

University of Plymouth

Faculty of Science and Engineering

School of Computing Electronics and Mathematics

Programme Specification

BEng (Hons) Mechanical Engineering with Foundation Year - 3798

September 2017

1. BEng (Hons) Mechanical Engineering with Foundation Year

Final award title **N/A**

Intermediate award title(s) **N/A**

Intermediate award title(s) **N/A**

UCAS code **H305**

JACS code **H300**

2. Awarding Institution: University of Plymouth

Teaching institution(s): University of Plymouth

3. Accrediting body(ies)

None

4. Distinctive Features of the Programme and the Student Experience

This programme is part of a suite of programmes which form the year 0 stage of an integrated four-year BSc/BEng degree in Engineering, Computing, or Mathematics and Statistics. The subsequent stages comprise the appropriate degree course chosen by a student on successful progression from the foundation year.

Progression from year 0 depends on the programme chosen.

The main progression routes are:

- BEng (Hons) Mechanical Engineering
- BEng (Hons) Marine Technology
- BEng (Hons) Mechanical Engineering with Composites

All students will be encouraged to realise their full potential by having mathematics, science, engineering and computing presented as subjects that are relevant, useful and stimulating. The programme has now been running (in various guises) for over twenty years and has proved very successful in allowing students to progress, and achieve highly, in their subsequent degrees. The response of students to the programme over the years through the module questionnaires and the SPQ is typically well above the faculty average (e.g. in the 2011-12 Student Perception

Questionnaire we scored 89% for overall satisfaction compared with a university average of 86%)

Some feedback from our 2011-12 cohort from the Student Perception Questionnaire:

“All the lecturers that taught were highly enthusiastic about what they were teaching and communicated to us what we were supposed to be learning. If someone didn't understand a concept there was always time given to the students to ensure everyone was on the same page. Support was always given when needed, be it from a personal tutor or elsewhere, while lecturers usually replied to emails the same day.”

“Great teaching, with maximum help available at all times for difficult decisions. I had to make a decision this year which is effectively life changing, and my personal tutor guided me all the way!”

“Lectures are great, work well explained, always someone on hand when help is needed, SUM:UP is very useful”

Our aim is to prepare students fully for their subsequent study, and in pursuit of this we will assess through a standard mixture of examinations, coursework assignments, in-class tests, laboratory reports and projects. However, we will also give opportunities for regular feedback throughout the year.

There is a considerable amount of pastoral care offered to students by their lecturers, including surgery support through SUM:UP for students having difficulty with mathematics.

5. Relevant QAA Subject Benchmark Group(s)

None for foundation level

6. Programme Structure

Stage 0.

MATH051 Mathematical Methods I	PHYS050 Physics I	MATH058 Applied Mathematics	Semester1
MATH053 Mathematical Methods II	PHYS051 Physics II	MECH050 Mechanical Engineering	Semester2

7. Programme Aims

The programme aims are:

1. To give students with non-scientific backgrounds and those returning to study without the appropriate qualifications a solid foundation in the scientific and technological subjects required for progression onto Stage 1 of their chosen degree programmes in Computing, Engineering or Mathematical sciences
2. To help these students develop the appropriate skills in autonomous learning, report writing, oral presentation and group working to give them a strong basis for successful engagement in their future studies;
3. To give students a wider view of the career opportunities and the distinctive cultures associated to Computing, Engineering or Mathematical disciplines.

8. Programme Intended Learning Outcomes

By the end of the Programme, successful students will be able to:

1. Recognize and employ scientific principles, using appropriate mathematical, computational and scientific methods, to solve simple but realistic problems in the everyday world;
2. Work both as individuals and as part of a team, to present a detailed technical report both in writing and orally on some chosen project;
3. Demonstrate an understanding of the careers and distinctive cultures in the area of Computing, Engineering or Mathematical sciences depending on the pathway chosen;
4. Demonstrate a factual/conceptual knowledge base appropriate to the level of study in Computing, Engineering and Mathematical sciences;
5. Where necessary, work safely in a laboratory environment, handling equipment with appropriate care.

9. Admissions Criteria, including APCL, APEL and DAS arrangements

The following notes are intended to give general guidance over entry qualifications for student applicants.

A Level and AS Level Applicants	Foundation Pathways in Technology is suitable for students with GCSE passes at grades A to C in four subjects including mathematics, English and a science subject, plus 200 UCAS points with at least two full A level passes Applicants whose mathematical achievements are significantly weaker than that stated above will be required to attend an interview which will assess their mathematical knowledge. A
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	leveling-up booklet is available on our web-site which can be used to prepare for the interview.
Returners to Study	<p>Foundation Pathways in Technology is also suitable for those returning to study who can offer work or other related experience in place of formal GCSE / GCE / CSE / BTEC qualifications and who have the equivalent of basic mathematical and science skills (i.e. the equivalent of a grade C at GCSE level).</p> <p>Where the prior level of qualifications falls significantly below our normal offer above, applicants will be invited to an interview to assess whether their prior experience may replace the more formal qualifications.</p> <p>Applicants whose mathematical achievements are significantly weaker than a grade C in mathematics GCSE will be required to attend an interview as above.</p>
Applicants with other qualifications	<p>Foundation Pathways in Technology is also suitable for students with other qualifications equivalent to GCSE passes at grades A to C in four subjects including mathematics (grade B), English and a science subject. In addition, students should have achieved one of the following:</p> <p style="padding-left: 40px;">National Diploma: MMP National Certificate: DM International Baccalaureate: 24 European Baccalaureate: 60% Access Courses: Pass with 33% of modules at Merit or above.</p> <p>Applicants with other qualifications should make enquiries to the admissions team and will be considered on an individual basis.</p> <p>Applicants whose mathematical achievements are significantly weaker than a grade C in mathematics GCSE will be required to attend an interview as above.</p>
International Applicants	<p>We welcome applications from international students who cannot directly enter the first year of University of Plymouth technology degrees or diplomas. They must be able to demonstrate an equivalent level of qualifications to those detailed above. They must be able to show evidence of competence in the English language equivalent to IELTS 6.0, with at least 5.5 in each element, in addition to any requirements imposed by UKVI.</p>

Applicants with disabilities are encouraged to talk to staff in Disability Assist about the assistance available from the University. Students with disabilities which they feel will impact on their studies are usually invited for an information interview with

members of Disability Assist and teaching staff in order to discuss the student's requirements in more detail. This would normally take place after an application has been made through UCAS, though informal discussions can take place before this.

10. Progression criteria for Final and Intermediate Awards

Students can progress from the foundation year onto any programmes which are cognate to the discipline they are studying. Progression is automatic subject to the restrictions below.

Students must pass with 50% overall to progress to BEng programmes.

11. Exceptions to Regulations

None

12. Transitional Arrangements

None

Mapping and Appendices:

13.1 ILO's against Modules Mapping

Learning Outcome	Modules
1. Recognize and employ scientific principles, using appropriate mathematical, computational and scientific methods, to solve simple but realistic problems in the everyday world;	All Modules
2. Work both as individuals and as part of a team, to present a detailed technical report both in writing and orally on some chosen project;	MECH050
3. Demonstrate an understanding of the careers and distinctive cultures in the area of Computing, Engineering or Mathematical sciences depending on the pathway chosen;	MECH050
4. Demonstrate a factual/conceptual knowledge base appropriate to the level of study in Computing, Engineering and Mathematical sciences;	All Modules
5. Where necessary, work safely in a laboratory environment, handling equipment with appropriate care.	PHYS050 PHYS051 MECH050

13.2 Assessment against Modules Mapping

Module	Title	C/W	Test	Practice	Exam
MATH051	Mathematical Methods I	50	0	0	50
MATH058	Applied Mathematics	50	0	0	50
MATH053	Mathematical Methods II	50	0	0	50
MECH050	Mechanical Engineering	90	0	10	0
PHYS050	Physics I	40	0	20	40
PHYS051	Physics II	40	0	20	40

13.3 Skills against Modules Mapping

	Knowledge and Understanding	Analysis	Synthesis and Creativity	Evaluation	Interactive and group skills	Self-Appraisal and Reflection on Practice	Planning and Management of learning	Problem solving	Communication and Presentation	Practical and Psychomotor skills
MATH051	X	X	X	X				X		
MATH058	X	X	X	X				X		
MATH053	X	X	X	X				X		
MECH050	X	X	X	X	X	X	X	X	X	X
PHYS050	X	X	X	X	X			X		X
PHYS051	X	X	X	X	X			X		X