KEY PROGRAMME INFORMATION

Originating institution(s) Bournemouth University	**Faculty responsible for the programme** Faculty of Science and Technology
Final award(s), title(s) and credits BEng (Hons) Engineering (Electronic Design) – 120 (60 ECTS) Level 4 / 120 (60 ECTS) Level 5 / 120 (60 ECTS) Level 6 credits Students who undertake this award may do so in order to meet the academic requirements of the Manufacturing Engineer degree apprenticeship route.	
Intermediate award(s), title(s) and credits None	
UCAS Programme Code(s) (where applicable and if known) NA	**HECoS (Higher Education Classification of Subjects) Code and balanced or major/minor load** 100184 (Major) 100165 (Minor)
External reference points The UK Quality Code for Higher Education including: Expectations and practices for standards and for quality; Themed advice and guidance documents; Qualifications Frameworks (incorporating the Framework for Higher Education Qualifications) (FHEQ); Characteristics Statements (Foundations Degrees, Master's Degrees, Doctoral Degrees) Credit Frameworks; Subject Benchmark Statements. Subject benchmark statements - Engineering (2019); UK standard for professional Engineering Competence: Engineering Technician, Incorporated Engineer and Chartered Engineer Standard (UK-SPEC) third edition from the Engineering Council UK (January 2014); UK Standard for Professional Engineering Competence: The Accreditation of Higher Education Programmes third edition from the Engineering Council UK (May 2014).	
Professional, Statutory and Regulatory Body (PSRB) links Accreditation by the Institution of Engineering Designers to meet in part, the exemplifying academic benchmark requirements for registration as a Chartered Engineer (CEng).	
Places of delivery Bournemouth University, Talbot Campus	
Mode(s) of delivery Part-time blended learning	**Language of delivery** English
Typical duration Programme duration: 2 years part-time Level 6: 2 years	
Date of first intake September 2022	**Expected start dates** September
Maximum student numbers Not applicable	**Placements** NA – this programme is for those in engineering employment only.
Partner(s) Not applicable	**Partnership model** Not applicable
Date of this Programme Specification July 2022. Applies to level 6 from September 2022.	
Version number Version 1.0-0924	

Approval, review or modification reference numbers FST 2223 13
Author Philip Sewell

PROGRAMME STRUCTURE

Programme Award and Title: BEng (Hons) Engineering (Electronic Design)								
Year 1/2/Level 6 Students are required to complete 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**			
BEng Project (FL)	Core	40		100		39	v1.1	100184
Advanced Engineering (FL)	Core	20		100		25	v2.1	100184
Business Development (FL)	Core	20		100		25	v1.1	101221
Manufacturing Operations (FL)	Core	20		100		25	v2.1	100209
Mechatronics (FL)	Core	20	100			25	v1.1	100170
Exit qualification: BEng (Hons) Engineering (Electronic Design) **Part-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 engineering skills informed by research and industry.
- have the ability and confidence to apply their knowledge and skills to specific electronic design engineering problems individually or in a group, and also communicate effectively with both those working in the field of engineering and with the wider public.
- have a working knowledge and understanding of business related issues, encompassing finance, development, marketing, and legal issues.
- have knowledge and understanding of a wide range of modern materials, technologies and processes.
- can apply mathematical and computer-based models for solving problems in electronic design engineering, and the ability to assess the limitations of particular cases.
- appreciate the social, environmental and ethical considerations affecting their engineering judgement.
- can manage, document and communicate, project plans and results.

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

The main emphasis of the programme will be in studying mechatronics, manufacturing 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.

Advanced modelling and simulation techniques are harnessed to shorten design time and reduce market entry costs.

Sound business knowledge is required. The business element of the programme will ensure that, as well as being able to function as an engineer, the graduate will have knowledge of strategic management and how it interacts with the business development process.

The BEng (Hons) Engineering (Electronic Design) part time (flexible learning) route has been developed specifically for engineers in employment. The programme is not a traditional day release programme, each unit is predominately studied through distance learning supported by a number of face-to-face tutorials with academic staff and peers. In addition, mentoring of students to enable them to gain professional engineering qualifications will be offered (dependent upon relevant industrial experience).

ALIGNMENT WITH THE UNIVERSITY'S STRATEGIC PLAN

The BEng (Hons) Engineering (Electronic 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, 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

<table>
<tr><td>A: Subject knowledge and understanding

This programme provides opportunities for students to develop and demonstrate knowledge and understanding of:</td><td>The following learning and teaching and assessment strategies and methods enable students to achieve and to demonstrate the programme learning outcomes:</td></tr>
<tr><td rowspan="2">A1 modern engineering technologies and processes for potential application in industry at a professional engineer level;

A2 the appropriate analytical and/or computer tools for efficiently and effectively predicting performance in-service;

A3 the planning, implementation and presentation of an individual project;

A4 business situations with respect to strengths and weaknesses, opportunities and threats and develop ways and means to counteract or exploit such aspects.</td><td>Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes):

• independent research (for project) (A1-A4);

• lectures (A1-A4);

• seminars (A1–A4);

• practical tutorials (A2);

• directed reading (A1, A4);

• use of the VLE (A1-A4).</td></tr>
<tr><td>Assessment strategies and methods (referring to numbered Intended Learning Outcomes):

• individual project (A1-A4);

• examinations (A1, A2);

• coursework (A1–A4).</td></tr>
<tr><td>B: Intellectual skills

This programme provides opportunities for students to:</td><td>The following learning and teaching and assessment strategies and methods enable students to achieve and to demonstrate the programme outcomes:</td></tr>
<tr><td>B1 approach and implement electronic design engineering in a methodical and disciplined manner;

B2 evaluate and synthesise information from a number of sources in order to gain a coherent understanding of engineering theory and practice;

B3 evaluate critically, and apply scientific knowledge and skills in the development and implementation of practical solutions to electronic design engineering problems;

B4 plan and implement electronic design engineering projects individually and in a group;</td><td>Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes):

• independent research (for project) (B1- B6);

• group exercises (B2, B4);

• practical tutorials (B6);

• directed reading (B2, B6);

• use of the VLE (B1-B6).</td></tr>
</table>

B5 demonstrate a level and type of education to allow the pursuit of postgraduate research in a related discipline; **B6** critically evaluate modern engineering technologies research and future trends.	Assessment strategies and methods (referring to numbered Intended Learning Outcomes): • individual project (B1-B6); • Examinations (B2); • coursework (B1–B6).
C: Practical skills This programme provides opportunities for students to:	The following learning and teaching and assessment strategies and methods enable students to achieve and to demonstrate the programme learning outcomes:
C1 identify, understand and employ the appropriate analytical models to solve engineering problems; **C2** use highly specialised manual and/or computer-based methods for engineering communication and presentation; **C3** be able to employ efficiently advanced modelling, simulation and analysis packages in electronic design; **C4** critically review and select engineering materials and material processing methods for the design of components; **C5** use basic workshop-based material processing tools and machines, safely and effectively; **C6** identify and safely use appropriate laboratory methods; **C7** use modern engineering technologies and tools to establish innovative non-routine electronic design solutions and adapt engineering designs.	Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes): • individual project (C1-C7); • practical tutorials (C2, C3, C6); • seminars (C4); • use of the VLE (C1-C7). Assessment strategies and methods (referring to numbered Intended Learning Outcomes): • individual project (C1-C7); • coursework (C1–C7). • Exam (C1, C3, C6)
D: Transferable skills This programme provides opportunities for students to:	The following learning and teaching and assessment strategies and methods enable students to achieve and to demonstrate the programme learning outcomes:
D1 communicate effectively and confidently by oral, written and visual means to appropriate professional and academic standards; **D2** work effectively in collaboration with others, including staff and students; **D3** demonstrate creativity in problem solving and the application of knowledge across discipline areas; **D4** identify and work towards targets for personal, career, and academic development **D5** be independent and reflective learners;	Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes): • lectures (D1); • individual project (D1, D3-D7); • practical tutorials (D3, D7); • seminars (D1); • group exercises (D1, D2, D6); • use of the VLE (D1 – D7).

D6 use IT including the Web, spreadsheets, presentation and word processing; **D7** solve numerical and statistical problems using appropriate techniques.	Assessment strategies and methods (referring to numbered Intended Learning Outcomes): • individual projects (D1, D3-D7); • examination (D1, D7); • coursework (D1–D7).

ADMISSION REGULATIONS

The regulations for this programme are the University's Standard Undergraduate Admission Regulations (https://intranetsp.bournemouth.ac.uk/pandptest/3A-standard-admissions-regulations-taught-programmes%20(2022-23).pdf) with the following exceptions:

Entry to Level 6
Students who have successfully completed the FdEng Engineering (Electronic Design) or FdEng Engineering (Marine Technologies) programmes at Bournemouth and Poole College with a minimum classification of Merit will be automatically accepted for entry with advanced standing to Level 6 of the BEng (Hons) Engineering (Electronic Design) 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 Engineering (Electronic Design) programme require a FdSc, FdEng or HND with Merit in an electronic engineering discipline accredited to EngTech, partial IEng or IEng.

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

PROGRESSION ROUTES

Students who have successfully completed the FdEng Engineering (Electronic Design) or FdEng Engineering (Marine Technologies) programmes at Bournemouth and Poole College with a minimum classification of Merit will be automatically accepted for entry with advanced standing to Level 6 of the BEng (Hons) Engineering (Electronic Design) programme at Bournemouth University and credited with 120 credits at Level 4 and 120 credits at Level 5.

ASSESSMENT REGULATIONS

The regulations for this programme are the University's Standard Undergraduate Assessment Regulations (https://intranetsp.bournemouth.ac.uk/pandptest/6a-standard-assessment-regulations-undergraduate%20(2021-22).pdf) with the following exceptions:

COMPENSATION (Section 7)
Compensation may only be applied for up to 20 credits across all levels of the programme.

WORK BASED LEARNING (WBL) AND PLACEMENT ELEMENTS

Students on this programme are all in full-time employment. Assessments have been designed to enable the students to apply their learning in their workplace.

Programme Skills Matrix

	Units	Programme Intended Learning Outcomes																								
		A 1	A 2	A 3	A 4	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
LEVEL 6	Advanced Engineering (FL) (20)	x	x	x		x	x	x		x	x	x		x	x		x	x	x	x	x		x	x	x
	BEng Project (FL) (40)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	Business Development (FL) (20)			x	x				x	x									x	x	x	x	x	x	
	Mechatronics (FL) (20)	x	x			x		x		x		x		x			x		x						x
	Manufacturing Operations (FL) (20)	x	x	x			x			x	x	x			x				x	x	x		x	x	x

A – Subject Knowledge and Understanding
This programme provides opportunities for students to develop and demonstrate knowledge and understanding of:

1. modern engineering technologies and processes for potential application in industry at a professional engineer level;
2. the appropriate analytical and/or computer tools for efficiently and effectively predicting performance in-service;
3. the planning, implementation and presentation of an individual project;
4. business situations with respect to strengths and weaknesses, opportunities and threats and develop ways and means to counteract or exploit such aspects.

B – Intellectual Skills
This programme provides opportunities for students to:

1. approach and implement electronic design engineering in a methodical and disciplined manner;
2. evaluate and synthesise information from a number of sources in order to gain a coherent understanding of engineering theory and practice;
3. evaluate critically, and apply scientific knowledge and skills in the development and implementation of practical solutions to electronic design engineering problems;
4. plan and implement electronic design engineering projects individually and in a group;
5. demonstrate a level and type of education to allow the pursuit of postgraduate research in a related discipline;
6. critically evaluate modern engineering technologies research and future trends.

C – Subject-specific/Practical Skills
This programme provides opportunities for students to:

1. identify, understand and employ the appropriate analytical models to solve engineering problems;
2. use highly specialised manual and/or computer-based methods for engineering communication and presentation;
3. be able to employ efficiently advanced modelling, simulation and analysis packages in electronic design;
4. critically review and select engineering materials and material processing methods for the design of components;
5. use basic workshop-based material processing tools and machines, safely and effectively;
6. identify and safely use appropriate laboratory methods;
7. use modern engineering technologies and tools to establish innovative non-routine electronic design solutions and adapt engineering designs.

D – Transferable Skills
This programme provides opportunities for students to:

1. communicate effectively and confidently by oral, written and visual means to appropriate professional and academic standards;
2. work effectively in collaboration with others, including staff and students;
3. demonstrate creativity in problem solving and the application of knowledge across discipline areas;
4. identify and work towards targets for personal, career, and academic development
5. be independent and reflective learners;
6. use IT including the Web, spreadsheets, presentation and word processing;
7. solve numerical and statistical problems using appropriate techniques.