

KEY PROGRAMME INFORMATION

Originating institution(s) Bournemouth University	Faculty responsible for the programme Faculty of Science and Technology
Final award(s), title(s) and credit BEng (Hons) Engineering Design (Mechanical Engineering) – Level 6 credits BEng (Hons) Engineering Design (Electrical and Electronic Engineering) – Level 6 credits BEng (Hons) Engineering Design (Manufacturing Engineering) - Level 6 credits	
Intermediate award(s), title(s) and credits NA	
UCAS Programme Code(s) (where applicable and if known)	HECoS (Higher Education Classification of Subjects) Code and balanced or major/minor load. 100184 (Major) 100213 (Minor)
External reference points UK Quality Code for Higher Education; Part A: Setting and Maintaining Academic Standards; Chapter A1: UK and European reference points for academic standards (October 2013) - 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: Engineering Technician, Incorporated Engineer and Chartered Engineer Standard (UK-SPEC) fourth edition from the Engineering Council UK (August 2020); UK Standard for Professional Engineering Competence: The Accreditation of Higher Education Programmes fourth edition from the Engineering Council UK (Aug 2020).	
Professional, Statutory and Regulatory Body (PSRB) links Accreditation will be sought from the Institution of Engineering Designers (IED) to meet the requirement for further learning for Incorporated Engineer (IEng). Graduates from a top-up degree that has been accredited must also have completed an accredited first qualification (eg foundation degree or HND) to be considered to hold an accredited degree.	
Places of delivery University Centre Newbury	
Mode(s) of delivery Day release	Language of delivery English
Typical duration 1 year	
Date of first intake September 2025	Expected start dates September
Maximum student numbers Not applicable	Placements N/A – this programme is for those in engineering employment only
Partner(s) University Centre Newbury	Partnership model Franchise
Date of this Programme Specification May 2025	

Programme Specification – Section 1

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PROGRAMME STRUCTURE

Programme Award and Title: BEng (Hons) Engineering Design (Mechanical Engineering) – Level 6 credits <u>or</u> BEng (Hons) Engineering Design (Electrical and Electronic Engineering) – Level 6 credits <u>or</u> BEng (Hons) Engineering Design (Manufacturing Engineering) - Level 6 credits								
Year 1/Level 6								
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			
Advanced Engineering (UCN)	Core	20		100%		25	1.0	100184
Innovation and Professional Practice (UCN)	Core	20	30%	70%		25	1.0	101221
Computational Engineering (UCN)	Core	20		100%		25	1.0	100160
Mechatronics (UCN)	Core	20		40%	60%	25	1.0	100170
BEng Project (UCN)	Core	40		100%		30	1.0	100184
<p>Progression requirements: Students who have successfully completed the HND in Engineering (Mechanical) programme at University Centre Newbury with a Pass will be eligible to apply for entry with advanced standing to the Level 6 of the BEng (Hons) Engineering Design (Mechanical Engineering) programme at Bournemouth.</p> <p>Students who have successfully completed the HND in Engineering (Electrical and Electronic) programme at University Centre Newbury with a Pass will be eligible to apply for entry with advanced standing to the Level 6 of the BEng (Hons) Engineering Design (Electrical and Electronic Engineering) programme at Bournemouth University.</p> <p>Students who have successfully completed the HND in Engineering (Manufacturing) programme at University Centre Newbury with a Pass will be eligible to apply for entry with advanced standing to the Level 6 of the BEng (Hons) Engineering Design (Manufacturing Engineering) programme at Bournemouth University.</p> <p>Exit qualification: Either BEng (Hons) Engineering Design (Electrical and Electronic Engineering) or BEng (Hons) Engineering Design (Manufacturing Engineering) or BEng (Hons) Engineering Design (Mechanical Engineering) depending on the discipline specialisation.</p>								

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 engineering skills at the forefront of the discipline informed by research and industry.
- have the ability to independently select appropriate strategies to successfully plan and execute an engineering project underpinned by relevant research literature and adapt them in unfamiliar situations to produce innovative designs, systems, components or processes to fulfil new needs effectively.
- have the ability and confidence to apply their knowledge and skills to complex/unfamiliar mechanical engineering problems individually or in a group, demonstrating effective leadership and the ability to manage relationships in project teams, and communicating effectively with both those working in the field of engineering and with the wider public.
- have the ability to apply and integrate knowledge and understanding of other engineering disciplines to support study of the mechanical engineering discipline.
- have a mastery of a range of project management techniques demonstrating analytical and critical thinking with respect to the planning of engineering design and development projects.
- have a working knowledge and understanding of business-related issues, encompassing finance, development, marketing, and legal issues.
- have a broad understanding of business and management processes, security risks, and the application of business law and intellectual property.
- have comprehensive knowledge and understanding of a wide range of existing and emerging theories, technologies and processes and demonstrate professional competence and critical awareness when selecting and applying them for design and analysis.
- 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, and that the impacts of their decisions may be global and long-lasting.

The BEng (Hons) Engineering Design programme will develop high calibre engineers who are able to function both as an engineer and a technology leader in industries such as aerospace, electronic, automotive, alternative energy, oil and gas, and similar high-tech industries.

Key to the exploitation of emerging technologies is understanding their behaviour, performance and limitations. The ability to model and simulate the performance of new technologies is paramount where design optimisation is required.

Advanced modelling and simulation techniques can also be harnessed to shorten design time and reduce market entry costs. This is essential where emerging technologies are exploited as existing methodologies may prohibit lengthy development programmes.

Understanding how emerging technologies can be harnessed through enterprise is essential for an innovative market. Therefore, sound business knowledge is required as well as identifying avenues for research funding and strategic collaboration.

Programme Specification - Section 2

The main emphasis of the programme will be in studying solid-state mechanics, manufacturing, electronic design and/or modern/non-traditional engineering technologies and their integration. An aligned individual project together with up-to-date engineering skills will ensure the graduate can not only understand the technologies but apply them.

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.

Programmes differentiate through the candidate's progression route and project selection:

- Those progressing from UCN HND Engineering (Mechanical) or equivalent will normally complete a project in the Mechanical discipline and graduate with a BEng (Hons) Engineering Design (Mechanical Engineering).
- Candidates progressing from UCN HND Engineering (Manufacturing) or equivalent will normally complete a project in the Manufacturing discipline and graduate with a BEng (Hons) Engineering Design (Manufacturing Engineering).
- Candidates progressing from UCN HND Engineering (Electrical and Electronic) or equivalent will normally complete a project in the Electrical and Electronic discipline and graduate with a BEng (Hons) Engineering Design (Electrical and Electronic Engineering).

ALIGNMENT WITH THE UNIVERSITY'S STRATEGIC PLAN

The BEng (Hons) Engineering Design 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, 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 and demonstrators/technicians.

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

LEVEL 6 BEng (Hons) Engineering Design INTENDED PROGRAMME OUTCOMES

<p>A: Subject knowledge and understanding</p> <p>This programme provides opportunities for apprentices to develop and demonstrate knowledge and understanding of:</p>	<p>The following learning and teaching and assessment strategies and methods enable apprentices to achieve and to demonstrate the programme learning outcomes:</p>
<p>A1 modern engineering technologies and processes for potential application in industry at a professional engineer level;</p> <p>A2 the appropriate analytical and/or computer tools for efficiently and effectively predicting performance in-service;</p> <p>A3 the planning, implementation and presentation of an individual project;</p> <p>A4 business situations with respect to strengths and weaknesses, opportunities and threats and develop ways and means to counteract or exploit such aspects.</p> <p>A5 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"> • independent research (for project) (A1-A4); • lectures (A1-A5); • seminars (A1-A5); • practical tutorials (A2, A4); • directed reading (A1, A4, A5); • use of the VLE (A1-A5). <p>Assessment strategies and methods (referring to numbered Intended Learning Outcomes):</p> <ul style="list-style-type: none"> • individual project (A1-A4); • examination (A1); • coursework (A1-A5).
<p>B: Intellectual skills</p> <p>This programme provides opportunities for apprentices to:</p>	<p>The following learning and teaching and assessment strategies and methods enable apprentices to achieve and to demonstrate the programme outcomes:</p>
<p>B1 approach and implement engineering in a methodical and disciplined manner;</p> <p>B2 evaluate and synthesise information from a number of sources in order to gain a coherent understanding of engineering theory and practice;</p> <p>B3 evaluate critically, and apply scientific knowledge and skills in the development and implementation of practical solutions to complex engineering problems;</p> <p>B4 plan and implement engineering design projects individually and in a group;</p> <p>B5 demonstrate a level and type of education to allow the pursuit of postgraduate research in a related discipline;</p> <p>B6 critically evaluate modern engineering technologies research and future trends.</p>	<p>Learning and teaching strategies and methods:</p> <ul style="list-style-type: none"> • independent research (for project) (B1-B3, B5); • group exercises (B2, B4); • practical tutorials (B6); • directed reading (B2, B6); • use of the VLE (B1-B6). <p>Assessment strategies and methods:</p> <ul style="list-style-type: none"> • individual project (B1-B3, B5); • examination (B2); • coursework (B1-B6)

Programme Specification - Section 2

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

Programme Specification - Section 2

Programme Skills Matrix

Units		A 1	A 2	A 3	A 4	A 5	B 1	B 2	B 3	B 4	B 5	B 6	C 1	C 2	C 3	C 4	C 5	C 6	D 1	D 2	D 3	D 4	D 5	D 6	D 7
L E V E L 6	Advanced Engineering (UCN) (20)	x	x				x	x	x		x	x	x		x	x	x	x	x	x	x		x	x	x
	BEng Project (UCN)	x	x	x	x	x	x	x	x		x			x	x		x	x	x		x	x	x	x	x
	Innovation and Professional Practice (UCN) (20)			x	x	x				x	x								x	x	x	x	x	x	
	Computational Engineering (UCN) (20)	x	x				x		x		x		x	x	x	x		x	x		x		x	x	x
	Mechatronics (UCN) (20)	x	x				x		x		x		x		x		x		x						x

ADMISSION REGULATIONS

The regulations for this programme are the University's Standard Undergraduate Admission Regulations (<https://intranet.bournemouth.ac.uk/pandptest/3a-undergraduate-admissions-regulations.pdf>) with the following exceptions:

Students who have successfully completed the HND in Engineering (Mechanical) programme at University Centre Newbury with a Pass will be eligible to apply for entry with advanced standing to the Level 6 of the BEng (Hons) Engineering Design (Mechanical Engineering) programme at Bournemouth University.

Students who have successfully completed the HND in Engineering (Electrical and Electronic) programmes at University Centre Newbury with a Pass will be eligible to apply for entry with advanced standing to the Level 6 of the BEng (Hons) Engineering Design (Electrical and Electronic Engineering) programme at Bournemouth.

Students who have successfully completed the HND in Engineering (Manufacturing) programme at University Centre Newbury with a Pass will be eligible to apply for entry with advanced standing to the Level 6 of the BEng (Hons) Engineering Design (Manufacturing Engineering) programme at Bournemouth University.

Additionally, other applicants to level 6 for the BEng Engineering Design (all pathways) programme require a FdSc, FdEng or HND with Pass in a relevant engineering discipline accredited to EngTech, partial IEng or IEng.

Applicants will normally be in full employment when applying for this programme.

A combination of academic and experiential learning (such as work experience or extra-curricular activities in a relevant field) will be considered on its individual merits and may be acceptable if the applicant does not possess traditional qualifications.

PROGRESSION ROUTES

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 Global Partnerships here: [Global partnerships | Bournemouth University](#)

ASSESSMENT REGULATIONS

The regulations for this programme are the University's [Standard Undergraduate Assessment Regulations \(6A\)](#) 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 at level 6 and cannot be applied to individual or group project units.

WORK BASED LEARNING (WBL) AND PLACEMENT ELEMENTS

This course is offered to the students who are in relevant employment in the engineering industry. All units offer informal opportunity for reflection on current practice at the workplace and further their learning in addition to the taught sessions in the programme.

All students, undertake a number of industry related case studies/projects. These can be carried out within a company or developed within the college/university environment. In both cases the projects involve direct contact with the customer and as such are 'live' projects. When a project is carried, students will normally design and develop a project specified by a company.

Site visits, presentations by and discussions with industry representatives will also ensure that a "real world" understanding of project management is achieved.

Reflective logs are used to facilitate students' learning and encourage the transferability of knowledge between study and the workplace. The units are designed to encourage the students to review what they do at work in light of the UK Standard for Professional Engineering Competence (UK-SPEC), fulfilling the competence and commitment requirements for registration as an Incorporated Engineer (IEng).

All students, undertake an industry related BEng Project at level 6. This can be carried out within a company or developed within the academic environment. In both cases the projects involve direct contact with the customer.