

PROGRAMME SPECIFICATION

for the award of

Foundation Diploma Foundation in Engineering**Managed by the Faculty of Technology, Design & Environment****delivered by School of Engineering, Computing and Mathematics**

Date approved:	May 2012
Applies to students commencing study in:	September 2018

RECORD OF UPDATES

Date amended*	Nature of amendment**	Reason for amendment**
February 2018	Major	New double module proposed. U08609 will be no longer be available due to the suspension of the first year of the BSc Mathematics. U00810 (double) will allow a better monitoring of student performance. Furthermore, this structure aligns with that one of the first and second year of the BEng and BSc in Mechanics.

SECTION 1: GENERAL INFORMATION

Awarding body:	Oxford Brookes University
Teaching institution and location:	Oxford Brookes University Wheatley Campus, Wheatley, Oxon OX33 1HX
Language of study:	English
Final award/s:	Foundation Diploma/BSc/BEng/MEng to completion
Programme title:	Foundation in Engineering
Interim exit awards and award titles available:	N/A
Brookes course code:	FEG
UCAS code:	H108
JACS code:	H100
HECoS code:	100190
Mode of delivery: (Mode of Study given in brackets)	Face to face/on-campus (full-time) Face to face/on-campus (part-time)
Duration of study:	Full-time: One year/two years Part-time: two years/four years
Subject benchmark statement/s which apply to the programme:	N/A
Professional accreditation attached to the programme:	N/A
Apprenticeship Standard:	N/A
University Regulations:	<p>The programme conforms to the University Regulations for the year of entry as published/archived at: http://www.brookes.ac.uk/regulations/</p> <p>Specific regulations for all modules on these programmes which have both examination and coursework components have the programme specific requirement that the student score a minimum of 30% in each component of assessment otherwise a technical fail score of 39% will be used to indicate that the student failed to pass all the learning outcomes of the module.</p>

SECTION 2: WHY STUDY THIS PROGRAMME?

This programme evolved from the HiTech one year conversion course to permit well qualified students from non-numerate and non-science backgrounds to convert to study at university level a degree in Engineering, Mathematics or Science related subject. The programme has evolved and expanded its intake to include students with below-acceptable entry qualifications in maths and science as well as students who have not studied maths or science for a number of years. The programme covers level three mathematics, physics, statistics and specific engineering physical relations and rules concentrating on the areas required to progress to study Engineering, Mathematics and Statistics. It has the largest mathematical and physics content from the range of Foundation Diploma subjects that the University offers.

The programme deals very effectively with the problem of differing levels of maths at entry. Some students have reached only GCSE level in maths. These students take a different path from those who have AS-level or even A-level.

The Teaching Team

The teaching team could be found at <https://www.brookes.ac.uk/ecm/about/staff/>

SECTION 3: PROGRAMME LEARNING OUTCOMES

On successful completion of the programme, graduates will demonstrate the following Brookes Attributes:

3.1 ACADEMIC LITERACY

- The ability to describe and apply simple level 3 physical and engineering principles appropriate to Automotive, Motorsport, Electronic and Mechanical Engineering.
- An appreciation and understanding of the behaviour, operating characteristics, design considerations etc. of a range of simple but realistic engineering devices and components.
- An appreciation and understanding of numerical and mathematical procedures appropriate for entry to the first year of an engineering degree course that requires good analytical abilities.
- Effective routine problem solving in mathematics, engineering mechanics, physics and statistics.

3.2 RESEARCH LITERACY

Not applicable.

3.3 CRITICAL SELF-AWARENESS AND PERSONAL LITERACY

- An appreciation of good engineering practice.
- The ability to communicate effectively using reports, presentations and IT tools.
- The ability to set goals, manage time and tasks, and review personal performance to ensure work is completed satisfactorily and on time.
- The ability to listen, actively participate and present ideas using accepted formats for oral and poster presentations, essays and reports.
- The ability to work productively and effectively with others.

3.4 DIGITAL AND INFORMATION LITERACY

- Effective use of IT resources, including internet and library databases to search for and retrieve information.

3.5 ACTIVE CITIZENSHIP

- An ability to work effectively in groups which reflect the global nature and composition of the students attending the Foundation Diploma in Engineering.

SECTION 4: CURRICULUM CONTENT & STRUCTURE

Updated December 2017

4.1 PROGRAMME STRUCTURE AND REQUIREMENTS:

Code	Module Title	Credits	Level	Status	Coursework: Exam ratio CW/Exam
U00102	Foundations of Computer Programming	15	3	Acceptable	100/-
U00806	Fundamentals and Applications of Technology (Double)	30	3	Compulsory	100/-
U00807	Basic Mechanical Engineering Principals	15	3	Compulsory	30/70
U00808	Basic Electronic Engineering Principals	15	3	Compulsory	30/70
U00809	Engineering Applications	15	3	Compulsory	100/-
U00810	Foundation Engineering Mathematics (Double)	30	3	Compulsory	30/70
U08609	Introductory Mathematics	15	4	Acceptable	20/80
U08403	Basic Data Analysis	15	4	Acceptable	50/50

4.2 PROGRESSION AND AWARD REQUIREMENTS

To qualify for a Foundation Diploma in Engineering a student must comply with the following table of modules:

Status	Level	Credit (CATS)	Module code	Module Title
Compulsory	3	30	U00806	Fundamentals and Applications of Technology
Compulsory	3	30	U00810	Foundation Engineering Mathematics
Compulsory	3	15	U00809	Engineering Applications
Compulsory	3	15	U00807	Basic Mechanical Engineering Principals
Compulsory	3	15	U00808	Basic Electronic Engineering Principals

Requirements for BEng/MEng (EF/MF/MH/MEF/MMF/MMH) progression:

Progression from Foundation to year I of a BEng/MEng subject requires students, in addition to modular programme regulations, to have an overall average not less than 60% and to pass all compulsory modules with the minimum scores shown.

Not less than 60% in:

U00806	Fundamentals and Applications of Technology
U00807	Basic Mechanical Engineering Principals
U00808	Basic Electronic Engineering Principals
U00810	Foundation Engineering Mathematics

Requirements for BSc Motorsport Technology or Computer Aided Mechanical Engineering (AG/MN) progression:

Progression from Foundation to year I of a BSc subject requires students, in addition to modular programme regulations, to have passed the Foundation Engineering Diploma including all compulsory modules.

Not less than 40% in

U00806	Fundamentals and Applications of Technology
U00807	Basic Mechanical Engineering Principals
U00808	Basic Electronic Engineering Principals
U00810	Foundation Engineering Mathematics

Requirements for BSc Mathematics and/or Statistics (AM/MA/ML/ST) progression:

Progression from Foundation to year I of a Mathematical Sciences BSc subject requires students, in addition to modular programme regulations, to have the following minimum scores.

Not less than 70% in one of:

U00810	Foundation Engineering Mathematics
U08609	Introductory Mathematics

4.3 PROFESSIONAL REQUIREMENTS

There are no professional requirements for the Foundation Diploma but the department is heavily involved with the professional body for the mechanical engineering profession (IMechE) and students are encouraged to attend the regular programme of events that are hosted here at Brookes by that body.

SECTION 5: TEACHING AND ASSESSMENT

Teaching across the modules of the course, which originate from the School of Engineering, Computing and Mathematics, is conducted through a range of approaches: formal lectures, informal in-class discussions, seminars, problem-solving sessions, practical assignments and laboratory sessions, group design exercises, and tutorials for groups or individuals. The students will be introduced to the e-learning environment via the University's integrated on-line learning environment.

Self-study typically consists of solving tutorial problems, writing laboratory reports or group meetings. The strategy for assessment of the learning outcomes is described in each module syllabus where the balance between analytic, design and creative skills as well as personal development and professional skills is outlined. Student engagement with assessment and feedback processes is achieved through such mechanisms as meetings with the programme team, a student forum, Department policy for timely feedback to allow reflection on assessment and learning, and end-of-module evaluation. The assessment strategy is guided by "Brookes Assessment Compact" and details may be found at:

<http://www.brookes.ac.uk/aske/brookes--assessment-compact/>

Module leaders choose a division between examination and coursework that suits the subject and the module learning outcomes. All assessment is designed to be aligned with module learning outcomes and the combination of learning outcomes and individual modules combines to provide the graduate attributes for the subject.

Achieving the Graduate Attributes

Graduate attributes are mapped to learning outcomes in groups of modules as follows:

Academic Literacy

This starts with Mathematics, which provides the tools required to study and understand engineering principles in mechanics, electronics and materials throughout the Foundation Year. These subjects are taught in modules U00806, U00807, U00808, U00809, U00810 and U00811.

Critical self-awareness and personal literacy'

This Graduate Attribute is addressed in a number of modules starting with U00806 which combines fundamental science mixed in with materials and engineering applications and modelling. This module requires students to study mechanics, apply that knowledge to modelling a catapult then design, build and test the catapult in groups. , Subsequently these attributes are developed in U00807 (mechanics) where they write a lab report, U00808 which requires keeping a log book and completing virtual laboratory exercises in electronics and U00809 which requires the students to understand and select practical skills and manufacturing processes suitable for developing designs into working prototypes.

Digital information literacy

Students on the Foundation Diploma rapidly acquire IT skills in both word processing and spread sheet applications through laboratory work and writing reports but in addition they gain, for level 3 students, very advanced modelling skills using ADAMS in U00806. , 'Digital information literacy' extends beyond this to include the use of computers for more general skills such as presentations also required for U00806, U00808 and U00809, All these modules provide opportunities for students to learn and be assessed in relation to these abilities.

Active Citizenship

This graduate attribute relates to how well the graduates of the programme are prepared for work in the international and global business context. The eclectic mix of ages, nationalities and gender in a typical cohort require students to work with others from different social, economic and cultural backgrounds. This is excellent preparation on which to build a strong appreciation of Active Citizenship for their Foundation Year that will serve them well into their chosen degree subject.

A summary of the various module assessment strategies and the likely formal examination loading per semester is shown below.

Module No.	Module Name	Assessment CW/Exam	Semester Assessed
U00102	Foundations of Computer Programming	100/-	2
U00806	Fundamentals & Applications of Technology	100/-	1
U00807	Basic Mechanical Engineering Principles	30/70	2
U00808	Basic Electronic Engineering Principles	30/70	2
U00809	Engineering Applications	100/-	1
U00810	Foundation Engineering Mathematics	30/70	2
U08403	Basic Data Analysis	50/50	1 or 2
U08700	Word-processing & Spreadsheet IT Skills	100/-	1 or 2

Typically there would be one formal written examination at the end of semester 1, and three formal written examinations at the end of semester 2.

Most examinations last for two hours. The strategy of assessment of learning outcomes is described in each module syllabus, where the balance between analytic, design and creative skills as well as personal development and professional skills is outlined.

Coursework assignments are wide ranging and invariably challenging making use of strategies such as:

1. Presentations of working engineering models including Oral presentations – sometimes videoed;
2. Lab book notes, lab reports and other Descriptive Explanation;
3. Short engineering based design studies and feasibility studies;
4. Problem sheets;
5. Class tests;
6. Written submissions of laboratory work and practical assessment of laboratory skills.
7. Virtual laboratory exercises using software tools to simulate and model mechanical and electronic engineering designs.

SECTION 6: ADMISSION TO THE PROGRAMME

6.1 ENTRY REQUIREMENTS

Students entering year I of the courses will normally be at least 18 years of age and have one or two A levels or equivalent qualifications to show aptitude for study at level 3. Mature candidates will be assessed on an individual basis. Alternative qualifications that can be verified or assessed as being equivalent to the A level requirement will be considered on an equal basis.

In its mission statement the University has highlighted the need to widen access to higher education from those traditionally under-represented among students. One of the Department's provisions to enable this strategy is to offer a Foundation Diploma programmes of one year duration for those without the qualifications required to join a BEng/MEng programme directly. Students who have satisfied the necessary requirements of the Foundation Diploma at an appropriate level may progress to one of the BSc, BEng or MEng programmes.

English Language Requirements

For details for the University's English Language requirements see:

<http://www.brookes.ac.uk/international/apply/english/>.

6.2 DBS AND OTHER PRE-COURSE CHECKS REQUIRED

Not applicable.

6.3 JOB ROLE/EMPLOYER PROFILE (DEGREE AND HIGHER APPRENTICESHIPS)

Not applicable.

SECTION 7: PREPARATION FOR EMPLOYMENT

Students progressing from FEG to a degree subject at Brookes are often the most successful graduates and have even resulted in some becoming full time members of staff for the department. Students who leave after the Foundation Diploma can use this qualification as an entry into degree studies at most University's. Those who seek employment can access the University Career service, which assists students in researching companies, careers and how to apply for a job.

The School has strong industrial links with local employers through consultancy and research work as well as a strong record of providing industrial placement students. These links are of most benefit to the student when they have progressed onto a BEng/MEng or BSc subject of study. Key features of the employment links are:

- Recall Conference for sandwich placement students including industrial keynote speakers.
- Industrial Placement provision with local employers e.g. 40 BMW placements for Brookes.
- IMechE professional lecture events and visits.
- Sponsorship for Formula Student Team from local companies with materials and parts e.g. SECO Tools supply specialist tooling for manufacture.
- Hosting professional events such as the "Speak Out for Engineering" competition run by the IMechE and "Getting Chartered".
- Staff representation on the IMechE Oxford Area Committee provides a conduit to practicing Chartered Engineers and companies.
- The Department's Industrial Advisory Board that consults with and advises on current engineering needs of employers, research projects and professional standards.