology
<b>Final award(s), title(s) and credits</b> BEng (Hons) Mechanical Engineering – 120 (60 ECTS) Level 4 / 120 (60 ECTS) Level 5 / 120 (60 ECTS) Level 6 credits	
<b>Intermediate award(s), title(s) and credits</b> Dip HE Mechanical Engineering – 120 (60 ECTS) Level 4 / 120 (60 ECTS) Level 5 credits Cert HE Mechanical Engineering – 120 (60 ECTS) Level 4 credits	
<b>UCAS Programme Code(s) (where applicable and if known)</b> H105	<b>HECoS (Higher Education Classification of Subjects) Code and balanced or major/minor load</b> 100190 (100%)
<b>External reference points</b> UK Quality Code for Higher Education; Part A: Setting and Maintaining Academic Standards; Chapter A1: UK and European reference points for academic standards (May 2015) - incorporates the Frameworks for Higher Education Qualifications of UK Degree-Awarding Bodies (Qualification Frameworks), Foundation Degree qualification benchmark, Master's Degree Characteristics and Subject Benchmark Statements; Subject benchmark statements - Engineering (2023); UK Standard for Professional Engineering Competence and Commitment (UK-SPEC): The Accreditation of Higher Education Programmes (AHEP) fourth edition from the Engineering Council UK (August 2020)..	
<b>Professional, Statutory and Regulatory Body (PSRB) links</b>  The <b>BEng (Hons) Mechanical Engineering</b> programme has been accredited by the Institution of Engineering Designers (IED) and the Institution of Mechanical Engineers (IMechE) for the 2025 to 2029 intake years under the following terms: The accredited BEng (Hons) fully meets the exemplifying academic benchmark requirements, for registration as an Incorporated Engineer (IEng). It will meet, in part, the exemplifying academic benchmark requirements for registration as a Chartered Engineer (CEng) and Students will need to complete an approved format of further learning pursuant to the requirements of UK-SPEC.	
<b>Places of delivery</b> Bournemouth University, Talbot Campus	
<b>Mode(s) of delivery</b> Full-time/Full-time sandwich	<b>Language of delivery</b> English
<b>Typical duration</b> Programme duration: 3 years full-time / 4 years full-time sandwich Level 4: 1 year Level 5: 1 year Optional sandwich placement: 1 year Level 6: 1 year	
<b>Date of first intake</b> September 2025	<b>Expected start dates</b> September
<b>Maximum student numbers</b> Not applicable	<b>Placements</b> Optional sandwich placement in industry between level 5 and 6 (30 weeks minimum). Students are expected to search for suitable placement opportunities, with the support of the Faculty placements team.
<b>Partner(s)</b> Not applicable	<b>Partnership model</b> Not applicable
<b>Date of this Programme Specification</b> August 2025	
<b>Version number</b> Version 2.2-0926	

## Programme Specification – Section 1

<b>Approval, review or modification reference numbers</b>
E232435
FST2425 17, approved 19/03/2025, previously v2.0
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## Programme Specification – Section 1

### PROGRAMME STRUCTURE

Programme Award and Title: BEng (Hons) Mechanical Engineering										
Year 1/Level 4										
Students are required to complete all 6 core units										
Unit Name	Core/ Option	No of credits	Assessment Element Weightings				Expected contact hours per unit	Unit version no.	HECoS Code (plus balanced or major/minor load)	
			Exam 1	Exam 2	Cwk 1	Cwk 2				
Engineering Design with Practice	Core	20			60	40	50	2.0	100182	
Engineering Principles A	Core	20	100		Pass /Fail		50	2.0	100430 (balanced) 100431 (balanced)	
Engineering Principles B	Core	20	100		Pass /Fail		50	2.0	100430 (balanced) 100431 (balanced)	
Materials with Practice	Core	20	60		40		50	2.0	100203 (balanced) 100184 (balanced)	
Electrical and Electronic Principles	Core	20			50	50	50	3.0	100163	
Engineering Mathematics	Core	20	60		40		40	3.0	101028	
<b>Progression requirements:</b> Requires 120 credits at Level 4										
<b>Exit qualification:</b> Cert HE Mechanical Engineering (requires 120 credits at Level 4)										

## Programme Specification – Section 1

### Year 2/Level 5

Students are required to complete all 6 core units.

Unit Name	Core/ Option	No of credits	Assessment Element Weightings				Expected contact hours per unit	Unit version no.	HECoS Code (plus balanced or major/minor load)
			Exam 1	Exam 2	Cwk 1	Cwk 2			
Manufacturing and Engineering Materials	Core	20	40		60		40	2.0	100202 (balanced) 100203 (balanced)
Stress and Dynamics	Core	20	70		30		50	4.0	100190
Engineering Simulation	Core	20			50	50	50	3.0	100182 (balanced) 100163 (balanced)
Fluids and Thermodynamics	Core	20	100				50	3.0	100577 (balanced) 100431 (balanced)
Management and Commercialisation	Core	20			100		40	2.0	101221 (balanced) 100078 (balanced)
Engineering Mathematics for Mechanical Systems Design	Core	20			50	50	40	2.0	101028 (balanced) 100182 (balanced)

**Progression requirements:** Requires 120 credits at Level 5

**Exit qualification:** Dip HE Mechanical Engineering (requires 120 credits at Level 4 and 120 credits at Level 5)

### Year 3/Level P - Optional placement year in industry/business

The optional sandwich placement is taken between levels 5 and 6.

**Progression requirements:** Satisfactory completion of a minimum 30-week placement in industry/business. Students who do not choose to undertake the optional sandwich placement may progress directly from Level 5 to Level 6.

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### Year 3or4/Level 6

Students are required to complete all 5 core units.

Unit Name	Core/ Option	No of credits	Assessment Element Weightings			Expected contact hours per unit	Unit version no.	HECoS Code (plus balanced or major/minor load)
			Exam 1	Cwk 1	Cwk 2			
Engineering Project	Core	40		80	20	24	3.0	100190
Thermofluids and Energy Conversion	Core	20	100			50	3.0	100431 (balanced) 100577 (balanced)
Innovation and Professional Practice	Core	20	30	70		40	1.1	100078 (balanced) 100814 (balanced)
Advanced Stress and Vibration	Core	20	70	30		50	3.0	100190
Computational Engineering	Core	20		100		40	3.0	100160

**Exit qualification:** BEng (Hons) Mechanical Engineering

**Sandwich UG award:** Requires 120 credits at Level 4, 120 credits at Level 5, 120 credits at Level 6 and successful completion of a placement year.

**Full-time UG award:** Requires 120 credits at Level 4, 120 credits at Level 5 and 120 credits at Level 6.

### AIMS OF THE DOCUMENT

The aims of this document are to:

- define the structure of the programme;
- specify the programme award titles;
- identify programme and level learning outcomes;
- articulate the regulations governing the awards defined within the document.

### AIMS OF THE PROGRAMME

This programme aims to develop creative, innovative and resourceful graduates, who:

- have a set of modern professional mechanical engineering skills informed by research and industry.
- have the ability and confidence to apply their knowledge and skills to specific mechanical engineering problems individually or in a group, and also communicate effectively with both those working in the general field of engineering and with the wider public.
- have a broad understanding of business and management processes, security risks, and the application of business law and intellectual property.
- have knowledge and understanding of a wide range of modern materials, technologies and processes.
- have the ability to apply appropriate science, mathematics and engineering tools for solving complex problems in complex mechanical engineering, and the ability to assess the limitations of particular cases.
- Recognise that the impacts of their decisions may be global and long-lasting and are able to apply the principles of ethics as well as sustainability through the UNSD Goals.
- Are equipped to work with stakeholders and social and cultural structures, both within and outside of their normal community of practice, recognising the benefits and importance of equality, diversity and inclusion. that the impacts of their decisions may be global and long-lasting.

The BEng (Hons) Mechanical Engineering programme integrates the study of scientific and engineering principles, manufacturing and materials knowledge with business and management skills to produce graduates who will contribute to developing and advancing the mechanical engineering field.

An integrated approach is used to develop the understanding and the application of concepts through projects. Theoretical, experimental and computational methods are introduced and compared to understand the limitations of each.

Engineering design is heavily integrated into the programme. A number of projects incorporate a build element to integrate Engineering Practice. Advanced modelling and simulation techniques are utilised to shorten design time and reduce market entry costs. The guidance for the projects reduce through the programmes and the students are required to fully research the problem as well as developing the design culminating in their final project.

The programme seeks to develop global citizens who understand how the world works economically, politically, socially, culturally, technologically and environmentally. They will be able to balance the demands of industry against ethical practice and social and environmental impacts identified in the UNSD Goals. Students will develop team-working skills and understand the importance and benefit of equality, diversity and inclusion.

Sustainability has been heavily built into the curriculum and is embedded in a number of projects. This is informed by the research conducted by the BU Sustainable Design Research cluster.

Engineering practice is integrated throughout the programmes through projects, workshops and laboratories to gain a practical understanding of the theory. In year one students are given an introduction to workshop practice which develops through the programme to include CAD/CAM and Rapid Manufacturing. Students apply experimental mechanics techniques to validate engineering designs and also engage in electronic design and manufacture.

## **ALIGNMENT WITH THE UNIVERSITY'S STRATEGIC PLAN**

The BEng (Hons) Mechanical Engineering programme is informed by and aligned with Bournemouth University's 2025 strategic plan and the fusion of excellent teaching, world-class research and professional practice that is at the heart of the institution's visions and values. Students are supported by academics with a wealth of industry experience, many of whom are actively engaged with national professional engineering institutions. Academics delivering the programme are actively engaged in cutting edge research and consultancy projects, while students are encouraged to participate in a range of co-creation and co-publication projects. The programme's innovative pedagogic approach offers students the opportunity to learn by engaging in a series of practical, industry focused projects. These projects are aimed at equipping students with the full range of skills necessary to succeed in an innovative engineering environment, and are informed by the academic team's own industrial experience as well as by a network of industry contacts, who may also contribute directly to the programme by delivering guest lectures and providing opportunities for industrial visits.

## **LEARNING HOURS AND ASSESSMENT**

Bournemouth University taught programmes are composed of units of study, which are assigned a credit value indicating the amount of learning undertaken. The minimum credit value of a unit is normally 20 credits, above which credit values normally increase at 20-point intervals. 20 credits is the equivalent of 200 study hours required of the student, including lectures, seminars, assessment and independent study. 20 University credits are equivalent to 10 European Credit Transfer System (ECTS) credits.

The assessment workload for a unit should consider the total time devoted to study, including the assessment workload (i.e. formative and summative assessment) and the taught elements and independent study workload (i.e. lectures, seminars, preparatory work, practical activities, reading, critical reflection).

Assessment per 20 credit unit should normally consist of 3,000 words or equivalent. Dissertations and Level 6 and 7 Final Projects are distinct from other assessment types. The word count for these assignments is 5,000 words per 20 credits, recognising that undertaking an in-depth piece of original research as the capstone to a degree is pedagogically sound.

## **STAFF DELIVERING THE PROGRAMME**

Students will usually be taught by a combination of senior academic staff with others who have relevant expertise including – where appropriate according to the content of the unit – academic staff, qualified professional engineers, demonstrators/technicians and research students.

**INTENDED LEARNING OUTCOMES – AND HOW THE PROGRAMME ENABLES STUDENTS TO ACHIEVE AND DEMONSTRATE THE INTENDED LEARNING OUTCOMES**

**PROGRAMME INTENDED OUTCOMES**

<p><b>A: Knowledge and understanding</b></p> <p>This programme provides opportunities for students to develop and demonstrate knowledge and understanding of:</p>	<p>The following learning and teaching and assessment strategies and methods enable students to achieve and to demonstrate the programme learning outcomes:</p>
<p><b>A1</b> modern mechanical engineering technologies and processes for application in industry at a professional engineer level;</p> <p><b>A2</b> a range of scientific, mathematical and engineering principles and required to analyse and solve complex problems;</p> <p><b>A3</b> the appropriate analytical and/or computer tools for efficiently and effectively predicting and optimising complex engineering problems;</p> <p><b>A4</b> the planning, implementation and presentation of a complex individual engineering project;</p> <p><b>A5</b> the business environment and management processes including security risk to operations and assets, and intellectual property rights;</p> <p><b>A6</b> the importance and benefit of equality, diversity and inclusion, as well as being able to balance the demands of industry against social and environmental impacts identified in the UNSD Goals.</p>	<p>Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes):</p> <ul style="list-style-type: none"> <li>• independent research (for project) (A1-A6);</li> <li>• lectures (A1-A6);</li> <li>• seminars (A1–A6);</li> <li>• practical tutorials (A2, A3);</li> <li>• directed reading (A1, A2, A4, A5);</li> <li>• use of the VLE (A1-A6).</li> </ul> <p>Assessment strategies and methods (referring to numbered Intended Learning Outcomes):</p> <ul style="list-style-type: none"> <li>• individual project (A1-A6);</li> <li>• examinations (A2, A6);</li> <li>• coursework (A1–A6).</li> </ul>
<p><b>B: Intellectual skills</b></p> <p>This programme provides opportunities for students to:</p>	<p>The following learning and teaching and assessment strategies and methods enable students to achieve and to demonstrate the programme learning outcomes:</p>
<p><b>B1</b> approach and implement mechanical engineering in a methodical and disciplined manner;</p> <p><b>B2</b> evaluate and synthesise information from a number of sources in order to gain a coherent understanding of mechanical engineering theory and practice;</p> <p><b>B3</b> evaluate critically, and apply scientific knowledge and skills in the development and implementation of practical solutions to complex mechanical engineering problems;</p> <p><b>B4</b> plan and implement mechanical engineering design projects individually and in a group;</p> <p><b>B5</b> demonstrate a level and type of education to allow the pursuit of postgraduate research in a related discipline;</p>	<p>Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes):</p> <ul style="list-style-type: none"> <li>• independent research (for project) (B1-B3, B5);</li> <li>• group exercises (B2, B4);</li> <li>• practical tutorials (B3, B4, B6);</li> <li>• directed reading (B2, B6);</li> <li>• use of the VLE (B1-B6).</li> </ul> <p>Assessment strategies and methods (referring to numbered Intended Learning Outcomes):</p> <ul style="list-style-type: none"> <li>• individual project (B1-B3, B5);</li> <li>• Examinations (B2, B5);</li> <li>• coursework (B1–B6).</li> </ul>

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<p><b>B6</b> critically evaluate modern mechanical engineering technologies research and future trends.</p>	
<p><b>C: Practical skills</b></p> <p>This programme provides opportunities for students to:</p>	<p>The following learning and teaching and assessment strategies and methods enable students to achieve and to demonstrate the programme learning outcomes:</p>
<p><b>C1</b> identify, understand and employ the appropriate analytical models to solve complex mechanical engineering design problems;</p> <p><b>C2</b> use highly specialised manual and/or computer-based methods for engineering communication and presentation;</p> <p><b>C3</b> be able to employ efficiently advanced modelling, simulation and analysis packages in mechanical engineering design;</p> <p><b>C4</b> critically review and select engineering materials and material processing methods for the design of components;</p> <p><b>C5</b> select and use basic workshop-based material processing tools and machines, safely and effectively;</p> <p><b>C6</b> identify and safely use appropriate laboratory methods;</p> <p><b>C7</b> use modern engineering technologies and tools to establish mechanical engineering solutions and adapt engineering designs.</p>	<p>Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes):</p> <ul style="list-style-type: none"> <li>• individual project (C2, C3, C6, C7);</li> <li>• practical tutorials (C2, C3, C5, C6, C7);</li> <li>• seminars (C1, C4);</li> <li>• use of the VLE (C1-C7).</li> </ul> <p>Assessment strategies and methods (referring to numbered Intended Learning Outcomes):</p> <ul style="list-style-type: none"> <li>• individual project (C2, C3, C6, C7);</li> <li>• coursework (C1–C7).</li> </ul>
<p><b>D: Transferable skills</b></p> <p>This programme provides opportunities for students to:</p>	<p>The following learning and teaching and assessment strategies and methods enable students to achieve and to demonstrate the programme learning outcomes:</p>
<p><b>D1</b> communicate effectively and confidently by oral, written and visual means to technical and non-technical audiences;</p> <p><b>D2</b> work effectively in collaboration with others, including staff and students;</p> <p><b>D3</b> demonstrate creativity in problem solving and the application of knowledge across discipline areas;</p> <p><b>D4</b> identify and work towards targets for personal, career, and academic development</p> <p><b>D5</b> be independent and reflective learners;</p> <p><b>D6</b> use IT including the Web, spreadsheets, presentation and word processing;</p> <p><b>D7</b> solve numerical and statistical problems using appropriate techniques.</p>	<p>Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes):</p> <ul style="list-style-type: none"> <li>• lectures (D1);</li> <li>• individual project (D1, D3-D7);</li> <li>• practical tutorials (D3, D6, D7);</li> <li>• seminars (D1, D2, D3, D5);</li> <li>• group exercises (D1, D2, D6);</li> <li>• use of the VLE (D1 – D7).</li> </ul> <p>Assessment strategies and methods (referring to numbered Intended Learning Outcomes):</p> <ul style="list-style-type: none"> <li>• individual projects (D1, D3-D7);</li> <li>• examination (D7);</li> <li>• coursework (D1–D7).</li> </ul>

**LEVEL 5/DipHE INTENDED LEVEL OUTCOMES**

<p><b>A: Knowledge and understanding</b></p> <p>This level provides opportunities for students to develop and demonstrate knowledge and understanding of:</p>	<p>The following learning and teaching and assessment strategies and methods enable students to achieve and to demonstrate the level learning outcomes:</p>
<p><b>A1</b> an increased range of mechanical engineering principles and processes;</p> <p><b>A2</b> analytical tools to apply them to engineering design and technological problems at a professional mechanical engineer level;</p> <p><b>A3</b> the physical and analytical principles required to achieve solutions to a range of standard and non-standard mechanical engineering problems;</p> <p><b>A4</b> the business environment with respect to opportunities and competitive advantage, people management, security risk, and the threat to business operations, assets and intellectual property;</p> <p><b>A5</b> appropriate mathematical methods to solve engineering problems.</p>	<p>Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes):</p> <ul style="list-style-type: none"> <li>• lectures (A1- A5);</li> <li>• seminars (A1 – A5);</li> <li>• directed reading (A1-A5);</li> <li>• use of the VLE (A1-A5).</li> </ul> <p>Assessment strategies and methods (referring to numbered Intended Learning Outcomes):</p> <ul style="list-style-type: none"> <li>• Examinations and in-class tests (A1, A3, A5);</li> <li>• coursework (A1 – A5).</li> </ul>
<p><b>B: Intellectual skills</b></p> <p>This level provides opportunities for students to:</p>	<p>The following learning and teaching and assessment strategies and methods enable students to achieve and to demonstrate the level learning outcomes:</p>
<p><b>B1</b> approach and implement mechanical engineering in a methodical and disciplined manner;</p> <p><b>B2</b> identify and evaluate information from a number of sources in order to gain a coherent understanding of mechanical engineering theory and practice;</p> <p><b>B3</b> evaluate and apply scientific knowledge and skills in the development and implementation of practical solutions to mechanical engineering problems;</p> <p><b>B4</b> plan and implement solutions to mechanical engineering design problems individually and in a group.</p>	<p>Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes):</p> <ul style="list-style-type: none"> <li>• lectures (B1 - B4);</li> <li>• seminars (B1 – B4);</li> <li>• directed reading (B1 – B4);</li> <li>• use of the VLE (B1 – B4).</li> </ul> <p>Assessment strategies and methods (referring to numbered Intended Learning Outcomes):</p> <ul style="list-style-type: none"> <li>• Examinations and in-class tests (B1,B2);</li> <li>• coursework (B1 – B4).</li> </ul>
<p><b>C: Practical skills</b></p> <p>This level provides opportunities for students to:</p>	<p>The following learning and teaching and assessment strategies and methods enable students to achieve and to demonstrate the level learning outcomes:</p>
<p><b>C1</b> identify, understand and employ the appropriate mathematical models to solve mechanical engineering design problems;</p>	<p>Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes):</p> <ul style="list-style-type: none"> <li>• lectures (C1 - C3, C6);</li> </ul>

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<p><b>C2</b> use highly specialised manual and/or computer-based methods for engineering communication and presentation;</p>	<ul style="list-style-type: none"> <li>• coursework (C1 – C7);</li> <li>• practical exercises (C1 – C7);</li> <li>• group exercises (C1-C4).</li> </ul>
<p><b>C3</b> be able to employ efficiently advanced modelling, simulation and analysis packages in mechanical engineering design;</p>	<p>Assessment strategies and methods (referring to numbered Intended Learning Outcomes):</p> <ul style="list-style-type: none"> <li>• examinations and in-class tests (C1, C4);</li> <li>• coursework (C1-C7).</li> </ul>
<p><b>C4</b> review and select engineering materials and material processing methods for the design of components;</p>	
<p><b>C5</b> use basic workshop-based material processing tools and machines, safely and effectively;</p>	
<p><b>C6</b> safely use appropriate laboratory methods;</p>	
<p><b>C7</b> collect, analyse, evaluate, present and use research information.</p>	
<p><b>D: Transferable skills</b></p> <p>This level provides opportunities for students to:</p>	<p>The following learning and teaching and assessment strategies and methods enable students to achieve and to demonstrate the level learning outcomes:</p>
<p><b>D1</b> communicate effectively and confidently by oral, written and visual means to appropriate professional and academic standards;</p>	<p>Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes):</p> <ul style="list-style-type: none"> <li>• lectures (D1 – D7);</li> <li>• seminars (D1- D7);</li> <li>• use of the VLE (D1 – D7);</li> <li>• directed reading (D1- D7).</li> </ul> <p>Assessment strategies and methods (referring to numbered Intended Learning Outcomes):</p> <ul style="list-style-type: none"> <li>• coursework (D1 – D7);</li> <li>• examinations and in-class tests (D1, D3, D5);</li> <li>• practical exercises (D1, D3, D6).</li> </ul>
<p><b>D2</b> work effectively in collaboration with others, including staff and students;</p>	
<p><b>D3</b> demonstrate an enhanced ability in problem solving and the application of knowledge across discipline areas;</p>	
<p><b>D4</b> identify and work towards targets for personal, career, and academic development;</p>	
<p><b>D5</b> be independent and reflective learners;</p>	
<p><b>D6</b> use IT including the Web, spreadsheets, presentation and word processing;</p>	
<p><b>D7</b> solve numerical and statistical problems using appropriate techniques.</p>	

### LEVEL 4/Cert HE INTENDED LEVEL OUTCOMES

<p><b>A: Knowledge and understanding</b></p> <p>This level provides opportunities for students to develop and demonstrate knowledge and understanding of:</p>	<p>The following learning and teaching and assessment strategies and methods enable students to achieve and to demonstrate the level learning outcomes:</p>
<p><b>A1</b> a range of mechanical engineering principles and processes;</p>	<p>Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes):</p> <ul style="list-style-type: none"> <li>• lectures (A1- A3);</li> <li>• seminars (A1 – A3);</li> </ul>
<p><b>A2</b> analytical tools to gain confidence in applying them to mechanical engineering design and</p>	

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<p>technological problems at a professional mechanical engineer level;</p> <p><b>A3</b> mathematical fundamentals, models and processes and their application to a range of mechanical engineering principles and processes.</p>	<ul style="list-style-type: none"> <li>• directed reading (A1-A3);</li> <li>• use of the VLE (A1-A3).</li> </ul> <p>Assessment strategies and methods (referring to numbered Intended Learning Outcomes):</p> <ul style="list-style-type: none"> <li>• examinations and in-class tests (A1-A3);</li> <li>• coursework essays (A1 – A3);</li> <li>• practical exercises (A1).</li> </ul>
<p><b>B: Intellectual skills</b></p> <p>This level provides opportunities for students to:</p>	<p>The following learning and teaching and assessment strategies and methods enable students to achieve and to demonstrate the level learning outcomes:</p>
<p><b>B1</b> approach and implement mechanical engineering in a methodical and disciplined manner;</p> <p><b>B2</b> review and use information from a number of sources in order to gain a coherent understanding of mechanical engineering theory and practice;</p> <p><b>B3</b> evaluate and apply basic scientific knowledge and skills in the development and implementation of practical solutions to mechanical engineering problems.</p>	<p>Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes):</p> <ul style="list-style-type: none"> <li>• lectures (B1, B2);</li> <li>• seminars (B1 – B3);</li> <li>• directed reading (B1 – B3);</li> <li>• use of the VLE (B1 – B3).</li> </ul> <p>Assessment strategies and methods (referring to numbered Intended Learning Outcomes):</p> <ul style="list-style-type: none"> <li>• examinations and in-class tests (B1, B2);</li> <li>• coursework (B1 – B3);</li> <li>• practical exercises (B3).</li> </ul>
<p><b>C: Practical skills</b></p> <p>This level provides opportunities for students to:</p>	<p>The following learning and teaching and assessment strategies and methods enable students to achieve and to demonstrate the level learning outcomes:</p>
<p><b>C1</b> understand and employ appropriate analytical models to solve mechanical engineering design problems;</p> <p><b>C2</b> use highly specialised manual and/or computer-based methods for engineering communication and presentation;</p> <p><b>C3</b> review and select engineering materials and material processing methods for the design of components;</p> <p><b>C4</b> use basic workshop-based material processing tools and machines, safely and effectively;</p> <p><b>C5</b> use basic electrical and electronic components, safely and effectively;</p> <p><b>C6</b> safely use appropriate laboratory methods.</p>	<p>Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes):</p> <ul style="list-style-type: none"> <li>• lectures (C1 – C6);</li> <li>• coursework (C1 – C6);</li> <li>• practical exercises (C1 – C6);</li> <li>• group exercises (C1-C6).</li> </ul> <p>Assessment strategies and methods (referring to numbered Intended Learning Outcomes):</p> <ul style="list-style-type: none"> <li>• examinations and in-class tests (C1, C3);</li> <li>• coursework (C1- C6);</li> <li>• practical exercises (C1- C6).</li> </ul>
<p><b>D: Transferable skills</b></p> <p>This level provides opportunities for students to:</p>	<p>The following learning and teaching and assessment strategies and methods enable students to achieve and to demonstrate the level learning outcomes:</p>

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<p><b>D1</b> communicate effectively and confidently by oral, written and visual means to appropriate professional and academic standards;</p> <p><b>D2</b> work effectively in collaboration with others, including staff and students;</p> <p><b>D3</b> demonstrate ability in problem solving and the application of knowledge across discipline areas;</p> <p><b>D4</b> identify and work towards targets for personal, career, and academic development;</p> <p><b>D5</b> develop reflection in learning;</p> <p><b>D6</b> use IT including the Web, spreadsheets, presentation and word processing;</p> <p><b>D7</b> solve numerical and statistical problems using appropriate techniques.</p>	<p>Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes):</p> <ul style="list-style-type: none"> <li>• lectures (D1 – D6);</li> <li>• seminars (D1- D7);</li> <li>• use of the VLE (D1 – D7);</li> <li>• directed reading (D1- D7).</li> </ul> <p>Assessment strategies and methods (referring to numbered Intended Learning Outcomes):</p> <ul style="list-style-type: none"> <li>• coursework (D1 – D7);</li> <li>• examinations and in-class tests (D1, D3, D7);</li> <li>• practical exercises (D1- D7).</li> </ul>
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### ADMISSION REGULATIONS

The regulations for this programme are the University's Standard Undergraduate Admission Regulations with the following exceptions:

#### Entry to Level 4

Applicants will require A-Level Mathematics and any Science or Technology subject or equivalent.

#### Entry to Level 5

Applicants to level 5 for the BEng programme Mechanical Engineering require:

- an HNC Engineering at Bournemouth and Poole College with Merit
- or
- an HNC with Merit in an engineering discipline accredited to EngTech

#### Entry to Level 6

Students who have successfully completed the FdEng Engineering (Mechanical Design) programme at Bournemouth and Poole with a minimum classification of Merit will be eligible to apply for entry with advanced standing to the Level 6 of the BEng (Hons) Mechanical Engineering programme at Bournemouth University and credited with 120 credits at Level 4 and 120 credits at Level 5.

Additionally, other applicants to level 6 for the BEng programme Mechanical Engineering require a FdSc, FdEng or HND with Merit in an engineering discipline accredited to EngTech, partial IEng or IEng.

#### Transfer between delivery modes for the BEng (Hons) Mechanical Engineering and BEng (Hons) Engineering

Students can request to transfer from full-time BEng (Hons) Mechanical Engineering to part-time (flexible learning) BEng (Hons) Engineering and vice versa, at any point during the programmes. Each transfer will be considered on a case by case basis.

#### Transfer from MEng to BEng (Hons) Mechanical Engineering

Students can request to transfer from MEng (Hons) Mechanical Engineering to BEng (Hons) Mechanical Engineering, at any point during the programme. Each transfer will be considered on a case by case basis.

### PROGRESSION ROUTES

BEng (Hons) Mechanical Engineering  
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## Programme Specification - Section 2

Partnership arrangements provide formally approved progression routes through which students are eligible to apply for a place on a programme leading to a BU award. Please find information on International Partnerships here: <https://www.bournemouth.ac.uk/collaborate/global-bu/international-partnerships>

### ASSESSMENT REGULATIONS

The regulations for this programme are the University's Standard Undergraduate Assessment Regulations (6A) (<https://intranet.bournemouth.ac.uk/pandptest/6a-standard-assessment-regulations-integrated-masters.pdf>) with the following approved exceptions to clauses 7.1 and 7.2 which align the programme with the requirements of The Engineering Council, Accreditation of Higher Education Programmes (AHEP):

#### COMPENSATION (Section 7)

Compensation may only be applied for up to 20 credits across all levels of the programme and cannot be applied to individual or group project units, or those in the following list:

- Computational Engineering (Level 6);
- Innovation and Professional Practice (Level 6).

### PLACEMENT ELEMENT

This programme offers students, under the guidance of the Placement Tutor and the Placement Coordinator, the opportunity to complete a sandwich year with a minimum 30-week placement before level 6.

Successful completion of the 30-week placement is optional. The placement is assessed on a pass/fail basis using a 3,000-word reflective report. The 30-week sandwich placement must be completed between levels 5 and 6 and is a requirement for progression to level 6 for the successful completion of the sandwich mode award.

Placement draws on some or all of the units studied on the first two levels of the programme. It provides the opportunity for the student to develop their abilities and understanding of mechanical engineering and related subjects, as well as providing a platform for successful entry into the profession following graduation. It applies and develops understanding and skills acquired in Levels 4 and 5, makes a major contribution to the understanding of the final level units, further develops final projects by utilising the context of the work experience as appropriate and enhances students' prospects of future employment.

<http://intranet.bournemouth.ac.uk/pandptest/4k-placements-policy-and-procedure.pdf>

## Programme Skills Matrix

Programme Intended Learning Outcomes		A 1	A 2	A 3	A 4	A 5	A 6	B 1	B 2	B 3	B 4	B 5	B 6	C 1	C 2	C 3	C 4	C 5	C 6	C 7	D 1	D 2	D 3	D 4	D 5	D 6	D 7	
Units																												
L6	Computational Engineering (20)	x	x	x				x		x		x		x	x	x	x			x	x		x		x	x	x	
L6	Thermofluids and Energy Conversion (20)	x	x	x				x	x	x		x	x	x		x	x		x	x	x	x	x		x	x	x	
L6	Engineering Project (40)	x	x	x	x	x	x	x	x	x		x			x	x				x	x	x		x	x	x	x	
L6	Innovation and Professional Practice (20)					x	x					x										x	x	x	x	x	x	
L6	Advanced Stress and Vibration (20)	x	x	x				x	x	x		x		x		x	x		x		x		x			x	x	
L5	Manufacturing and Engineering Materials (20)	x	x				x	x	x	x				x			x					x	x					
L5	Management and Commercialisation (20)					x	x															x	x	x				
L5	Engineering Simulation (20)	x	x	x				x	x	x				x	x	x				x	x	x		x		x	x	
L5	Engineering Mathematics for Mechanical Systems Design (20)	x	x	x	x			x	x	x	x		x	x	x	x	x	x	x		x	x	x		x	x	x	
L5	Stress and Dynamics (20)	x	x	x				x		x				x			x		x		x		x				x	
L5	Fluids and Thermodynamics (20)	x	x	x				x	x					x						x		x		x			x	
L4	Engineering Mathematics (20)	x		x				x	x					x								x	x					x
L4	Electrical and Electronic Principles (20)	x	x	x				x	x					x		x				x		x	x				x	x
L4	Engineering Design with Practice (20)	x	x	x	x			x	x	x	x			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
L4	Engineering Principles A (20)	x	x	x				x	x					x		x				x		x	x				x	x
L4	Materials with Practice (20)	x	x	x	x			x	x							x	x	x	x		x	x		x		x	x	
L4	Engineering Principles B (20)	x	x	x				x	x					x		x				x		x	x				x	x

## PSRB Output Standard Matrix

This course has been developed to meet the exemplifying academic benchmark requirements for registration as an Incorporated Engineer (IEng) and also, in part, Chartered Engineer (CEng). Students will need to complete an approved format of further learning pursuant to the requirements of UK-SPEC to meet CEng in full. See the Engineering Council UK website (<https://www.engc.org.uk/ahep>) for more information on the learning outcomes.

EAB/ACC2/C: Output Standards Matrix (for use with AHEP 4.0)																					
IEng		AHEP4 Level >>	6	6	6	6	6	6	5	6	6	4	5	5	5	5	6	5	4	4	
Programme Title:	BEng Mechanical Engineering		Science and Maths		Engineering Analysis				Design and Innovation		The Engineer and Society					Engineering Practice					
	Module code	Compulsory	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17	B18	
Total Count	76		11	10	8	5	2	4	2	2	3	3	1	8	5	2	3	3	3	1	
Core Count	76		11	10	8	5	2	4	2	2	3	3	1	8	5	2	3	3	3	1	
<b>Year 1 / Level 4</b>	<i>Eng Design with Practice</i>	x				x		x						x	x			x	x		
	<i>Eng Mathematics</i>	x	x	x																	
	<i>Eng Principles A</i>	x	x	x										x							
	<i>Eng Principles B</i>	x	x	x										x							
	<i>Elec &amp; Electronic Principles</i>	x			x	x								x	x						
	<i>Materials with Practice</i>	x										x		x	x						
<b>Year 2 / Level 5</b>	<i>Eng Math for Mech Systems Design</i>	x	x	x	x	x		x										x	x		
	<i>Eng Simulation</i>	x	x	x	x			x													
	<i>Fluids and Thermodynamics</i>	x	x	x	x									x							
	<i>Management &amp; Commercialisation</i>	x									x	x					x	x			
	<i>Manufacturing and Eng Materials</i>	x							x							x	x				
	<i>Stress and Dynamics</i>	x	x	x	x																
<b>Year 3 / Level 6</b>	<i>Adv. Stress &amp; Vibration</i>	x	x	x	x									x							
	<i>Innovation and Professional Practice</i>	x					x			x	x		x			x	x				
	<i>Computational Engineering</i>	x	x	x	x	x		x													
	<i>Engineering Project</i>	x	x	x	x	x	x		x	x	x	x			x		x		x	x	
	<i>Thermofluids and Energy Conversion</i>	x	x	x										x							

EAB/ACC2/C: Output Standards Matrix (for use with AHEP 4.0)																				
Partial CEng		AHEP4 Level >>	6	6	6	6	6	6	6	6	6	4	6	6	6	6	6	5	6	4
Programme Title:	BEng Mechanical Engineering																			
	Module code	Compulsory	Science and Maths	Engineering Analysis				Design and Innovation		The Engineer and Society				Engineering Practice						
			C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16	C17	C18
Total Count	76		11	10	8	5	2	4	2	2	3	3	1	8	5	2	3	3	3	1
Core Count	76		11	10	8	5	2	4	2	2	3	3	1	8	5	2	3	3	3	1
<b>Year 1 / Level 4</b>	<i>Eng Design with Practice</i>	x				x		x						x	x			x	x	
	<i>Eng Mathematics</i>	x	x	x																
	<i>Eng Principles A</i>	x	x	x										x						
	<i>Eng Principles B</i>	x	x	x										x						
	<i>Elec &amp; Electronic Principles</i>	x			x	x								x	x					
	<i>Materials with Practice</i>	x										x		x	x					
<b>Year 2 / Level 5</b>	<i>Eng Math for Mech Systems Design</i>	x	x	x	x	x		x										x	x	
	<i>Eng Simulation</i>	x	x	x	x			x												
	<i>Fluids and Thermodynamics</i>	x	x	x	x									x						
	<i>Management &amp; Commercialisation</i>	x									x	x					x	x		
	<i>Manufacturing and Eng Materials</i>	x							x						x	x				
	<i>Stress and Dynamics</i>	x	x	x	x															
<b>Year 3 / Level 6</b>	<i>Adv. Stress &amp; Vibration</i>	x	x	x	x									x						
	<i>Innovation and Professional Practice</i>	x					x			x	x		x			x	x			
	<i>Computational Engineering</i>	x	x	x	x	x		x												
	<i>Engineering Project</i>	x	x		x	x	x		x	x	x	x			x		x		x	x
	<i>Thermofluids and Energy Conversion</i>	x	x	x										x						