

School of Physics, Engineering & Computer Science

Title of Programme: Extended Engineering and Technology Degree Programme (Initial Year)

Programme Code: EIEF

For Collaborative: Consortium at Oaklands College / Barnet and Southgate College

Programme Specification

This programme specification is relevant to students entering:
01 September 2021

Associate Dean of School (Academic Quality Assurance):
Dr Mariana Lilley

Signature



A programme specification is a collection of key information about a programme of study (or course). It identifies the aims and learning outcomes of the programme, lists the modules that make up each stage (or year) of the programme, and the teaching, learning and assessment methods used by teaching staff. It also describes the structure of the programme, its progression requirements and any programme-specific regulations. This information is therefore useful to potential students to help them choose the right programme of study, to current students on the programme, and to staff teaching and administering the programme.

Summary of amendments to the programme:

Section	Amendment
D	OFEN0099 and OFEN0111 adjusted from 60% exam/ 40% coursework to 100% coursework* in the academic year 2021/22, due to the covid pandemic.
D	OFTC1021 and OFTC1024 adjusted from 60% exam/ 40% coursework to 100% coursework* in the academic year 2021/22, due to the covid pandemic.
D	OFTC1009 and OFTC1011 adjusted from 60% exam/ 40% coursework to 100% coursework* in the academic year 2021/22, due to the covid pandemic.
D	OFEN0100 and OFEN0112 adjusted from 60% exam/ 40% coursework to 100% coursework* in the academic year 2021/22, due to the covid pandemic.
D	OFTC1025 and OFTC1028 adjusted from 60% exam/ 40% coursework to 100% coursework* in the academic year 2021/22, due to the covid pandemic.
D	OFTC1012 and OFTC1014 adjusted from 60% exam/ 40% coursework to 100% coursework* in the academic year 2021/22, due to the covid pandemic.

* Learning outcomes for this module will be assessed via coursework using alternative modes of assessment. Alternative modes of assessment include, but are not limited to, take home coursework and online timed assessments.

If you have any queries regarding the changes please email AQO@herts.ac.uk

Programme Specification

Extended Engineering and Technology Degree Programme (Initial Year)

This programme specification (PS) is designed for prospective students, enrolled students, academic staff and potential employers. It provides a concise summary of the main features of the programme and the intended learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. More detailed information on the teaching, learning and assessment methods, learning outcomes and content for each module can be found in Definitive Module Documents (DMDs) and Module Guides.

Section 1

Awarding Institution/Body	University of Hertfordshire
Teaching Institution	University of Hertfordshire
University/partner campuses	University of Hertfordshire / Oaklands College / Barnet and Southgate College
Programme accredited by	Not applicable
Final Qualification	Not applicable
All Final Award titles (Qualification and Subject)	Not applicable
FHEQ level of award	3
UCAS code(s)	H100
Language of Delivery	English

A. Programme Rationale

The Extended Engineering and Technology Degree Programme (Initial Year) aims to prepare students, who would not normally be considered qualified, to an appropriate standard for entry into the first year of BEng (Honours) Engineering or BSc (Honours) Technology Degree programmes. Examples might include students with 'A' Levels or equivalent, Scottish or Irish Highers but with an insufficient background in Mathematics, Physics or other Technology-related subjects; students with overseas qualifications and mature students without the formal qualifications for entry to a University degree programme.

The degree programmes onto which the Initial Year provides entry have been developed to satisfy the QAA Engineering Benchmarks as well as the stringent requirements of a number of Professional Engineering Institutions. Thus the Initial year has been developed taking these benchmark statements into account.

The programme aims to develop in students, knowledge and understanding of and competence in, mathematics, science and the application of information technology, suitable to support their progression into the first year of an Engineering or Technology degree programme. Mathematics is a fundamental and important element of Engineering, allowing a description and analysis of physical systems and their behaviour. The programme requires a student to become competent in the fundamental mathematics common and essential to further study of all the various engineering disciplines. Mathematics is studied throughout the Initial Year in the Mathematics 1 and Mathematics 2 modules.

Students need to develop their knowledge of the Sciences relevant to Engineering and Technology. This is achieved through three modules on the programme. The Engineering Science module studied in Semester A provides a basis for all the Engineering disciplines. It covers the chemistry, properties and behaviour of engineering materials and their selection to serve particular purposes, introductory mechanics and fundamentals of electricity and magnetism. The latter subjects are developed further in the Mechanical Science and Electrical Science & Digital Technology modules in Semester B.

The computer is essential to the work of an engineer or technologist, whether it be design and analysis, or reporting and documenting their work. The Digital and Software Applications in Engineering module provides an opportunity for students to acquire competence in using appropriate computer software to, for example, solve problems, prepare reports and presentations and gather, analyse and present experimental data.

In the Initial Year Project module, students, working in small teams, undertake an extended study of a specialist nature, researching and reporting on an engineering/technological problem.

Students are not always sure of their intended discipline, or aware of the variety and range of engineering opportunities potentially available to them. The Engineering Studies and Skills module provides students with an exposure to various engineering disciplines through guided laboratory experiments in the School of Engineering and Technology at the University. This is reinforced by presentations by guest speakers and/or industrial visits. The module also aims to enable effective learning and so includes instruction on study skills, such as taking notes, writing and presenting reports, revising and taking examinations.

B. Educational Aims of the Programme

The programme has been devised in accordance with the University's graduate attributes of programmes of study as set out in [UPR TL03](#).

Additionally this programme aims to:

- prepare students, who would not normally be considered qualified, to an appropriate standard for entry into the first year of BEng (Honours) Engineering or BSc (Honours) Technology Degree Programme;
- develop in students knowledge and understanding of and competence in, mathematics, science and the application of information technology, suitable to support their progression into the first year of an Engineering or Technology degree programme;
- develop in students an appreciation of the engineering industry and its place and purpose in society, in order that they may make an informed choice of Engineering or Technology discipline

C. Intended Learning Outcomes

The programme provides opportunities for students to develop and demonstrate knowledge and understanding, skills and other attributes in the following areas. The programme outcomes are referenced to the QAA benchmark statements for Engineering and the Frameworks for Higher Education Qualifications of UK Degree-Awarding Bodies (2014) and relate to the typical student. Additionally, the SEEC Credit Level Descriptors for Further and Higher Education (2016) have been used as a guiding framework for curriculum design.

Knowledge and Understanding	Teaching and learning methods	Assessment strategy
A1 - The mathematics required by students entering Undergraduate Engineering and Technology programmes.	Acquisition of knowledge and understanding is through a combination of lectures, (A1-A3) small group tutorials, (A1-A3) coursework (A1-A3) and laboratory work. (A1-A3)	Knowledge and understanding are assessed through a combination of unseen examinations (A1, A2), assignment reports (A1-A3), laboratory reports (A2), phase tests (A1, A2) and project reports/presentations (A3).
A2 - The fundamental engineering sciences required by students entering Undergraduate Engineering and	Additional support is provided the Mathematics Drop-In Centre. Feedback is given to all students on all summative coursework produced. Throughout, the learner is encouraged to undertake independent study both to supplement and consolidate what	

Technology programmes. A3 - Principles of IT and Communications relevant to Engineering and Technology disciplines.	is being taught/learnt and to broaden their individual knowledge and understanding of the subject.	
Intellectual skills	Teaching and learning methods	Assessment strategy
B1 - Analyse engineering problems using appropriate mathematical techniques. B2 - Analyse engineering systems using appropriate scientific principles.	Intellectual skills are developed through a combination of lectures (B1, B2), small group tutorials (B1, B2), individual assignments (B1, B2), and laboratory work (B2). Feedback is given to all students on all summative coursework produced. Throughout, the learner is encouraged to develop intellectual skills further by independent study Throughout, the learner is encouraged to develop intellectual skills further by independent study	Intellectual skills are assessed through unseen examination papers, (B1, B2) phase tests, (B1, B2) laboratory reports (B2) and assignment reports. (B1, B2)
Practical skills	Teaching and learning methods	Assessment strategy
1 - Perform experimental work and draw conclusions. C2 - Use computer-based engineering tools. C3 - Prepare technical documentation.	Practical skills are developed through a combination of lectures, (C1-C3), laboratory work (C1-C3), assignments (C2, C3) and projects (C1, C2, C3). Feedback is given to students on all summative coursework produced.	Practical skills are assessed through laboratory reports, (C1, C3) assignment reports, (C2, C3) presentations (C2) and project reports. (C2, C3)
Transferable skills	Teaching and learning methods	Assessment strategy
D1 - Communicate effectively, both orally and in writing. D2 - Use commonly available IT tools. D3 - Manipulate, sort and present data. D4 - Solve problems in a logical manner.	Transferable skills are developed through a combination of lectures, (D1-D4) tutorials, (D2-D4) individual and group assignments. (D1-D4) Throughout, the learner is encouraged to develop transferable skills by maintaining a record of evidence and completing a personal development plan	Transferable skills are assessed through assignment reports, (D1–D3) oral presentations, (D1-D2) project reports (D1-D4) and examinations. (D4)

D. Programme Structures, Features, Levels, Modules, and Credits

The programme is offered as full-time only. Two of the modules, *Engineering Studies and Skills* and *Engineering Initial Year Project*, are University based; the remaining six modules are College based with module codes dependent on the college at which the student enrolls. Successful students progress onto the degree programme of their choice, depending on their performance in the specific modules according to the grade 'tariffs' given in Table 1b. Intake is normally in semester A.

Professional and Statutory Regulatory Bodies

N/A

Work-Based Learning, including Sandwich Programmes

N/A

Programme Structure

The programme structure and progression information below (Table 1a and 1b) is provided for the Honours award. Any interim awards are identified in Table 1b. The Programme Learning Outcomes detailed above are developed and assessed through the constituent modules. Table 2 identifies where each learning outcome is assessed.

Table 1a Outline Programme Structure

Mode of study Full Time

Entry point Semester A

Level 0

Module Title	Module Code	Credit Points	Language of Delivery	% Examination	% Coursework	% Practical	Semesters
Engineering Studies and Skills (Hatfield)	0AAD0001	15	English	0	100	0	A
Engineering Initial Year Mathematics 1 (BAR)	0FEN0099	15	English	0	100	0	A
Engineering Initial Year Mathematics 1 (OAK)	0FEN0111						
Engineering and Materials Science (BAR)	0FTC1021	15	English	0	100	0	A
Engineering and Materials Science (OAK)	0FTC1024						
Digital and Software Applications in Engineering (BAR)	0FTC1009	15	English	0	100	0	A
Digital and Software Applications in Engineering (OAK)	0FTC1011						
Engineering Initial Year Mathematics 2 (BAR)	0FEN0100	15	English	0	100	0	B
Engineering Initial Year Mathematics 2 (OAK)	0FEN0112						
Mechanical Science and Structures (BAR)	0FTC1025	15	English	0	100	0	B
Mechanical Science and Structures (OAK)	0FTC1028						
Electrical Science and Digital Technology (BAR)	0FTC1012	15	English	0	100	0	B
Electrical Science and Digital Technology (OAK)	0FTC1014						
Engineering Project (Hatfield)	0AAD0003	15	English	0	100	0	B

Progression to level 4 requires 120 credits and attainment of certain tariff grades, dependent on the programme onto which a student wishes to progress (see Table 1b). The module grading system is defined in UPR AS14 section D1.1. There is no direct progression possible to level 4 of MEng programmes offered within the School. Where a student has achieved 105 credits, the Board of Examiners may, at its discretion, allow the student to progress, provided that:

- all minimum tariffs as shown in Table 1b for the relevant degree programme have been achieved
- the minimum overall average grade shown in Table 1b, calculated as the average of all 120 credits taken, has been achieved

Fail grades in more than 30 credits of Semester A modules will normally preclude students from continuing on the programme.

Award classification
N/A

Table 1b Module Grade Tariffs

Programme	Initial Year Module and Tariff Grade								
	Engineering Initial Year Mathematics 1	Engineering and Materials Science	Digital and Software Applications in Engineering	Engineering Studies & Skills	Engineering Initial Year Mathematics 2	Mechanical Science and Structures	Electrical Science and Digital Technology	Engineering Project	Overall average grade
BEng Aerospace Engineering	50	50			50	50			55
BEng Aerospace Engineering with Space Technology	50	50			50	50			55
BEng Aerospace Engineering with Pilot Studies **	50	50			50	50			55
BEng Automotive Engineering	50	50			50	50			55
BEng Automotive Engineering with Motorsport	50	50			50	50			55
BEng Civil Engineering	50	50			50	50			55
BEng Electrical & Electronic Engineering	50	50			50		50		55
BEng Mechanical Engineering	50	50			50	50			55
BEng Robotics and Artificial Intelligence	50		50		50		50		55
BSc Aerospace Technology with Management									45
BSc Aerospace Technology with Pilot Studies									45
BSc Automotive Technology with Management									45
BSc Motorsport Technology									45
BSc Computer Technology & Networks									45

****It should be noted that undertaking Pilot Studies incurs extra cost and students will need to fulfil certain medical requirements at the appropriate time.**

Programme-specific assessment regulations

The programme complies with the University's academic regulations (in particular, [UPR AS11](#), [UPR AS12/UPR AS13](#) and [UPR AS14](#)) with the exception of those listed below, which have been approved by the University:

- None

Further programme-specific regulations (requiring School-level approval) are given below:

- Progression to level 4 of an Engineering or Technology degree depends on meeting the pre-requisite requirements of specific chosen modules. These are defined in Section 1 Table 1b.
- Fail grades in more than 2 Semester A modules will normally preclude students from continuing on the programme.
- Attendance at both College and University based classes is mandatory. Attendance will be monitored and students who have a prolonged absence (more than one week) without valid extenuating circumstance, as defined in UPR SA06, will be warned that if they continue to have periods of prolonged absence they will be withdrawn from the programme.
- Students are expected to attend the University for one day per week when they will study Engineering Studies and Skills (Semester A) and the Engineering Project (Semester B) modules. The remainder of the week students will be based at partner Associate or Franchised Colleges who will deliver the remaining six modules.

E.

Management of Programme & Support for student learning.

Management

The programme is managed and administered through:

- Dean of School;
- Associate Dean of School (AQA) who has overall responsibility for Quality Assurance;
- Associate Dean of School (L&T) who has overall responsibility for Learning & Teaching;
- the Programme Leader (Collaborative Partnership Lead) who is responsible for chairing the programme committee and advising students on the programme as a whole;
- the Student Records Administrator responsible for the administration associated with the programme;
- Programme Managers in the Colleges who are responsible for the day to day management;
- an Admissions Tutor, with specific responsibility for selection;
- a programme committee that includes the above plus student representation;
- module leaders who are responsible for individual modules.

Support

Students are supported by:

- an induction week at the beginning of each new academic year;
- an extensive Learning Resources Centre, incorporating a library and computer centre;
- guided student-centred learning through the use of StudyNet;
- a student handbook that is specific to the programme;
- a Programme Leader who can advise on programme issues;
- Module teaching teams who provide academic support;
- Computer and technical laboratories facilities and technical support staff;
- a project supervisor;
- student representatives on the programme committee;
- the Mathematics Drop-in Centre;
- the Careers, Employment and Enterprise Service that support students looking for either graduate employment or an industrial placement.
- a substantial Student Centre that provides advice on issues such as finance, University regulations, legal matters etc;
- the Medical Centre;
- the Accommodation Office;
- the International Students Centre who organise an Overseas Student Orientation induction programme;
- printing, photocopying, laminating and document binding facilities;
- a confidential counselling service;
- University Disability Advisors;
- an Equal Opportunities Officer;
- the Hertfordshire Students' Union.

F. Other sources of information

In addition to this Programme Specification, the University publishes guidance to registered students on the programme and its constituent modules:

- A Programme (or Student) Handbook;
- A Definitive Module Document (DMD) for each constituent module;
- A Module Guide for each constituent module.

The [Ask Herts](#) website provides information on a wide range of resources and services available at the University of Hertfordshire including academic support, accommodation, fees, funding, visas, wellbeing services and student societies.

As a condition of registration, all students of the University of Hertfordshire are required to comply with the University's rules, regulations and procedures. These are published in a series of documents called 'University Policies and Regulations' (UPRs). The University requires that all students consult these documents which are available on-line, on the UPR web site, at: <http://www.herts.ac.uk/secreg/upr/>. In particular, [UPR SA07](#) 'Regulations and Advice for Students' Particular Attention - Index' provides information on the UPRs that contain the academic regulations of particular relevance for undergraduate and taught postgraduate students.

In accordance with section 4(5) of the Higher Education and Research Act 2017 (HERA), the UK Office for Students (OfS) has registered the University of Hertfordshire in the register of English higher education providers. The Register can be viewed at: <https://www.officeforstudents.org.uk/advice-and-guidance/the-register/the-ofs-register/>. Furthermore, the OfS has judged that the University of Hertfordshire delivers consistently outstanding teaching, learning and outcomes for its students. It is of the highest quality found in the UK. Consequently, the University received a Gold award in the 2018 Teaching Excellence and Student Outcomes (TEF) exercise. This award was made in June 2018 and is valid for up to 3 years. The TEF panel's report and conclusions can be accessed at: <https://www.officeforstudents.org.uk/advice-and-guidance/teaching/tef-outcomes/#/provider/10007147>

G. Entry requirements

For current entry tariff point requirements, please refer to the relevant page for the Course on the University website or on the online prospectus.

The programme is subject to the University's Principles, Policies and Regulations for the Admission of Students to Undergraduate and Taught Postgraduate Programmes (in [UPR SA03](#)), along with associated procedures. These will take account of University policy and guidelines for assessing accredited prior certificated learning (APCL) and accredited prior experiential learning (APEL).

If you would like this information in an alternative format please contact:
Hutton Hub Student Administration Service hadmin@herts.ac.uk

If you wish to receive a copy of the latest Programme Annual Monitoring and Evaluation Report (AMER) and/or the External Examiner's Report for the programme, please email a request to aqo@herts.ac.uk

Table 2: Development of Programme Learning Outcomes in the Constituent Modules

This map identifies where the programme learning outcomes are assessed in the constituent modules. It provides (i) an aid to academic staff in understanding how individual modules contribute to the programme aims (ii) a checklist for quality control purposes and (iii) a means to help students monitor their own learning, personal and professional development as the programme progresses.

			Programme Learning Outcomes (as identified in section 1 and the following page)											
			Knowledge & Understanding			Intellectual Skills		Practical Skills			Transferable Skills			
			A1	A2	A3	B1	B2	C1	C2	C3	D1	D2	D3	D4
Level 0	Module Title	Module Code												
	Engineering Initial Year Mathematics 1	0FEN0099; 0FEN0111	x											x
	Engineering and Materials Science	0FTC1021; 0FTC1024		x		x	x	x		x	x			
	Digital and Software Applications in Engineering	0FTC1009; 0FTC1011			x				x			x	x	
	Engineering Studies and Skills	0AAD0001			x			x	x	x	x	x	x	
	Engineering Initial Year Mathematics 2	0FEN0100; 0FEN0112	x											x
	Mechanical Science and Structures	0FTC1025; 0FTC1028		x		x	x	x						
	Electrical Science and Digital Technology	0FTC1012; 0FTC1014		x		x	x	x	x	x	x	x		x
Engineering Project	0AAD0003		x	x			x	x	x	x	x			

Key: Learning Outcome which is assessed as part of the module

Key to Programme Learning Outcomes

Knowledge and Understanding

- A1. The mathematics required by students entering Undergraduate Engineering and Technology programmes.
- A2. The fundamental engineering sciences required by students entering Undergraduate Engineering and Technology programmes.
- A3. Principles of IT and Communications relevant to Engineering and Technology disciplines.

Intellectual Skills

- B1. Analyse engineering problems using appropriate mathematical techniques.
- B2. Analyse engineering systems using appropriate scientific principles.

Practical Skills

- C1. Perform experimental work and draw conclusions.
- C2. Use computer-based engineering tools.
- C3. Prepare technical documentation.

Transferable Skills

- D1. Communicate effectively, both orally and in writing
- D2. Use commonly available IT tools
- D3. Manipulate, sort and present data
- D4. Solve problems in a logical manner.

Section 2

Programme management

Relevant QAA subject benchmarking statements	Engineering
Type of programme	Initial Year
Date of validation/last periodic review	January 15
Date of production/ last revision of PS	April 21/ April 20
Relevant to level/cohort	Level 3 entering September 2021
Administrative School	School of Physics, Engineering & Computer Science

Table 3 Course structure

Course details		
Course code	Course description	HECOS
EIEF	Initial Year for Extended Degrees in Engineering	100184