KEY PROGRAMME INFORMATION

Originating institution(s) Bournemouth University	**Faculty responsible for the programme** Faculty of Media, Science and Technology
Final award(s), title(s) and credits MEng (Hons) Engineering – 120 (60 ECTS) Level 4 / 120 (60 ECTS) Level 5 / 120 (60 ECTS) Level 6 credits / 120 (60 ECTS) Level 7 credits	
Intermediate award(s), title(s) and credits HNC Engineering (mechanical design) – 120 (60 ECTS) Level 4 credits HNC Engineering (electronic design) – 120 (60 ECTS) level 4 credits HNC Engineering (manufacturing management) – 120 (60 ECTS) Level 4 credits HNC Engineering (marine technologies) – 120 (60 ECTS) Level 4 credits FdEng Engineering (mechanical design) - 120 (60 ECTS) Level 4 / 120 (60 ECTS) Level 5 credits FdEng Engineering (electronic design) - 120 (60 ECTS) Level 4 / 120 (60 ECTS) Level 5 credits FdEng Engineering (manufacturing management) - 120 (60 ECTS) Level 4 / 120 (60 ECTS) Level 5 credits FdEng Engineering (marine technologies) - 120 (60 ECTS) Level 4 / 120 (60 ECTS) Level 5 credits BEng (Hons) Engineering – 120 (60 ECTS) Level 4 / 120 (60 ECTS) Level 5 credits / 120 (60 ECTS) / Level 6 credits BEng (Hons) Engineering (mechanical design) – 120 (60 ECTS) Level 4 / 120 (60 ECTS) Level 5 credits / 120 (60 ECTS) / Level 6 credits BEng (Hons) Engineering (electronic design) – 120 (60 ECTS) Level 4 / 120 (60 ECTS) Level 5 credits / 120 (60 ECTS) / Level 6 credits BEng (Hons) Engineering (manufacturing management) – 120 (60 ECTS) Level 4 / 120 (60 ECTS) Level 5 credits / 120 (60 ECTS) / Level 6 credits	
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) 100213 (Minor)
External reference points UK Quality Code for Higher Education; Part A: 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 (2015); UK standard for professional Engineering Competence: Engineering Technician, Incorporated Engineer and Chartered Engineer Standard (UK-SPEC) fourth edition from the Engineering Council UK (January 2014); 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 The **MEng (Hons) Engineering** 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 MEng (Hons) fully meets the exemplifying academic benchmark requirements, for registration as a Chartered Engineer (CEng). All students who successfully complete the MEng (Hons) Engineering programme will be accredited by the IED. With regards to accreditation by the IMechE, this applies only to those students who have progressed into the MEng (Hons) Engineering programme from either the BEng (Hons) Engineering or the BEng (Hons) Engineering (Mechanical Design). The **BEng (Hons) Engineering** and **BEng (Hons) Engineering (Mechanical Design)** programmes have been accredited by both 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	

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.

The **BEng (Hons) Engineering (Manufacturing Management)** and **BEng (Hons) Engineering (Mechanical Design)** programmes have been accredited by the Institution of Engineering Designers (IED) 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.

The **FdEng Engineering (Marine Technologies)** and **FdEng Engineering (Mechanical Design)** programmes have been accredited by both 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 FdEng will meet, in part, 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 an Incorporated Engineer (IEng) and Students will need to complete an approved format of further learning pursuant to the requirements of UK-SPEC.

The **FdEng Engineering (Manufacturing Management)** and **FdEng Engineering (Mechanical Design)** programmes have been accredited by the Institution of Engineering Designers (IED) for the 2025 to 2029 intake years under the following terms: The accredited FdEng 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.

The **HNC Engineering (Marine technologies)**, **HNC Engineering (Mechanical Design)**, **HNC Engineering (Electronic Design)**, and **HNC Engineering (Manufacturing Management)**, have been accredited by the Institution of Engineering Designers (IED) for the 2025 to 2029 intake years under the following terms: The accredited HNC fully meets the exemplifying academic benchmark requirements for registration as an Engineering Technician (EngTech).

Mappings to PSRB outcomes for IEng and Partial CEng can be found in Appendix E.

Places of delivery
Bournemouth & Poole College, Poole Campus levels 4 & 5
Bournemouth University, Talbot Campus level 6 & 7

Mode(s) of delivery	**Language of delivery**
Day release levels 4 & 5 Part-time blended learning levels 6 & 7	English

Typical duration
Programme duration:7 years part-time

Level 4: 2 years Part-time/1 year Full-time
Level 5: 12 months
Level 6: 2 years
Level 7: 2 years

Date of first intake	**Expected start dates**
September 2025	September

Maximum student numbers	**Placements**
Not applicable	NA – this programme is for those in engineering employment only.

Partner(s)	**Partnership model**
Bournemouth & Poole College	Franchise

Date of this Programme Specification
August 2025

Version number
1.2-0926

Approval, review or modification reference numbers
E232434
FST2425 17 approved 19/03/2025, previously 1.0

MST2526 01, approved 26/08/2025, previously 1.1
Author Tania Humphries-Smith, Diogo Montalvão, Nigel Garland, Matthew White

PROGRAMME STRUCTURE

Students undertake one of the following pathways:

HNC Engineering (Manufacturing Management) + FdEng Engineering (Manufacturing Management) + BEng Engineering (Manufacturing Management) + MEng Engineering

HNC Engineering (Mechanical Design) + FdEng Engineering (Mechanical Design) + BEng Engineering (Mechanical Design) + MEng Engineering

HNC Engineering (Electronic Design) + FdEng Engineering (Electronic Design) + BEng Engineering (Electronic Design) + MEng Engineering

HNC Engineering (Marine Technologies) + FdEng Engineering (Marine Technologies) + BEng Engineering + MEng Engineering

Programme Award and Title: MEng (Hons) Engineering

Years 1&2 / 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 Subject Code
			Exam 1	Exam 2	Cwk 1	Cwk 2			
Analytical Methods for Manufacturing	Core	20	50%	50%			110	4.0	101028
Business	Core	20			60%	40%	110	1.0	100079 (Major) 100812 (Minor)
Computer Aided Engineering	Core	20			50%	50%	110	4.0	100160
Manufacturing Processes	Core	20			60%	40%	110	4.0	100209 (Major) 100033 (Minor)
Project	Core	20			100%		110	4.0	100184
Supply Chain Management	Core	20			60%	40%	110	2.0	100209 (Major) 100093 (Minor)

Exit and interim qualification: HNC Engineering (Manufacturing Management)
Part -Time award: requires 120 credits at Level 4

Programme Award and Title: MEng (Hons) Engineering
Admission Requirements: 120 credits at Level 4, with a minimum classification of Merit, from a relevant qualification
Internal Progression: from HNC Engineering (Manufacturing Management) programme

Year 3 / Level 5
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 Subject Code
			Exam 1	Cwk 1	Cwk 2			
Industrial Robotics	Core	20		60%	40%	110	4.0	100170
Major Project	Core	40		100%		110	4.0	100184
Quality Management	Core	20		40%	60%	110	4.0	100213
The Engineering Professional	Core	20		50%	50%	110	4.0	100184
Work Based Unit	Core	20		100%		110	4.0	100184

Progression requirements: Students with a minimum classification of Pass will be automatically accepted for entry with advanced standing to the FdEng Engineering programmes
Exit qualification: FdEng Engineering (Manufacturing Management)
Part Time Award: Requires 120 credits at Level 4 and 120 credits at Level 5

Programme Award and Title: MEng (Hons) Engineering
Admission Requirements: 120 credits at Level 4 and 120 credits at Level 5 with a minimum classification of Merit, from a relevant accredited qualification
Internal Progression: from FdEng Engineering (Manufacturing Management) programme

Year 4/5 /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	2.0	100184
Advanced Engineering (FL)	Core	20		100%		25	3.0	100184
Innovation and Professional Practice (FL)	Core	20	30%	70%		25	1.1	101221
Manufacturing Operations (FL)	Core	20		100%		25	3.0	100209
Computational Engineering (FL)	Core	20		100%		25	3.0	100160

Progression requirements: Students with a minimum classification of Pass will be automatically accepted for entry with advanced standing to the BEng Engineering programmes
Exit qualification: BEng (Hons) Engineering (Manufacturing Management)
Part Time Award: Requires 120 credits at Level 4, 120 credits at Level 5 and 120 credits at Level 6.

OR

Programme Award and Title: M Eng (Hons) Engineering

Years 1&2 / 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 Subject Code
			Exam 1	Exam 2	Cwk 1	Cwk 2			
Analytical Methods for Design	Core	20	50%	50%			110	4.0	101028
Business	Core	20			60%	40%	110	1.0	100079 (Major) 100812 (Minor)
Computer Aided Engineering	Core	20			50%	50%	110	4.0	100160
Design Principles	Core	20			60%	40%	110	4.0	100182
Project	Core	20			100%		110	4.0	100184
Mechanical Design Principles	Core	20	60%		40%		110	4.0	100430 (Major) 100033 (Minor)

Exit and interim qualification: HNC Engineering (Mechanical Design)
Part -Time award: requires 120 credits at Level 4

Programme Award and Title: MEng (Hons) Engineering
Admission Requirements: 120 credits at Level 4, with a minimum classification of Merit, from a relevant qualification
Internal Progression: from HNC Engineering (Mechanical Design) programme

Year 3 / Level 5
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 Subject Code
			Exam 1	Exam 2	Cwk 1	Cwk 2			
Design Applications	Core	20			60%	40%	110	4.0	100182
Major Project	Core	40			100%		110	4.0	100184
Mechanical Design Application	Core	20	50%	50%			110	4.0	100430
The Engineering Professional	Core	20			50%	50%	110	4.0	100184
Work Based Unit	Core	20			100%		110	4.0	100184

Progression requirements: Students with a minimum classification of Pass will be automatically accepted for entry with advanced standing to the FdEng Engineering programmes
Exit qualification: FdEng Engineering (Mechanical Design)
Part Time Award: Requires 120 credits at Level 4 and 120 credits at Level 5

Programme Award and Title: MEng (Hons) Engineering
Admission Requirements: 120 credits at Level 4 and 120 credits at Level 5 with a minimum classification of Merit, from a relevant accredited qualification
Internal Progression: from FdEng Engineering (Mechanical Design) programme

Year 4/5 /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	2.0	100184
Advanced Engineering (FL)	Core	20		100%		25	3.0	100184
Innovation and Professional Practice (FL)	Core	20	30%	70%		25	1.1	101221
Advanced Stress and Vibration (FL)	Core	20	70%	30%		25	1.1	100190
Computational Engineering (FL)	Core	20		100%		25	3.0	100160

Progression requirements: Students with a minimum classification of Pass will be automatically accepted for entry with advanced standing to the BEng Engineering programmes
Exit qualification: BEng (Hons) Engineering (Mechanical Design)
Part Time Award: Requires 120 credits at Level 4, 120 credits at Level 5 and 120 credits at Level 6.

OR

Programme Award and Title: MEng (Hons) Engineering

Years 1&2 / 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 Subject Code
			Exam 1	Exam 2	Cwk 1	Cwk 2			
Analytical Methods for Design	Core	20	50%	50%			110	4.0	101028
Business	Core	20			60%	40%	110	1.0	100079 (Major) 100812 (Minor)
Circuit Analysis and Fault Location Techniques	Core	20	40%		60%		110	4.0	100165
Software Design Principles	Core	20	20%		80%		110	1.0	100365 (Major) 100373 (Minor)
Project	Core	20			100%		110	4.0	100184
Electronic Systems Design	Core	20	25%		75%		110	4.0	100165

Exit and interim qualification: HNC Engineering (Electronic Design)
Part -Time award: requires 120 credits at Level 4

Programme Award and Title: MEng (Hons) Engineering
Admission Requirements: 120 credits at Level 4, with a minimum classification of Merit, from a relevant qualification
Internal Progression: from HNC Engineering (Electronic Design) programme

Year 3 / Level 5
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 Subject Code
			Exam 1	Cwk 1	Cwk 2			
Applied Software in Engineering	Core	20		50%	50%	110	2.0	100374
Major Project	Core	40		100%		110	4.0	100184
Electronic Design Applications	Core	20		40%	60%	110	4.0	100165
The Engineering Professional	Core	20		50%	50%	110	4.0	100184
Work Based Unit	Core	20		100%		110	4.0	100184

Progression requirements: Students with a minimum classification of Pass will be automatically accepted for entry with advanced standing to the FdEng Engineering programmes
Exit qualification: FdEng Engineering (Electronic Design)
Part Time Award: Requires 120 credits at Level 4 and 120 credits at Level 5

Programme Award and Title: MEng (Hons) Engineering
Admission Requirements: 120 credits at Level 4 and 120 credits at Level 5 with a minimum classification of Merit, from a relevant accredited qualification
Internal Progression: from FdEng Engineering (Electronic Design) programme

Year 4/5 /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			
BEng Project (FL)	Core	40		100%		39	2.0	100184
Advanced Engineering (FL)	Core	20		100%		25	3.0	100184
Innovation and Professional Practice (FL)	Core	20	30%	70%		25	1.1	101221
Mechatronics (FL)	Core	20		40%	60%	25	2.0	100170
Manufacturing Operations (FL)	Core	20		100%		25	3.0	100209

Progression requirements: Students with a minimum classification of Pass will be automatically accepted for entry with advanced standing to the BEng Engineering programmes
Exit qualification: BEng (Hons) Engineering (Electronic Design)
Part Time Award: Requires 120 credits at Level 4, 120 credits at Level 5 and 120 credits at Level 6.

OR from any bracketed pathway including marine technologies

Programme Award and Title: M Eng (Hons) Engineering

Years 1&2 / 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 Subject Code
			Exam 1	Exam 2	Cwk 1	Cwk 2			
Analytical Methods for Manufacturing	Core	20	50%	50%			110	4.0	101028
Business	Core	20			60%	40%	110	1.0	100079 (Major) 100812 (Minor)
Marine Electrical and Electronic Principles	Core	20	40%		60%		110	2.0	100194
Mechanical Design Principles	Core	20	60%		40%		110	4.0	100430 (Major) 100033 (Minor)
Project	Core	20			100%		110	4.0	100184
Supply Chain Management	Core	20			60%	40%	110	2.0	100209 (Major) 100093 (Minor)

Exit and interim qualification: HNC Engineering Marine Technologies)
Part -Time award: requires 120 credits at Level 4

Programme Award and Title: MEng (Hons) Engineering
Admission Requirements: 120 credits at Level 4, with a minimum classification of Merit, from a relevant qualification
Internal Progression: from HNC Engineering (Marine Technologies) programme

Year 3 / Level 5
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 Subject Code
			Exam 1	Cwk 1	Cwk 2			
Marine Auxiliary Systems	Core	20		40%	60%	110	2.0	100170
Major Project	Core	40		100%		110	4.0	100184
Quality Management	Core	20		50%	50%	110	4.0	100213
The Engineering Professional	Core	20		50%	50%	110	4.0	100184
Work Based Unit	Core	20		100%		110	4.0	100184

Progression requirements: Students with a minimum classification of Pass will be automatically accepted for entry with advanced standing to the FdEng Engineering programmes
Exit qualification: FdEng Engineering (Marine Technologies)
Part Time Award: Requires 120 credits at Level 4 and 120 credits at Level 5

Programme Award and Title: MEng (Hons) Engineering
Admission Requirements: 120 credits at Level 4 and 120 credits at Level 5 with a minimum classification of Merit, from a relevant accredited qualification
Internal Progression: from FdEng Engineering (Marine Technologies) programme

Programme Award and Title: MEng (Hons) Engineering

Year 4/5/Level 6
Students are required to complete 3 core units and choose 2 optional units

Unit Computational Engineering (FL) may have limitations on numbers because of lab availability
Unit Mechatronics (FL) may have limitations on numbers because of lab availability

Unit Name	Core/ Option	No of credits	Assessment Element Weightings			Expected contact hours per unit	Unit version no.	HECoS Subject Code
			Exam 1	Cwk 1	Cwk 2			
BEng Project (FL)	Core	40		100%		39	2.0	100184
Advanced Engineering (FL)	Core	20		100%		25	3.0	100184
Innovation and Professional Practice (FL)	Core	20	30%	70%		25	1.1	101221
Advanced Stress and Vibration (FL)	Option	20	70%	30%		25	1.1	100190
Manufacturing Operations (FL)	Option	20		100%		25	3.0	100209
Computational Engineering (FL)	Option	20		100%		25	3.0	100160
Mechatronics (FL)	Option	20		40%	60%	25	2.0	100170

Progression requirements: Students with a minimum classification of Pass will be automatically accepted for entry with advanced standing to the BEng Engineering programme**s**
Exit qualification: BEng (Hons) Engineering
Part Time Award: Requires 120 credits at Level 4, 120 credits at Level 5 and 120 credits at Level 6

Year 6/7/Level 7
Students are required to complete 3 core units and choose 2 optional units

Unit Engineering Design Simulation (FL) may have limitations on numbers because of lab availability Unit Control System Design (FL) may have limitations on numbers because of lab availability

Unit Name	**Core/ Option**	**No of credits**	**Assessment Element Weightings**			**Expected contact hours per unit**	**Unit version no.**	**HECoS Subject Code**
			Exam 1	**Cwk 1**	**Cwk 2**			
MEng Project (FL)	Core	40		100%		12	4.0	100184
Interdisciplinary Group Project	Core	20		100%		26	1.1	100182
Design Management	Option	20		100%		26	1.1	100048 (major) 100075 (minor)
Life Cycle Management	Core	20		100%		26	1.2	100048 (balanced) 100180 (balanced)
Failure Analysis and Prevention	Option	20	70%	30%		26	2.0	100190
Model Based Engineering	Option	20		100%		26	2.0	100184 (balanced) 100190 (balanced)
Robotic Control Design	Option	20		100%		26	2.0	100170

Progression requirements: Students require a minimum classification of an upper second class or first class from one of the BEng Engineering programmes at BU.
Exit qualification: MEng (Hons) Engineering
Part-time UG award: Requires 120 credits at Level 4, 120 credits at Level 5, 120 credits at Level 6 and 120 credits at Level 7.

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. that the impacts of their decisions may be global and long-lasting.

The MEng (Hons) Engineering programme will develop high calibre engineers who are able to function both as an engineer and a technology leader in industries such as aerospace, marine, 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.

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 at levels 5 and 6 together with up-to-date engineering skills will ensure the graduate can not only understand the technologies but apply them.

The masters level (level 7) broadens and deepens the students' knowledge, understanding, skills and awareness from the bachelor's degree. Broadening is obtained through the Inter-Disciplinary Group Project, Design Management and Robotic Control Design units, while deepening is obtained through the Life Cycle Management, Failure Analysis and Prevention and Model Based Engineering units. Students apply the knowledge, understanding and skills gained in the taught units through the MEng Project which provides an opportunity to critically investigate and report on a particular technical engineering issue in depth.

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.

The MEng (Hons) Engineering part time (flexible learning) route has been developed specifically for engineers in employment. The programme has flexible entry and exit points to suit those with different educational requirements. The programme at levels 6 and 7 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. The programme does follow a more traditional day release model at level 4 and 5 which is taught at Bournemouth & Poole College. 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 MEng (Hons) 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, 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

A: Subject knowledge and understanding This programme provides opportunities for students to develop and demonstrate knowledge and understanding of*:*	The following learning and teaching and assessment strategies and methods enable students to achieve and to demonstrate the programme learning outcomes:
A1 systematic engineering design processes, involving analysing and solving complex engineering problems related to own specialisation; **A2** a broad range of mechanical and related engineering theories and concepts to solve complex engineering problems; **A3** modern engineering technologies and processes for potential application in industry at a professional engineer level taking account of a range of commercial and industrial constraints; **A4** the appropriate analytical and/or computer tools for efficiently and effectively predicting performance in-service; **A5** the effective planning, implementation and presentation of an individual engineering project demonstrating originality in the application of the knowledge; **A6** the selection and application of different techniques used in the management of projects, with emphasis on the ethics, equality, diversity and inclusion of project teams.	Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes): • independent research (for project) (A5); • lectures (A1-A6); • seminars (A1–A6); • practical tutorials (A1, A3); • directed reading (A2, A6); • use of the VLE (A1-A6). Assessment strategies and methods (referring to numbered Intended Learning Outcomes): • individual projects (A5); • examinations (A3); • coursework (A1–A6).
B: Intellectual 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 outcomes:
B1 develop analytical thinking in respect of part and assembly design utilising comprehensive understanding of the scientific principles of own specialisation and related disciplines; **B2** evaluate critically current research and advanced scholarship to formulate, plan, execute and report on a project involving scientific knowledge and skills, and original engineering design in a structured and disciplined manner; **B3** critically reflect upon interpersonal skills required to operate in a team environment as a professional engineer;	Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes): • independent research (for project) (B2, B4); • lectures (B1–B5); • seminars (B1–B5); • practical tutorials (B1); • directed reading (B1–B5);

B4 undertake independent evaluation and argument of alternative approaches to situations, problems or issues that occur when managing a project; **B5** employ decision making techniques and develop awareness of the commercial implications of design management decisions.	• use of the VLE (B1–B5). Assessment strategies and methods (referring to numbered Intended Learning Outcomes): • individual projects (B2, B4); • examinations (B4); • coursework (B1–B5).
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, assess and employ the appropriate advanced analytical models to solve engineering design problems recognising their limitations for particular cases; **C2** independently apply advanced simulation tools to analyse complex engineering design problems; **C3** use highly specialised manual and/or computer-based methods for engineering communication and presentation; **C4** apply and critically evaluate various management techniques to ensure efficient operation of a team; **C5** diagnose the causes of the different types of service failure, through the application of appropriate engineering analysis methods, and the ability to propose methods of avoiding them in future; **C6** use workshop-based material processing tools and machines, safely and effectively; **C7** use modern engineering technologies and tools to establish innovative non-routine engineering solutions and adapt engineering designs.	Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes): • individual projects (C1-C3, C6, C7); • practical tutorials (C1-C3, C5); • seminars (C4); • group exercises (C4); • use of the VLE (C1–C7). Assessment strategies and methods (referring to numbered Intended Learning Outcomes): • individual projects (C1-C3, C6, C7); • coursework (C1–C7).
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;	Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes): • lectures (D1); • individual projects (D1, D3-D7); • practical tutorials (D3);

D4 identify and work towards targets for personal, career, and academic development; **D5** be independent and reflective learners; **D6** gather, select, and analyse a range of experimental and fieldwork data and present professionally using appropriate media; **D7** distil, synthesise and critically analyse alternative approaches and methodologies to problems and research results reported in literature and elsewhere.	• seminars (D1); • group exercises (D1, D2); • use of the VLE (D1 – D7). Assessment strategies and methods (referring to numbered Intended Learning Outcomes): • individual projects (D1, D3-D7); • coursework (D1–D7).

LEVEL 7 INTENDED LEVEL OUTCOMES

A: Knowledge and understanding This level provides opportunities for students to develop and demonstrate knowledge and understanding of*:*	The following learning and teaching and assessment strategies and methods enable students to achieve and to demonstrate the level learning outcomes:
A1 systematic engineering design processes, involving analysing and solving engineering problems; **A2** the selection and application of different techniques used in the management and control of projects, with special emphasis on project teams; **A3** have a critical understanding of the mechanisms of common static and dynamic failures in emerging, metallic, polymeric and ceramic materials, when under load and/or due to corrosion and other environmental effects; **A4** the performance of systems and components through the use of analytical methods and computational modelling techniques; **A5** life cycle assessment and influencing sustainable development within the design process; **A6** total quality and quality systems in the design and manufacture of products.	Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes): • independent research (for project) (A2, A4); • lectures (A1-A6); • seminars (A1–A6); • practical tutorials (A3, A4, A5); • directed reading (A2, A6); • use of the VLE (A1-A6). Assessment strategies and methods (referring to numbered Intended Learning Outcomes): • individual project (A1, A2, A6); • coursework (A1–A6).

B: Intellectual skills This level provides opportunities for students to:	The following learning and teaching and assessment strategies and methods enable students to achieve and to demonstrate the level learning outcomes:
B1 develop analytical thinking in respect of part and assembly design for simulation studies; **B2** evaluate critically current research and advanced scholarship to formulate, plan, execute and report on a project involving scientific knowledge and skills, and original engineering design in a structured and disciplined manner; **B3** critically reflect upon interpersonal skills required to operate in a team environment as a professional engineer; **B4** plan and implement engineering design projects individually and in a group; **B5** employ decision making techniques and develop awareness of the commercial implications of design management decisions; **B6** quantify the environmental impact of a product/system through Life Cycle Analysis techniques.	• independent research (for project) (B1- B5); • lectures (B1, B4); • group exercises (B3, B4, B6); • practical tutorials (B1, B6); • directed reading (B2); • use of the VLE (B1-B6). Assessment strategies and methods (referring to numbered Intended Learning Outcomes): • individual project (B1-B6); • coursework (B1–B6).
C: Practical skills This level provides opportunities for students to:	The following learning and teaching and assessment strategies and methods enable students to achieve and to demonstrate the level learning outcomes:
C1 extract and evaluate pertinent data and to apply computational engineering analysis techniques in the solution of unfamiliar problems; **C2** independently apply computational methods, using alternative approaches and understanding their limitations, in order to solve engineering problems; **C3** apply and critically evaluate various management techniques to ensure efficient operation of a team; **C4** diagnose the causes of the different types of service failure, through the application of appropriate engineering analysis methods, and the ability to propose methods of avoiding them in future; **C5** be able to apply typical product/service lifecycle scenarios to a project at the initial concept stage.	Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes): • individual project (C1, C3); • practical tutorials (C2, C4, C5); • seminars (C3); • group exercises (C3); • use of the VLE (C1–C5). Assessment strategies and methods (referring to numbered Intended Learning Outcomes): • individual project (C1,C3); • coursework (C1–C5).

<table>
<tr><td>D: Transferable skills

This level 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 level learning outcomes:</td></tr>
<tr><td rowspan="2">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;

D6 gather, select, and analyse a range of experimental and fieldwork data and present professionally using appropriate media;

D7 distil, synthesise and critically analyse alternative approaches and methodologies to problems and research results reported in literature and elsewhere.</td><td>Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes):

• lectures (D1);
• individual project (D1, D3-D7);
• practical tutorials (D3);
• seminars (D1);
• group exercises (D1, D2);
• use of the VLE (D1 – D7).</td></tr>
<tr><td>Assessment strategies and methods (referring to numbered Intended Learning Outcomes):

• individual project (D1, D3-D7);
• coursework (D1–D7).</td></tr>
</table>

LEVEL 6/BEng (Hons) Engineering (Mechanical Design)/ LEVEL 5/FdEng Engineering (Mechanical Design)/ LEVEL4/HNC Engineering (Mechanical Design) INTENDED LEVEL OUTCOMES

See Appendix A

LEVEL 6/BEng Engineering (Electronic Design)/ LEVEL 5/FdEng Engineering (Electronic Design)/ LEVEL 4/HNC Engineering (Electronic Design) INTENDED LEVEL OUTCOMES

See Appendix B

LEVEL 6/BEng Engineering (Manufacturing Management)/ LEVEL 5/FdEng Engineering (Manufacturing Management)/ LEVEL 4/HNC Engineering (Manufacturing Management) INTENDED LEVEL OUTCOMES

See Appendix C

LEVEL 6/BEng Engineering/ LEVEL 5/FdEng Engineering (Marine Technologies)/ LEVEL 4/HNC Engineering (Marine Technologies) INTENDED LEVEL OUTCOMES

See Appendix D

ADMISSION REGULATIONS

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

All applicants
One A Level at grade C in a relevant subject or
A BTEC National Certificate or National Diploma in Manufacturing or Engineering (Mechanical Design): students should normally have a Merit in Mathematics and/or Mechanical Principles,
UCAS tariff points 32 from one full A Level or equivalent Level 3 qualification in a relevant subject.
For degree apprentice applicants A Level at grade C in a relevant subject 32 UCAS Points or 90+ credits BTEC Engineering (Mechanical Design) 24 UCAS Points
Four GCSEs of at least grade 4/C, to include English and Mathematics or an equivalent qualification
For degree apprentice applicants Five GCSEs at least grade 4/C, to include English and mathematics and a relevant subject.

All applicants
All applicants who are accepted on the Integrated Masters programme will be required to complete the BEng (Hons) Engineering/ BEng (Hons) Engineering (Manufacturing Management)/ BEng (Hons) Engineering(Electronic Design)/ BEng (Hons) Engineering (Mechanical Design) part of the programme with an upper second class or first class profile in order to continue to the final level of the programme.

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

Entry to Level 7

Applicants to Level 7 require an upper second class or first class BEng (Hons) Engineering/ BEng (Hons) Engineering (Manufacturing Management)/ BEng (Hons) Engineering (Electronic Design)/ BEng (Hons) Engineering (Mechanical Design) degree accredited to partial CEng from Bournemouth University. Students returning to study at Level 7 must normally have achieved an upper second or first class degree. Entry for applicants who are no longer registered as BU students will be assessed according to the principles set out in 3P - Recognition of Prior Learning (RPL) and UK Credit Transfer (UKCT): Policy and Procedure.

Students progressing or returning to complete the MEng (Hons) Engineering award must relinquish the lower BEng (Hons) Engineering(including all pathways)/Mechanical Engineering award on successful completion of the MEng (Hons) Engineering/Mechanical Engineering degree.

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

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

Transfer from MEng to BEng (Hons) Engineering

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

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 Integrated Masters Assessment Regulations (https://intranetsp.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:

- Life Cycle Management (Level 7);
- Innovation and Professional Practice (Level 6);
- Mechatronics (Level 6);
- Computational Engineering (Level 6);
- Advanced Engineering (Level 6);
- Business (Level 4).

For those exiting at BEng (level 6) 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 across all levels of the programme, and cannot be applied to individual or group project units, or those in the following list:

- Innovation and Professional Practice (Level 6);
- Mechatronics (Level 6);
- Computational Engineering (Level 6);
- Advanced Engineering (Level 6);
- Business (Level 4).

For those exiting at FdEng (level 5) the regulations for this programme are the University's Standard Foundation Degree Assessment Regulations (https://intranetsp.bournemouth.ac.uk/pandptest/6a-standard-assessment-regulations-foundation.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:

- Business (Level 4).

For those exiting at HNC (level 4) the regulations for this programme are the University's Standard Assessment Regulations for Higher National Programmes (https://intranetsp.bournemouth.ac.uk/pandptest/6a-standard-assessment-regulations-higher-national.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:

- Business (Level 4).

WORK BASED LEARNING (WBL) AND PLACEMENT ELEMENTS

As the part time degree apprentice students are employed in the engineering industry, all units offer informal opportunity for reflection on current practice which may be documented subsequently as evidence of work based learning.

All students, undertake a number of industry related 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.

An assessed Work Based learning unit is incorporated within the FdEng Programme and offers an opportunity for learners to obtain credit for and to reflect upon their learning either formally by way of in-service training courses, or informally on a day-to-day basis in the workplace. Reflective logs are used to facilitate students' learning and encourage the transferability of knowledge between study and the workplace. The unit is 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). The criteria for assessment of the Work Based Learning opportunities can be found in the level 5 Work Based Unit Specification.

All students, undertake an industry related Major Project at level 5 and 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.

Programme Skills Matrix - MEng Engineering

	Units	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	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 7	MEng 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
	Design Management (20)				x		x		x	x	x	x				x				x	x	x	x	x		x
	Life Cycle Management (20)			x	x			x					x	x					x	x	x	x	x	x		
	Model Based Engineering (20)	x	x	x	x			x					x	x	x		x		x	x		x	x	x	x	
	Interdisciplinary Group Project (20)	x				x	x			x		x				x				x	x	x	x	x	x	x
	Robotic Control Design (20)	x		x	x			x			x		x	x	x		x		x	x	x	x		x	x	
	Failure Analysis and Prevention (20)	x	x	x	x			x					x				x			x		x			x	

Programme Skills Matrix – BEng (Hons) Engineering

	Units		Programme Intended Learning Outcomes																								
		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	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
	BEng Project (FL) or EPA BEng Project (FL) (40)	x	x	x	x	x	x	x	x		x		x	x	x			x	x	x		x	x	x	x	x
	Innovation and Professional Practice (FL) (20)			x	x	x				x	x									x	x	x	x	x	x	
	Computational Engineering (FL) (20)	x	x				x		x		x		x	x	x	x			x	x		x		x	x	x
	Mechatronics (FL) (20)	x	x																							
	Manufacturing Operations (FL) (20)	x	x					x			x	x	x			x				x	x	x		x	x	x
	Advanced Stress and Vibration (FL) (20)	x	x				x	x	x		x		x		x	x		x		x		x			x	x

Programme Specification - Section 2

Programme Skills Matrix - BEng (Hons) Engineering (Mechanical Design)

	Units	Programme Intended Learning Outcomes																							
		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	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
	BEng Project (FL) (40) or EPA BEng Project (FL)	x	x	x	x	x	x	x	x		x		x	x	x			x	x	x		x	x	x	x	x
	Innovation & Professional Practice (FL) (20)			x	x	x				x	x									x	x	x	x	x	x	
	Computational Engineering (FL) (20)	x	x				x		x		x		x	x	x	x			x	x		x		x	x	x
	Advanced Stress and Vibration (FL) (20)	x	x				x	x	x		x		x		x	x		x		x		x			x	x

Programme Skills Matrix – FdEng Engineering (Mechanical Design)

	Units	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	C 1	C 2	C 3	C 4	D 1	D 2	D 3	D 4
LEVEL 5	Design Applications	x	x	x		x	x	x	x	x	x	x		x		x		x	x	
	Major Project	x	x	x	x	x	x	x	x	x	x	x		x		x		x	x	
	Mechanical Design Applications	x	x				x	x					x		x			x		
	The Engineering Professional				x	x					x						x	x	x	x
	Work Based Unit	x	x	x	x	x	x	x	x	x	x	x		x		x	x	x	x	x

Programme Skills Matrix – HNC Engineering (Mechanical Design)

	Units	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	C 1	C 2	C 3	C 4	D 1	D 2	D 3	D 4
LEVEL 4	Analytical Methods for Design	x	x					x												
	Business				x	x					x	x				x	x	x	x	x
	Computer Aided Engineering			x		x	x		x					x		x		x	x	x
	Design Principles	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	Mechanical Design Principles	x	x	x				x		x			x		x				x	x
	Project	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

Programme Skills Matrix – BEng (Hons) Engineering (Electronic Design)

	Units	Programme Intended Learning Outcomes																								
		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**	**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
	BEng Project (FL) or EPA BEng Project (FL) (40)	x	x	X	x	x	x	x	x		x		x	x	x			x	x	x		x	x	x	x	x
	Innovation and Professional Practice (FL) (20)			X	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

Programme Skills Matrix – FdEng Engineering (Electronic Design)

	Units	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**	**C 1**	**C 2**	**C 3**	**C 4**	**D 1**	**D 2**	**D 3**	**D 4**
LEVEL 5	Applied Software in Engineering	x	x	x		x	x	x	x	x		x	x	x	x					
	Electronic Design Applications	x	x	x		x	x	x	x	x		x	x	x	x					
	Major Project	x	x	x	x	x	x	x	x	x	x	x		x		x		x	x	
	The Engineering Professional				x	x					x						x	x	x	x
	Work Based Unit	x	x	x	x	x	x	x	x	x	x	x		x		x	x	x	x	x

Programme Skills Matrix – HNC Engineering (Electronic Design)

	Units	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**	**C 1**	**C 2**	**C 3**	**C 4**	**D 1**	**D 2**	**D 3**	**D 4**
LEVEL 4	Analytical Methods for Design	x	x					x												
	Business				x	x					x	x				x	x	x	x	x
	Circuit Analysis and Fault Location Techniques	x	x	x		x		x	x	x		x	x	x	x		x			
	Software Design Principles	x	x	x			x		x				x		x		x			
	Electronic Systems Design	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x			
	Project	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

Programme Skills Matrix – BEng (Hons) Engineering (Manufacturing Management)

	Units	Programme Intended Learning Outcomes																								
		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**	**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
	BEng Project (FL) or EPA BEng Project (FL) (40)	x	x	x	x	x	x	x	x		x		x	x	x			x	x	x		x	x	x	x	x
	Innovation and Professional Practice (FL) (20)			x	x	x				x	x									x	x	x	x	x	x	
	Computational Engineering (FL) (20)	x	x				x		x		x		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

Programme Skills Matrix – FdEng Engineering (Manufacturing Management)

	Units	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**	**C 1**	**C 2**	**C 3**	**C 4**	**D 1**	**D 2**	**D 3**	**D 4**
LEVEL 5	Industrial Robotics			x	x		x		x		x		x		x		x			
	Major Project	x	x	x	x	x	x	x	x	x	x	x		x		x		x	x	
	Quality Management	x	x		x	x	x	x		x	x				x					
	The Engineering Professional				x	x					x						x	x	x	x
	Work Based Unit	x	x	x	x	x	x	x	x	x	x	x		x		x	x	x	x	x

Programme Skills Matrix - HNC Engineering (Manufacturing Management)

	Units	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**	**C 1**	**C 2**	**C 3**	**C 4**	**D 1**	**D 2**	**D 3**	**D 4**
LEVEL 4	Analytical Methods for Manufacturing	x	x					x												
	Business				x	x					x	x				x	x	x	x	x
	Computer Aided Engineering			x		x	x		x					x		x		x	x	x
	Manufacturing Processes	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			
	Project	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	Supply Chain Management	x	x			x	x	x		x	x	x			x	x	x			

Programme Skills Matrix – FdEng Engineering (Marine Technologies)

	Units	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	C 1	C 2	C 3	C 4	D 1	D 2	D 3	D 4
LEVEL 5	Marine Auxiliary Systems	x	x	x		x	x	x	x	x		x	x	x	x			x	x	
	Major Project	x	x	x	x	x	x	x	x	x	x	x		x		x		x	x	
	Quality Management	x	x		x	x	x	x		x	x				x					
	The Engineering Professional				x	x					x						x	x	x	x
	Work Based Unit	x	x	x	x	x	x	x	x	x	x	x		x		x	x	x	x	x

Programme Skills Matrix - HNC Engineering (Marine Technologies)

	Units	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	C 1	C 2	C 3	C 4	D 1	D 2	D 3	D 4
LEVEL 4	Analytical Methods for Manufacturing	x	x					x												
	Business				x	x					x	x				x	x	x	x	x
	Marine Electrical and Electronic Principles	x	x	x	x	x	x	x	x	x			x	x		x	x			
	Mechanical Design Principles	x	x	x				x		x			x		x				x	x
	Project	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	Supply Chain Management	x	x			x	x	x		x	x	x			x	x	x			

Appendix A

Level 6/BEng Engineering (Mechanical Design) INTENDED LEVEL OUTCOMES

A: Subject knowledge and understanding This programme provides opportunities for students to develop and demonstrate knowledge and understanding of*:*	The following learning and teaching and assessment strategies and methods enable students to achieve and to demonstrate the programme learning outcomes:
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. **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.	Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes): • independent research (for project) (A1-A5); • lectures (A1-A5); • seminars (A1–A5); • practical tutorials (A2, A4); • directed reading (A1, A4, A5); • use of the VLE (A1-A5). Assessment strategies and methods (referring to numbered Intended Learning Outcomes): • individual project (A1-A5); • examination (A1); • coursework (A1–A5).
B: Intellectual 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 outcomes:
B1 approach and implement 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 complex engineering problems; **B4** plan and implement mechanical engineering design projects individually and in a group; **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.	Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes): • independent research (for project) (B1-B3, B5); • group exercises (B2, B4); • practical tutorials (B6); • directed reading (B2, B6); • use of the VLE (B1-B6). Assessment strategies and methods (referring to numbered Intended Learning Outcomes): • individual project (B1-B3, B5); • examination (B2); • coursework (B1–B6).

<table>
<tr><td>C: Practical 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 learning outcomes:</td></tr>
<tr><td rowspan="2">C1 identify, understand and employ the appropriate analytical models to solve complex engineering design 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 engineering 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 engineering solutions and adapt engineering designs.</td><td>Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes):

• individual project (C1-C3, C6-C7);

• practical tutorials (C2, C3, C6);

• seminars (C4);

• use of the VLE (C1-C7).</td></tr>
<tr><td>Assessment strategies and methods (referring to numbered Intended Learning Outcomes):

• individual project (C1-C3, C6-C7);

• coursework (C1–C7);

• examination (C1).</td></tr>
<tr><td>D: Transferable 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 learning outcomes:</td></tr>
<tr><td rowspan="2">D1 communicate effectively and confidently by oral, written and visual means to technical and non-technical audiences;

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;

D6 use IT including the Web, spreadsheets, presentation and word processing;

D7 solve numerical and statistical problems using appropriate techniques.</td><td>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).</td></tr>
<tr><td>Assessment strategies and methods (referring to numbered Intended Learning Outcomes):

• individual projects (D1, D3-D7);

• examination (D7);

• coursework (D1–D7).</td></tr>
</table>

LEVEL 5/FdEng Engineering (Mechanical Design) INTENDED LEVEL OUTCOMES

A: Knowledge and understanding This programme provides opportunities for students to develop and demonstrate knowledge and understanding of*:*	The following learning and teaching and assessment strategies and methods enable students to achieve and to demonstrate the level learning outcomes:
A1 Routine and non-routine design problems and appropriate mathematical skills **A2** Wide range of scientific theories appropriate to design **A3** ITC relevant to advanced engineering design **A4** Professional and ethical responsibilities **A5** Regulatory framework for safe engineering practice **A6** Design techniques for the solution of routine and non-routine problems in the engineering context	Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes): • lectures (A1-A2, A4-A6); • seminars (A1-A6); • directed reading (A2-A6); • use of the VLE (A1-A2, A4, A6); • project (A1-A6). Assessment strategies and methods (referring to numbered Intended Learning Outcomes): • individual reports (A1-4, A6); • group reports (A1-A6); • professional review (A1-A6); • unseen in-class tests (A1-A2).
B: Intellectual 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 level learning outcomes:
B1 Use mathematical and scientific techniques in the analysis of routine and non-routine engineering design problems with minimal guidance **B2** Use computer based techniques in the analysis of routine and non-routine engineering design problems with minimal guidance **B3** Analyse routine and non-routine engineering design problems at system, process and component level with minimal guidance **B4** Analyse routine and non-routine engineering design problems relating to balancing of cost, benefit and aesthetics with minimal guidance **B5** Develop new processes or products through the synthesis of ideas and data gathered from a wide range of sources	Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes): • lectures (B1, B3-B4); • seminars (B1-B5); • directed reading (B4-B5); • use of the VLE (B1, B3); • project (B1-B5). Assessment strategies and methods (referring to numbered Intended Learning Outcomes): • individual reports (B1-B5); • group reports (B1-B5); • professional review (B1-B4); • unseen in-class tests (B1, B3).

<table>
<tr><td>C: Practical 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 level learning outcomes:</td></tr>
<tr><td rowspan="2">C1 Use appropriate test and measurement equipment for experimental laboratory investigation with minimal guidance

C2 Use engineering CAD, CAM and RM software to aid engineering design with minimal guidance

C3 Analyse experimental methods to evaluate the performance of engineering products or systems with minimal guidance

C4 Plan, schedule and execute routine and non-routine projects within an engineering context with minimal guidance</td><td>Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes):

• lectures (C3-C4);

• seminars (C1-C4);

• use of the VLE (C4);

• project (C1-C4).</td></tr>
<tr><td>Assessment strategies and methods (referring to numbered Intended Learning Outcomes):

• individual reports (C1-C4);

• group reports (C2, C4);

• professional review (C1-C4).</td></tr>
<tr><td>D: Transferable 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 level learning outcomes:</td></tr>
<tr><td rowspan="2">D1 Operate effectively in commerce or industry in a wide range of different situations with minimal guidance

D2 Analyse the outcomes of actions taken and reflect upon their effects with minimal guidance

D3 Communicate effectively through report writing, presentation and debate

D4 Take leadership roles within teams and/or projects in both education and in the workplace</td><td>Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes):

• lectures (D1-D3);

• seminars (D1-D4);

• use of the VLE (D2-D3);

• project (D1-D4).</td></tr>
<tr><td>Assessment strategies and methods (referring to numbered Intended Learning Outcomes):

• individual reports (D1-D4);

• group reports (D2-D4);

• professional review (D1-D4).</td></tr>
</table>

LEVEL 4/HNC Engineering (Mechanical Design) INTENDED LEVEL OUTCOMES

A: Knowledge and understanding This programme provides opportunities for students to develop and demonstrate knowledge and understanding of*:*	The following learning and teaching and assessment strategies and methods enable students to achieve and to demonstrate the level learning outcomes:
A1 Routine design problems and appropriate mathematical skills **A2** Major scientific theories appropriate to design **A3** ITC relevant to engineering design **A4** Professional and ethical responsibilities **A5** Regulatory framework for safe engineering practice **A6** Design techniques in the engineering context	Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes): • lectures (A1-A6); • seminars (A1-A6); • directed reading (A2, A4-A6); • use of the VLE (A1-A2, A4, A6); • project (A1-A6).
	Assessment strategies and methods (referring to numbered Intended Learning Outcomes): • individual reports (A1-4, A6); • group reports (A1-A6); • laboratory reports (A1-A2); • unseen in-class tests (A1-A2).
B: Intellectual 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 level learning outcomes:
B1 Use mathematical and scientific techniques in the analysis of routine engineering design problems with guidance **B2** Use computer based techniques in the analysis of routine engineering design problems with guidance **B3** Analyse routine engineering design problems at system, process and component level with guidance **B4** Analyse routine engineering design problems relating to balancing of cost, benefit and aesthetics with guidance **B5** Develop new processes or products through the synthesis of ideas and data gathered from a limited range of sources with guidance	Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes): • lectures (B1-B4); • seminars (B1-B5); • directed reading (B4); • use of the VLE (B1, B3); • project (B1-B5).
	Assessment strategies and methods (referring to numbered Intended Learning Outcomes): • individual reports (B1-B5); • group reports (B1-B5); • laboratory reports (B1-B3); • unseen in-class tests (B1, B3).

<table>
<tr><td>C: Practical 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 level learning outcomes:</td></tr>
<tr><td rowspan="2">C1 Use appropriate test and measurement equipment for experimental laboratory investigation with guidance

C2 Use engineering CAD, CAM and RM software to aid engineering design with guidance

C3 Apply experimental methods to evaluate the performance of engineering products or systems with guidance

C4 Plan, schedule and execute routine projects within an engineering context with guidance</td><td>Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes):

• lectures (C1-C4);
• seminars (C1-C4);
• use of the VLE (C4);
• project (C2-C4).</td></tr>
<tr><td>Assessment strategies and methods (referring to numbered Intended Learning Outcomes):

• individual reports (C1-C4);
• group reports (C2, C4);
• laboratory reports (C1).</td></tr>
<tr><td>D: Transferable 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 level learning outcomes:</td></tr>
<tr><td rowspan="2">D1 Operate effectively in commerce or industry in a limited range of different situations with guidance

D2 Analyse the outcomes of actions taken and reflect upon their effects with guidance

D3 Communicate through report writing, presentation and debate

D4 Function as part of a team and lead teams where appropriate in either a work or education based environment</td><td>Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes):

• lectures (D1, D3);
• seminars (D1-D4);
• use of the VLE (D3);
• project (D1-D4).</td></tr>
<tr><td>Assessment strategies and methods (referring to numbered Intended Learning Outcomes):

• individual reports (D1-D4);
• group reports (D2-D4);
• laboratory reports (D3-D4).</td></tr>
</table>

Appendix B
LEVEL 6/BEng Engineering (Electronic Design) INTENDED LEVEL OUTCOMES

A: Subject knowledge and understanding This programme provides opportunities for students to develop and demonstrate knowledge and understanding of*:*	The following learning and teaching and assessment strategies and methods enable students to achieve and to demonstrate the programme learning outcomes:
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; **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.	Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes): • independent research (for project) (A1-A4); • lectures (A1-A5); • seminars (A1–A5); • practical tutorials (A2, A5); • directed reading (A1, A4); • use of the VLE (A1-A5). Assessment strategies and methods (referring to numbered Intended Learning Outcomes): • individual project (A1-A4); • examinations (A1, A2, A5); • coursework (A1–A5).
B: Intellectual 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 outcomes:
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 complex electronic design engineering problems; **B4** plan and implement electronic design engineering projects individually and in a group; **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.	Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes): • independent research (for project) (B1-B3, B5); • group exercises (B2, B4); • practical tutorials (B6); • directed reading (B2, B6); • use of the VLE (B1-B6). Assessment strategies and methods (referring to numbered Intended Learning Outcomes): • individual project (B1-B3, B5); • examinations (B2); • coursework (B1–B6).

<table>
<tr><td>C: Practical 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 learning outcomes:</td></tr>
<tr><td rowspan="2">C1 identify, understand and employ the appropriate analytical models to solve complex 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.</td><td>Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes):

• individual project (C1-C3, C6-C7);

• practical tutorials (C2, C3, C6);

• seminars (C4);

• use of the VLE (C1-C7).</td></tr>
<tr><td>Assessment strategies and methods (referring to numbered Intended Learning Outcomes):

• individual project (C1-C3, C6-C7);

• coursework (C1–C7).

• Exam (C1, C3, C6)</td></tr>
<tr><td>D: Transferable 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 learning outcomes:</td></tr>
<tr><td rowspan="2">D1 communicate effectively and confidently by oral, written and visual means to technical and non-technical audiences;

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;

D6 use IT including the Web, spreadsheets, presentation and word processing;

D7 solve numerical and statistical problems using appropriate techniques.</td><td>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).</td></tr>
<tr><td>Assessment strategies and methods (referring to numbered Intended Learning Outcomes):

• individual projects (D1, D3-D7);

• examination (D1, D7);

• coursework (D1–D7).</td></tr>
</table>

LEVEL 5/FdEng Engineering (Electronic Design) INTENDED LEVEL OUTCOMES

A: Knowledge and understanding This programme provides opportunities for students to develop and demonstrate knowledge and understanding of*:*	The following learning and teaching and assessment strategies and methods enable students to achieve and to demonstrate the level learning outcomes:
A1 Routine and non-routine design problems and appropriate mathematical skills **A2** Wide range of scientific theories appropriate to design **A3** ITC relevant to advanced engineering design **A4** Professional and ethical responsibilities **A5** Regulatory framework for safe engineering practice **A6** Design techniques for the solution of routine and non-routine problems in the engineering context	Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes): • lectures (A1-A2, A4-A6); • seminars (A1-A6); • directed reading (A3-A6); • use of the VLE (A1-A2, A4, A6); • project (A1-A6). Assessment strategies and methods (referring to numbered Intended Learning Outcomes): • individual reports (A1-4, A6); • group reports (A1-A6); • professional review (A1-A6); • unseen in-class tests (A1-A2).
B: Intellectual 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 level learning outcomes:
B1 Use mathematical and scientific techniques in the analysis of routine and non-routine engineering design problems with minimal guidance **B2** Use computer based techniques in the analysis of routine and non-routine engineering design problems with minimal guidance **B3** Analyse routine and non-routine engineering design problems at system, process and component level with minimal guidance **B4** Analyse routine and non-routine engineering design problems relating to balancing of cost, benefit and aesthetics with minimal guidance **B5** Develop new processes or products through the synthesis of ideas and data gathered from a wide range of sources	Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes): • lectures (B1-B5); • seminars (B1-B5); • directed reading (B4-B5); • use of the VLE (B1-B3); • project (B1-B5). Assessment strategies and methods (referring to numbered Intended Learning Outcomes): • individual reports (B1-B5); • group reports (B1-B5); • professional review (B1-B4); • unseen in-class tests (B1, B3).

<table>
<tr><td>C: Practical 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 level learning outcomes:</td></tr>
<tr><td rowspan="2">C1 Use appropriate test and measurement equipment for experimental laboratory investigation with minimal guidance

C2 Use engineering CAD, CAM and RM software to aid engineering design with minimal guidance

C3 Analyse experimental methods to evaluate the performance of engineering products or systems with minimal guidance

C4 Plan, schedule and execute routine and non-routine projects within an engineering context with minimal guidance</td><td>Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes):

• lectures (C1-C4);

• seminars (C1-C4);

• use of the VLE (C4);

• project (C1-C4).</td></tr>
<tr><td>Assessment strategies and methods (referring to numbered Intended Learning Outcomes):

• individual reports (C1-C4);

• group reports (C2, C4);

• professional review (C1-C4).</td></tr>
<tr><td>D: Transferable 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 level learning outcomes:</td></tr>
<tr><td rowspan="2">D1 Operate effectively in commerce or industry in a wide range of different situations with minimal guidance

D2 Analyse the outcomes of actions taken and reflect upon their effects with minimal guidance

D3 Communicate effectively through report writing, presentation and debate

D4 Take leadership roles within teams and/or projects in both education and in the workplace</td><td>Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes):

• lectures (D1-D3);

• seminars (D1-D4);

• use of the VLE (D2-D3);

• project (D1-D4).</td></tr>
<tr><td>Assessment strategies and methods (referring to numbered Intended Learning Outcomes):

• individual reports (D1-D4);

• group reports (D2-D4);

• professional review (D1-D4).</td></tr>
</table>

LEVEL 4/HNC Engineering (Electronic Design) INTENDED LEVEL OUTCOMES

A: Knowledge and understanding This programme provides opportunities for students to develop and demonstrate knowledge and understanding of*:*	The following learning and teaching and assessment strategies and methods enable students to achieve and to demonstrate the level learning outcomes:
A1 Routine design problems and appropriate mathematical skills **A2** Major scientific theories appropriate to design **A3** ITC relevant to engineering design **A4** Professional and ethical responsibilities **A5** Regulatory framework for safe engineering practice **A6** Design techniques in the engineering context	Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes): • lectures (A1-A6); • seminars (A1-A6); • directed reading (A4-A6); • use of the VLE (A1-A4, A6); • project (A1-A6). Assessment strategies and methods (referring to numbered Intended Learning Outcomes): • individual reports (A1-4, A6); • group reports (A1-A6); • laboratory reports (A1-A2); • unseen in-class tests (A1-A2).
B: Intellectual 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 level learning outcomes:
B1 Use mathematical and scientific techniques in the analysis of routine engineering design problems with guidance **B2** Use computer based techniques in the analysis of routine engineering design problems with guidance **B3** Analyse routine engineering design problems at system, process and component level with guidance **B4** Analyse routine engineering design problems relating to balancing of cost, benefit and aesthetics with guidance **B5** Develop new processes or products through the synthesis of ideas and data gathered from a limited range of sources with guidance	Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes): • lectures (B1-B4); • seminars (B1-B5); • directed reading (B4); • use of the VLE (B1-B3); • project (B1-B5). Assessment strategies and methods (referring to numbered Intended Learning Outcomes): • individual reports (B1-B5); • group reports (B1-B5); • laboratory reports (B1-B3); • unseen in-class tests (B1, B3).

<table>
<tr><td>C: Practical 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 level learning outcomes:</td></tr>
<tr><td rowspan="2">C1 Use appropriate test and measurement equipment for experimental laboratory investigation with guidance

C2 Use engineering CAD, CAM and RM software to aid engineering design with guidance

C3 Apply experimental methods to evaluate the performance of engineering products or systems with guidance

C4 Plan, schedule and execute routine projects within an engineering context with guidance</td><td>Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes):

• lectures (C1-C4);
• seminars (C1-C4);
• use of the VLE (C4);
• project (C1-C4).</td></tr>
<tr><td>Assessment strategies and methods (referring to numbered Intended Learning Outcomes):

• individual reports (C1-C4);
• group reports (C2, C4);
• laboratory reports (C1-C2).</td></tr>
<tr><td>D: Transferable 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 level learning outcomes:</td></tr>
<tr><td rowspan="2">D1 Operate effectively in commerce or industry in a limited range of different situations with guidance

D2 Analyse the outcomes of actions taken and reflect upon their effects with guidance

D3 Communicate through report writing, presentation and debate

D4 Function as part of a team and lead teams where appropriate in either a work or education based environment</td><td>Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes):

• lectures (D1, D3);
• seminars (D1-D4);
• use of the VLE (D3);
• project (D1-D4).</td></tr>
<tr><td>Assessment strategies and methods (referring to numbered Intended Learning Outcomes):

• individual reports (D1-D4);
• group reports (D1-D4);
• laboratory reports (D3-D4).</td></tr>
</table>

Appendix C
LEVEL 6/BEng Engineering (Manufacturing Management) INTENDED LEVEL OUTCOMES

A: Subject knowledge and understanding This programme provides opportunities for students to develop and demonstrate knowledge and understanding of*:*	The following learning and teaching and assessment strategies and methods enable students to achieve and to demonstrate the programme learning outcomes:
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; **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.	Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes): • independent research (for project) (A1-A4); • lectures (A1-A5); • seminars (A1–A5); • practical tutorials (A2, A5); • directed reading (A1, A4); • use of the VLE (A1-A5). Assessment strategies and methods (referring to numbered Intended Learning Outcomes): • individual project (A1-A4); • coursework (A1–A5).
B: Intellectual 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 outcomes:
B1 approach and implement 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 complex engineering problems; **B4** plan and implement manufacturing engineering projects individually and in a group; **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.	Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes): • independent research (for project) (B1-B3, B5); • group exercises (B2, B4); • practical tutorials (B6); • directed reading (B2, B6); • use of the VLE (B1-B6). Assessment strategies and methods (referring to numbered Intended Learning Outcomes): • individual project (B1-B3, B5); • coursework (B1–B6).

<table>
<tr><td>C: Practical 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 learning outcomes:</td></tr>
<tr><td rowspan="2">C1 identify, understand and employ the appropriate analytical models to solve complex 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 engineering 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 engineering solutions and adapt engineering designs.</td><td>Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes):

• individual project (C1-C3, C6-C7);

• practical tutorials (C2, C3, C6);

• seminars (C4);

• use of the VLE (C1-C7).</td></tr>
<tr><td>Assessment strategies and methods (referring to numbered Intended Learning Outcomes):

• individual project (C1-C3, C6-C7);

• coursework (C1–C7).</td></tr>
<tr><td>D: Transferable 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 learning outcomes:</td></tr>
<tr><td rowspan="2">D1 communicate effectively and confidently by oral, written and visual means to technical and non-technical audiences;

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;

D6 use IT including the Web, spreadsheets, presentation and word processing;

D7 solve numerical and statistical problems using appropriate techniques.</td><td>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).</td></tr>
<tr><td>Assessment strategies and methods (referring to numbered Intended Learning Outcomes):

• individual projects (D1, D3-D7);

• coursework (D1–D7).</td></tr>
</table>

LEVEL 5/FdEng Engineering (Manufacturing Management) INTENDED LEVEL OUTCOMES

<table>
<tr><td>A: 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 level learning outcomes:</td></tr>
<tr><td rowspan="2">A1 Routine and non-routine manufacturing and manufacturing management problems and appropriate mathematical skills

A2 Wide range of scientific theories appropriate to manufacturing

A3 ITC relevant to advanced manufacturing and manufacturing management

A4 Professional and ethical responsibilities

A5 Regulatory framework for safe engineering practice

A6 Manufacturing and manufacturing management techniques for the solution of routine and non-routine problems in the engineering context</td><td>Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes):

• lectures (A1-A6);
• seminars (A1-A6);
• directed reading (A2-A6);
• use of the VLE (A1-A2, A4, A6);
• project (A1-A6).</td></tr>
<tr><td>Assessment strategies and methods (referring to numbered Intended Learning Outcomes):

• individual reports (A1-4, A6);
• group reports (A1-A6);
• professional review (A1-A6);
• unseen in-class tests (A1-A2).</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 level learning outcomes:</td></tr>
<tr><td rowspan="2">B1 Use mathematical and scientific techniques in the analysis of routine and non-routine manufacturing and manufacturing management problems with minimal guidance

B2 Use computer based techniques in the analysis of routine and non-routine manufacturing and manufacturing management problems with minimal guidance

B3 Analyse routine and non-routine manufacturing and manufacturing management problems at system, process and component level with minimal guidance

B4 Analyse routine and non-routine manufacturing and manufacturing management problems relating to balancing of cost, benefit and aesthetics with minimal guidance

B5 Develop new processes or products through the synthesis of ideas and data gathered from a wide range of sources</td><td>Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes):

• lectures (B1, B3-B4);

• seminars (B1-B5);

• directed reading (B4-B5);

• use of the VLE (B1, B3);

• project (B1-B5).</td></tr>
<tr><td>Assessment strategies and methods (referring to numbered Intended Learning Outcomes):

• individual reports (B1-B5);
• group reports (B1-B5);
• professional review (B1-B4);
• unseen in-class tests (B1, B3).</td></tr>
</table>

<table>
<tr><td>C: Practical 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 level learning outcomes:</td></tr>
<tr><td rowspan="2">C1 Use appropriate test and measurement equipment for experimental laboratory investigation with minimal guidance

C2 Use engineering CAD, CAM and RM software to aid engineering design with minimal guidance

C3 Analyse experimental methods to evaluate the performance of engineering products or systems with minimal guidance

C4 Plan, schedule and execute routine and non-routine projects within an engineering context with minimal guidance</td><td>Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes):

• lectures (C2-C4);

• seminars (C1-C4);

• use of the VLE (C4);

• project (C1-C4).</td></tr>
<tr><td>Assessment strategies and methods (referring to numbered Intended Learning Outcomes):

• individual reports (C1-C4);

• group reports (C2, C4);

• professional review (C1-C4).</td></tr>
<tr><td>D: Transferable 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 level learning outcomes:</td></tr>
<tr><td rowspan="2">D1 Operate effectively in commerce or industry in a wide range of different situations with minimal guidance

D2 Analyse the outcomes of actions taken and reflect upon their effects with minimal guidance

D3 Communicate effectively through report writing, presentation and debate

D4 Take leadership roles within teams and/or projects in both education and in the workplace</td><td>Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes):

• lectures (D1-D3);

• seminars (D1-D4);

• use of the VLE (D2-D3);

• project (D1-D4).</td></tr>
<tr><td>Assessment strategies and methods (referring to numbered Intended Learning Outcomes):

• individual reports (D1-D4);

• group reports (D2-D4);

• professional review (D1-D4).</td></tr>
</table>

LEVEL 4/HNC Engineering (Manufacturing Management) INTENDED LEVEL OUTCOMES

A: Knowledge and understanding This programme provides opportunities for students to develop and demonstrate knowledge and understanding of*:*	The following learning and teaching and assessment strategies and methods enable students to achieve and to demonstrate the level learning outcomes:
A1 Routine manufacturing and manufacturing management problems and appropriate mathematical skills **A2** Major scientific theories appropriate to manufacturing and manufacturing management **A3** ITC relevant to manufacturing and manufacturing management **A4** Professional and ethical responsibilities **A5** Regulatory framework for safe engineering practice **A6** Manufacturing and manufacturing management techniques in the engineering context	Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes): • lectures (A1-A6); • seminars (A1-A6); • directed reading (A2, A4-A6); • use of the VLE (A1-A2, A4, A6); • project (A1-A6). Assessment strategies and methods (referring to numbered Intended Learning Outcomes): • individual reports (A1-4, A6); • group reports (A1-A6); • laboratory reports (A1-A2); • unseen in-class tests (A1-A2).
B: Intellectual 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 level learning outcomes:
B1 Use mathematical and scientific techniques in the analysis of routine manufacturing and manufacturing management problems with guidance **B2** Use computer based techniques in the analysis of routine manufacturing and manufacturing management problems with guidance **B3** Analyse routine manufacturing and manufacturing management problems at system, process and component level with guidance **B4** Analyse routine manufacturing and manufacturing management problems relating to balancing of cost, benefit and aesthetics with guidance **B5** Develop new processes or products through the synthesis of ideas and data gathered from a limited range of sources with guidance	Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes): • lectures (B1-B4); • seminars (B1-B5); • directed reading (B4); • use of the VLE (B1, B3); • project (B1-B5). Assessment strategies and methods (referring to numbered Intended Learning Outcomes): • individual reports (B1-B5); • group reports (B1-B5); • laboratory reports (B1-B3); • unseen in-class tests (B1, B3).

<table>
<tr><td>C: Practical 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 level learning outcomes:</td></tr>
<tr><td rowspan="2">C1 Use appropriate test and measurement equipment for experimental laboratory investigation with guidance

C2 Use engineering CAD, CAM and RM software to aid engineering manufacturing and manufacturing management with guidance

C3 Apply experimental methods to evaluate the performance of engineering products or systems with guidance

C4 Plan, schedule and execute routine projects within an engineering context with guidance</td><td>Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes):

• lectures (C1-C4);
• seminars (C1-C4);
• use of the VLE (C4);
• project (C2-C4).</td></tr>
<tr><td>Assessment strategies and methods (referring to numbered Intended Learning Outcomes):

• individual reports (C1-C4);
• group reports (C2, C4);
• laboratory reports (C1).</td></tr>
<tr><td>D: Transferable 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 level learning outcomes:</td></tr>
<tr><td rowspan="2">D1 Operate effectively in commerce or industry in a limited range of different situations with guidance

D2 Analyse the outcomes of actions taken and reflect upon their effects with guidance

D3 Communicate through report writing, presentation and debate

D4 Function as part of a team and lead teams where appropriate in either a work or education based environment</td><td>Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes):

• lectures (D1, D3);
• seminars (D1-D4);
• use of the VLE (D3);
• project (D1-D4).</td></tr>
<tr><td>Assessment strategies and methods (referring to numbered Intended Learning Outcomes):

• individual reports (D1-D4);
• group reports (D2-D4);
• laboratory reports (D3-D4).</td></tr>
</table>

Appendix D
LEVEL 6/ BEng Engineering INTENDED LEVEL 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.

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.</td><td>Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes):

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

• lectures (A1-A5);

• seminars (A1–A5);

• practical tutorials (A2, A5);

• directed reading (A1, A4);

• use of the VLE (A1-A5).</td></tr>
<tr><td>Assessment strategies and methods (referring to numbered Intended Learning Outcomes):

• individual project (A1-A4);

• examinations (A1);

• coursework (A1–A5).</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 rowspan="2">B1 approach and implement 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 complex engineering problems;

B4 plan and implement engineering design projects individually and in a group;

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.</td><td>Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes):

• independent research (for project) (B1-B3, B5);

• group exercises (B2, B4);

• practical tutorials (B6);

• directed reading (B2, B6);

• use of the VLE (B1-B6).</td></tr>
<tr><td>Assessment strategies and methods (referring to numbered Intended Learning Outcomes):

• individual project (B1-B3, B5);
• examinations (B2);
• coursework (B1–B6).</td></tr>
</table>

<table>
<tr><td>C: Practical 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 learning outcomes:</td></tr>
<tr><td rowspan="2">C1 identify, understand and employ the appropriate analytical models to solve complex engineering design 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 engineering 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 engineering solutions and adapt engineering designs.</td><td>Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes):

• individual project (C1-C3, C6-C7);

• practical tutorials (C2, C3, C6);

• seminars (C4);

• use of the VLE (C1-C7).</td></tr>
<tr><td>Assessment strategies and methods (referring to numbered Intended Learning Outcomes):

• individual project (C1-C3, C6-C7);

• coursework (C1–C7).</td></tr>
<tr><td>D: Transferable 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 learning outcomes:</td></tr>
<tr><td rowspan="2">D1 communicate effectively and confidently by oral, written and visual means to technical and non-technical audiences;

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;

D6 use IT including the Web, spreadsheets, presentation and word processing;

D7 solve numerical and statistical problems using appropriate techniques.</td><td>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).</td></tr>
<tr><td>Assessment strategies and methods (referring to numbered Intended Learning Outcomes):

• individual projects (D1, D3-D7);

• examination (D7);

• coursework (D1–D7).</td></tr>
</table>

LEVEL 5/FdEng Engineering (Marine Technologies) INTENDED LEVEL OUTCOMES

A: Knowledge and understanding This programme provides opportunities for students to develop and demonstrate knowledge and understanding of*:*	The following learning and teaching and assessment strategies and methods enable students to achieve and to demonstrate the level learning outcomes:
A1 Routine and non-routine marine technological problems and appropriate mathematical skills **A2** Wide range of scientific theories appropriate to marine technologies **A3** ITC relevant to advanced marine technologies **A4** Professional and ethical responsibilities **A5** Regulatory framework for safe engineering practice **A6** Marine techniques for the solution of routine and non-routine problems in the technological context	Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes): • lectures (A1-A6); • seminars (A1-A6); • directed reading (A2-A6); • use of the VLE (A1-A2, A4, A6); • project (A1-A6). Assessment strategies and methods (referring to numbered Intended Learning Outcomes): • individual reports (A1-4, A6); • group reports (A1-A3, A5-6); • professional review (A1-A6); • unseen in-class tests (A1-A2).
B: Intellectual 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 level learning outcomes:
B1 Use mathematical and scientific techniques in the analysis of routine and non-routine marine technological problems with minimal guidance **B2** Use computer based techniques in the analysis of routine and non-routine marine technological problems with minimal guidance **B3** Analyse routine and non-routine marine technological problems at system, process and component level with minimal guidance **B4** Analyse routine and non-routine marine technological problems relating to balancing of cost, benefit and aesthetics with minimal guidance **B5** Develop new processes or products through the synthesis of ideas and data gathered from a wide range of sources	Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes): • lectures (B1-B4); • seminars (B1-B5); • directed reading (B4-B5); • use of the VLE (B1, B3); • project (B1-B5). Assessment strategies and methods (referring to numbered Intended Learning Outcomes): • individual reports (B1-B5); • group reports (B1-B5); • professional review (B1-B4); • unseen in-class tests (B1, B3).

<table>
<tr><td>C: Practical 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 level learning outcomes:</td></tr>
<tr><td rowspan="2">C1 Use appropriate test and measurement equipment for experimental laboratory investigation with minimal guidance

C2 Use engineering CAD, CAM and RM software to aid marine technologies with minimal guidance

C3 Analyse experimental methods to evaluate the performance of marine products or systems with minimal guidance

C4 Plan, schedule and execute routine and non-routine projects within a marine technologies context with minimal guidance</td><td>Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes):

• lectures (C3-C4);
• seminars (C1-C4);
• use of the VLE (C4);
• project (C1-C4).</td></tr>
<tr><td>Assessment strategies and methods (referring to numbered Intended Learning Outcomes):

• individual reports (C1-C4);
• group reports (C1-C2, C4);
• professional review (C1-C4).</td></tr>
<tr><td>D: Transferable 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 level learning outcomes:</td></tr>
<tr><td rowspan="2">D1 Operate effectively in commerce or industry in a wide range of different situations with minimal guidance

D2 Analyse the outcomes of actions taken and reflect upon their effects with minimal guidance

D3 Communicate effectively through report writing, presentation and debate

D4 Take leadership roles within teams and/or projects in both education and in the workplace</td><td>Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes):

• lectures (D1-D3);
• seminars (D1-D4);
• use of the VLE (D2-D3);
• project (D1-D4).</td></tr>
<tr><td>Assessment strategies and methods (referring to numbered Intended Learning Outcomes):

• individual reports (D1-D4);
• group reports (D1-D3);
• professional review (D1-D4).</td></tr>
</table>

LEVEL 4/HNC Engineering (Marine Technologies) INTENDED LEVEL OUTCOMES

A: Knowledge and understanding This programme provides opportunities for students to develop and demonstrate knowledge and understanding of*:*	The following learning and teaching and assessment strategies and methods enable students to achieve and to demonstrate the level learning outcomes:
A1 Routine marine technological problems and appropriate mathematical skills **A2** Major scientific theories appropriate to marine technologies **A3** ITC relevant to marine technologies **A4** Professional and ethical responsibilities **A5** Regulatory framework for safe engineering practice **A6** Marine techniques in the engineering context	Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes): • lectures (A1-A6); • seminars (A1-A6); • directed reading (A2, A4-A6); • use of the VLE (A1-A2, A4, A6); • project (A1-A6). Assessment strategies and methods (referring to numbered Intended Learning Outcomes): • individual reports (A1-A6); • group reports (A1, A3); • laboratory reports (A1-A2); • unseen in-class tests (A1-A2).
B: Intellectual 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 level learning outcomes:
B1 Use mathematical and scientific techniques in the analysis of routine marine technological problems with guidance **B2** Use computer based techniques in the analysis of routine marine technological problems with guidance **B3** Analyse routine marine technological problems at system, process and component level with guidance **B4** Analyse routine marine technological problems relating to balancing of cost, benefit and aesthetics with guidance **B5** Develop new processes or products through the synthesis of ideas and data gathered from a limited range of sources with guidance	Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes): • lectures (B1-B4); • seminars (B1-B5); • directed reading (B4); • use of the VLE (B1, B3); • project (B1-B5). Assessment strategies and methods (referring to numbered Intended Learning Outcomes): • individual reports (B1-B5); • group reports (B1-B5); • laboratory reports (B1-B3); • unseen in-class tests (B1, B3).

<table>
<tr><td>C: Practical 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 level learning outcomes:</td></tr>
<tr><td rowspan="2">C1 Use appropriate test and measurement equipment for experimental laboratory investigation with guidance

C2 Use engineering CAD, CAM and RM software to aid marine technologies with guidance

C3 Apply experimental methods to evaluate the performance of marine products or systems with guidance

C4 Plan, schedule and execute routine projects within a marine technologies context with guidance</td><td>Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes):

• lectures (C1-C4);
• seminars (C1-C4);
• use of the VLE (C4);
• project (C2-C4).</td></tr>
<tr><td>Assessment strategies and methods (referring to numbered Intended Learning Outcomes):

• individual reports (C1-C4);
• group reports (C2, C4);
• laboratory reports (C1).</td></tr>
<tr><td>D: Transferable 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 level learning outcomes:</td></tr>
<tr><td rowspan="2">D1 Operate effectively in commerce or industry in a limited range of different situations with guidance

D2 Analyse the outcomes of actions taken and reflect upon their effects with guidance

D3 Communicate through report writing, presentation and debate

D4 Function as part of a team and lead teams where appropriate in either a work or education based environment</td><td>Learning and teaching strategies and methods (referring to numbered Intended Learning Outcomes):

• lectures (D1, D3);
• seminars (D1-D4);
• use of the VLE (D3);
• project (D1-D4).</td></tr>
<tr><td>Assessment strategies and methods (referring to numbered Intended Learning Outcomes):

• individual reports (D1-D4);
• group reports (D2-D4);
• laboratory reports (D3-D4).</td></tr>
</table>

APPENDIX E

PSRB Mapping: MEng (Hons) Engineering - CEng

Programme Title:	MEng (Hons) Engineering																		
	Module code	Compulsory	Science and Maths	Engineering Analysis			Design and Innovation		The Engineer and Society					Engineering Practice					
			M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16	M17	M18
Total Count	192		18	21	23	12	13	17	7	5	7	2	5	12	14	6	7	10	9	4
Core Count	70		5	3	5	6	4	3	4	5	5	2	4	2	2	3	5	1	7	4
Year 1	*Analytical Methods for Design*	x	X		X															
	Business (and Project Management)	x	X						X	X	X	X	X							
	Project	x		X		X	X	X			X					X	X		X	X
	Computer Aided Engineering				X									X	X			X		
	Design Principles		X	X	X		X	X	X						X			X		
	Mechanical Design Principles		X		X									X	X					
	Supply Chain Management			X					X				X					X		
	Manufacturing Processes		X	X			X	X						X	X					
	Circuit Analysis and Fault Location Techniques		X	X	X			X						X	X					
	Software Design Principles			X	X		X	X										X		
	Electronic Systems Design		X	X	X		X	X						X	X			X		
Year 2	*Major Project*	x		X	X	X	X	X	X	X	X		X				X		X	
	The Engineering Professional	x				X				X									X	X
	Work Based Unit	x	X	X	X			X					X	X	X	X	X	X	X	X
	Design Applications		X	X	X		X	X	X						X			X	X	
	Mechanical Design Applications		X	X	X									X						
	Quality Management			X	X	X		X			X					X				
	Industrial Robotics		X	X	X		X	X			X			X	X			X		
	Applied Software in Engineering			X	X		X	X							X			X		
	Electronic Design Applications		X	X	X		X	X						X	X				X	
Year 3	*Innovation and Professional Practice*	x					X			X	X		X			X	X			
	Advanced Engineering	x	X			X									X				X	
	BEng Project	x	X		X	X	X		X	X	X	X		X			X		X	X
	Adv. Stress & Vibration		X	X	X									X						
	Computational Engineering		X	X	X	X		X												
	Manufacturing Operations														X	X	X			
	Mechatronics			X	X	X		X						X	X			X		
Year 4	*Lifecycle Management (FL)*	x			X	X			X										X	
	Robotic Control Design (FL)		X	X	X	X		X												
	Model Based Engineering (FL)			X	X	X	X	X												
	Failure analysis and prevention (FL)		X	X	X	X														
	Design Management (FL)															X	X			
	Interdisciplinary Group Project (FL)	x											X					X	X	
	MEng Project (FL)	x	X	X	X	X	X										X		X	X

PSRB Mapping: BEng (Hons) Engineering – Partial CEng

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 (Hons) 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	172		16	18	19	8	12	15	6	5	7	2	5	12	14	5	6	10	8	4
Core Count	66		5	3	4	5	4	3	3	5	5	2	4	2	2	3	5	1	6	4
Year 1	*Analytical Methods for Design*	x	X		X															
	Business (and Project Management)	x	X						X	X	X	X	X							
	Project	x		X		X	X	X			X					X	X		X	X
	Computer Aided Engineering				X									X	X			X		
	Design Principles		X	X	X		X	X	X						X			X		
	Mechanical Design Principles		X		X									X	X					
	Supply Chain Management			X					X				X					X		
	Manufacturing Processes		X	X			X	X						X	X					
	Circuit Analysis and Fault Location Techniques		X	X	X			X						X	X					
	Software Design Principles			X	X		X	X										X		
	Electronic Systems Design		X	X	X		X	X						X	X			X		
Year 2	*Major Project*	x		X	X	X	X	X	X	X	X		X				X		X	
	The Engineering Professional	x				X				X									X	X
	Work Based Unit	x	X	X	X			X					X	X	X	X	X	X	X	X
	Design Applications		X	X	X		X	X	X						X			X	X	
	Mechanical Design Applications		X	X	X									X						
	Quality Management			X	X	X		X			X					X				
	Industrial Robotics		X	X	X		X	X			X			X	X			X		
	Applied Software in Engineering			X	X		X	X							X			X		
	Electronic Design Applications		X	X	X		X	X						X	X				X	
Year 3	*Innovation and Professional Practice*	x					X			X	X		X			X	X			
	Advanced Engineering	x	X			X									X				X	
	BEng Project	x	X		X	X	X		X	X	X	X		X			X		X	X
	Adv. Stress & Vibration		X	X	X									X						
	Computational Engineering		X	X	X	X		X												
	Manufacturing Operations														X	X	X			
	Mechatronics			X	X	X		X						X	X			X		

PSRB Mapping: BEng (Hons) Engineering (Mechanical Design) – Partial CEng

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 (Hons) Engineering (Mechanical Design)**																			
	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	104		11	8	11	6	6	6	5	5	5	2	4	6	6	3	5	4	7	4
Core Count	104		11	8	11	6	6	6	5	5	5	2	4	6	6	3	5	4	7	4
Year 1	*Analytical Methods for Design*	x	X		X															
	Business (and Project Management)	x	X						X	X	X	X	X							
	Project	x		X		X	X	X			X					X	X		X	X
	Computer Aided Engineering	x			X									X	X			X		
	Design Principles	x	X	X	X		X	X	X						X			X		
	Mechanical Design Principles	x	X		X									X	X					
Year 2	*Major Project*	x		X	X	X	X	X	X	X	X		X				X		X	
	The Engineering Professional	x				X				X									X	X
	Work Based Unit	x	X	X	X			X					X	X	X	X	X	X	X	X
	Design Applications	x	X	X	X		X	X	X						X			X	X	
	Mechanical Design Applications	x	X	X	X									X						
Year 3	*Innovation and Professional Practice*	x					X			X	X		X			X	X			
	Advanced Engineering	x	X			X									X				X	
	BEng Project	x	X		X	X	X		X	X	X	X		X			X		X	X
	Adv. Stress & Vibration	x	X	X	X									X						
	Computational Engineering	x	X	X	X	X		X												

PSRB Mapping: BEng Engineering (Electronic Design) – Partial CEng

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 (Hons) Engineering (Electronic Design)**																			
	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	107		8	9	10	6	8	9	3	5	5	2	4	6	7	4	6	4	7	4
Core Count	107		8	9	10	6	8	9	3	5	5	2	4	6	7	4	6	4	7	4
Year 1	*Analytical Methods for Design*	x	X		X															
	Business (and Project Management)	x	X						X	X	X	X	X							
	Project	x		X		X	X	X			X					X	X		X	X
	Circuit Analysis and Fault Location Techniques	x	X	X	X			X						X	X					
	Software Design Principles	x		X	X		X	X										X		
	Electronic Systems Design	x	X	X	X		X	X						X	X			X		
Year 2	*Major Project*	x		X	X	X	X	X	X	X	X		X				X		X	
	The Engineering Professional	x				X				X									X	X
	Work Based Unit	x	X	X	X			X					X	X	X	X	X	X	X	X
	Applied Software in Engineering	x		X	X		X	X							X			X		
	Electronic Design Applications	x	X	X	X		X	X						X	X				X	
Year 3	*Innovation and Professional Practice*	x					X			X	X		X			X	X			
	Advanced Engineering	x	X			X									X				X	
	BEng Project	x	X		X	X	X		X	X	X	X		X			X		X	X
	Manufacturing Operations	x													X	X	X			
	Mechatronics	x		X	X	X		X						X						

PSRB Mapping: BEng Engineering (Manufacturing Management) – Partial CEng

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 Engineering (Hons) (Manufacturing Management)																			
	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	103		8	8	8	7	6	7	4	5	7	2	5	5	6	5	6	4	6	4
Core Count	103		8	8	8	7	6	7	4	5	7	2	5	5	6	5	6	4	6	4
Year 1	*Analytical Methods for Manufacturing*	x	X		X															
	Business (and Project Management)	x	X						X	X	X	X	X							
	Project	x		X		X	X	X			X					X	X		X	X
	Computer Aided Engineering	x			X									X	X			X		
	Supply Chain Management	x		X					X				X					X		
	Manufacturing Processes	x	X	X			X	X						X	X					
Year 2	*Major Project*	x		X	X	X	X	X	X	X	X		X				X		X	
	The Engineering Professional	x				X				X									X	X
	Work Based Unit	x	X	X	X			X					X	X	X	X	X	X	X	X
	Quality Management	x		X	X	X		X			X					X				
	Industrial Robotics	x	X	X	X		X	X			X			X	X			X		
Year 3	*Innovation and Professional Practice*	x					X			X	X		X			X	X			
	Advanced Engineering	x	X			X									X				X	
	BEng Project	x	X		X	X	X		X	X	X	X		X			X		X	X
	Computational Engineering	x	X	X	X	X		X												
	Manufacturing Operations	x													X	X	X			

PSRB Mapping: BEng (Hons) Engineering – IEng

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 (Hons) Engineering																			
	Module code	Compulsory	Science and Maths	Engineering Analysis			Design and Innovation		The Engineer and Society					Engineering Practice						
			B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17	B18
Total Count	172		16	18	19	8	12	15	6	5	7	2	5	12	14	5	6	10	8	4
Core Count	66		5	3	4	5	4	3	3	5	5	2	4	2	2	3	5	1	6	4
Year 1	*Analytical Methods for Design*	x	X		X															
	Business (and Project Management)	x	X						X	X	X	X	X							
	Project	x		X		X	X	X			X					X	X		X	X
	Computer Aided Engineering				X									X	X			X		
	Design Principles		X	X	X		X	X	X						X			X		
	Mechanical Design Principles		X		X									X	X					
	Supply Chain Management			X					X				X					X		
	Manufacturing Processes		X	X			X	X						X	X					
	Circuit Analysis and Fault Location Techniques		X	X	X			X						X	X					
	Computer and Internet Technologies			X	X		X	X										X		
	Electronic Systems Design		X	X	X		X	X						X	X			X		
Year 2	*Major Project*	x		X	X	X	X	X	X	X	X		X				X		X	
	The Engineering Professional	x				X				X									X	X
	Work Based Unit	x	X	X	X			X					X	X	X	X	X	X	X	X
	Design Applications		X	X	X		X	X	X						X			X	X	
	Mechanical Design Applications		X	X	X									X						
	Quality Management			X	X	X		X			X					X				
	Industrial Robotics		X	X	X		X	X			X			X	X			X		
	Applied Software in Engineering			X	X		X	X							X			X		
	Electronic Design Applications		X	X	X		X	X						X	X				X	
Year 3	*Innovation and Professional Practice*	x					X			X	X		X			X	X			
	Advanced Engineering	x	X			X									X				X	
	BEng Project	x	X		X	X	X		X	X	X	X		X			X		X	X
	Adv. Stress & Vibration		X	X	X									X						
	Computational Engineering		X	X	X	X		X												
	Manufacturing Operations														X	X	X			
	Mechatronics			X	X	X		X						X	X			X		

PSRB Mapping: BEng (Hons) Engineering (Mechanical Design) – IEng

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 (Hons) Engineering (Mechanical Design)																			
	Module code	Compulsory	Science and Maths	Engineering Analysis			Design and Innovation		The Engineer and Society					Engineering Practice						
			B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17	B18
Total Count	104		11	8	11	6	6	6	5	5	5	2	4	6	6	3	5	4	7	4
Core Count	104		11	8	11	6	6	6	5	5	5	2	4	6	6	3	5	4	7	4
Year 1	*Analytical Methods for Design*	x	X		X															
	Business (and Project Management)	x	X						X	X	X	X	X							
	Project	x		X		X	X	X			X					X	X		X	X
	Computer Aided Engineering	x			X									X	X			X		
	Design Principles	x	X	X	X		X	X	X						X			X		
	Mechanical Design Principles	x	X		X									X	X					
Year 2	*Major Project*	x		X	X	X	X	X	X	X	X		X				X		X	
	The Engineering Professional	x				X				X									X	X
	Work Based Unit	x	X	X	X			X					X	X	X	X	X	X	X	X
	Design Applications	x	X	X	X		X	X	X						X			X	X	
	Mechanical Design Applications	x	X	X	X									X						
Year 3	*Innovation and Professional Practice*	x					X			X	X		X			X	X			
	Advanced Engineering	x	X			X									X				X	
	BEng Project	x	X		X	X	X		X	X	X	X		X			X		X	X
	Adv. Stress & Vibration	x	X	X	X									X						
	Computational Engineering	x	X	X	X	X		X												

PSRB Mapping: BEng Engineering (Electronic Design) – IEng

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 (Hons) Engineering (Electronic Design)																			
	Module code	Compulsory	Science and Maths	Engineering Analysis			Design and Innovation		The Engineer and Society					Engineering Practice						
			B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17	B18
Total Count	107		8	9	10	6	8	9	3	5	5	2	4	6	7	4	6	4	7	4
Core Count	107		8	9	10	6	8	9	3	5	5	2	4	6	7	4	6	4	7	4
Year 1	*Analytical Methods for Design*	x	X		X															
	Business (and Project Management)	x	X						X	X	X	X	X							
	Project	x		X		X	X	X			X					X	X		X	X
	Circuit Analysis and Fault Location Techniques	x	X	X	X			X						X	X					
	Software Design Principles	x		X	X		X	X										X		
	Electronic Systems Design	x	X	X	X		X	X						X	X			X		
Year 2	*Major Project*	x		X	X	X	X	X	X	X	X		X				X		X	
	The Engineering Professional	x				X				X									X	X
	Work Based Project	x	X	X	X			X					X	X	X	X	X	X	X	X
	Applied Software in Engineering	x		X	X		X	X							X			X		
	Electronic Design Applications	x	X	X	X		X	X						X	X				X	
Year 3	*Innovation and Professional Practice*	x					X			X	X		X			X	X			
	Advanced Engineering	x	X			X									X				X	
	BEng Project	x	X		X	X	X		X	X	X	X		X			X		X	X
	Manufacturing Operations	x													X	X	X			
	Mechatronics	x		X	X	X		X						X						

PSRB Mapping: BEng Engineering (Manufacturing Management) – IEng

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 Engineering (Hons) (Manufacturing Management)																			
	Module code	Compulsory	Science and Maths	Engineering Analysis			Design and Innovation		The Engineer and Society					Engineering Practice						
			B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17	B18
Total Count	103		8	8	8	7	6	7	4	5	7	2	5	5	6	5	6	4	6	4
Core Count	103		8	8	8	7	6	7	4	5	7	2	5	5	6	5	6	4	6	4
Year 1	*Analytical Methods for Manufacturing*	x	X		X															
	Business (and Project Management)	x	X						X	X	X	X	X							
	Project	x		X		X	X	X			X					X	X		X	X
	Computer Aided Engineering	x			X									X	X			X		
	Supply Chain Management	x		X					X				X					X		
	Manufacturing Processes	x	X	X			X	X						X	X					
Year 2	*Major Project*	x		X	X	X	X	X	X	X	X		X				X		X	
	The Engineering Professional	x				X				X									X	X
	Work Based Project	x	X	X	X			X					X	X	X	X	X	X	X	X
	Quality Management	x		X	X	X		X			X					X				
	Industrial Robotics	x	X	X	X		X	X			X			X	X			X		
Year 3	*Innovation and Professional Practice*	x					X			X	X		X			X	X			
	Advanced Engineering	x	X			X									X				X	
	BEng Project	x	X		X	X	X		X	X	X	X		X			X		X	X
	Computational Engineering	x	X	X	X	X		X												
	Manufacturing Operations	x													X	X	X			