

**Engineering Foundation Year**  
**COURSE SPECIFICATION**

<p>Course Aim and Title</p>	<p>BSc (Hons) Civil Engineering (with Foundation Year)            BEng/ MEng (Hons) Civil Engineering (with Foundation Year)            BEng/ MEng (Hons) Design Engineering (with Foundation Year)            BEng/ MEng (Hons) Engineering Management (with Foundation Year)            BEng/ MEng (Hons) General Engineering (with Foundation Year)            BEng/ MEng (Hons) Mechanical Engineering (with Foundation Year)            BEng (Hons) Biomedical Engineering (with Foundation Year)            BEng (Hons) Mechatronics and Computer Systems Engineering (with Foundation Year)            BEng (Hons) Mechatronics Engineering (with Foundation Year)            BEng (Hons) Product Design Engineering (with Foundation Year)            BEng (Hons) Railway Engineering (with Foundation Year)</p> <p>The Engineering Foundation Year introduces students to fundamentals of engineering science and principles, engineering design and problem solving, and ensure they are confident and digitally proficient with the academic and analytical skills necessary to succeed at degree level. The course covers general engineering curriculum based on physics, advanced mathematics, design, problem solving and interpersonal and academic skills. The specification describes level 3 of the course, which is shared across all of undergraduate engineering courses.</p>
<p>Intermediate Awards Available</p>	<p>University Certificate</p>
<p>Teaching Institution(s)</p>	<p>UEL (Docklands campus)</p>
<p>Alternative Teaching Institutions (for local arrangements see final section of this specification)</p>	<p>None</p>
<p>UEL Academic School</p>	<p>Architecture, Computing and Engineering</p>

UCAS Code	<p>H43K BSc (Hons) Civil Engineering (with foundation year)</p> <p>HU1K BEng (Hons) Civil Engineering (with foundation year)</p> <p>H103 BEng (Hons) Design Engineering (with foundation year)</p> <p>H900 BEng (Hons) Engineering Management (with foundation year)</p> <p>H104 BEng (Hons) General Engineering (with foundation year)</p> <p>H802 BEng (Hons) Mechanical Engineering (with foundation year)</p> <p>H162 BEng (Hons) Biomedical Engineering (with Foundation Year)</p> <p>H732 BEng (Hons) Mechatronics and Computer Systems Engineering (with Foundation Year)</p> <p>H733 BEng (Hons) Mechatronics Engineering (with Foundation Year)</p> <p>H106 BEng (Hons) Product Design Engineering (with Foundation Year)</p> <p>H232 BEng (Hons) Railway Engineering (with Foundation Year)</p>
Professional Body Accreditation	<p>There is no professional body accreditation for the level 3 element of this course.</p> <p>From level 4 onwards, the professional body accreditation (if any) are described in the full course specifications elsewhere.</p>
Relevant QAA Benchmark Statements	Engineering (February 2015)
Additional Versions of this Course	None
Date Specification Last Updated	July 2020

## Course Aims and Learning Outcomes

This course is designed to give you the opportunity to:

- ✓ Acquire essential knowledge and skills at basic level for a range of engineering disciplines.
- ✓ Develop the mathematical abilities and skillset required for understanding engineering science and principles and be able to apply mathematical techniques to solve basic engineering problems.
- ✓ Provide an elementary knowledge and understanding of the physical concepts related to materials, fluids and simple structures.
- ✓ Develop professional life (including digital proficiency and communication) skills, allowing students to articulate laboratory/ practical findings both verbally and as written reports, and to interpret basic engineering schematics and data.
- ✓ Prepare for progression and educational development within professional disciplines thus giving opportunities to study for graduate and later post-graduate degree level study.

What you will learn:

#### **Knowledge**

- ✓ The principles of engineering and physical sciences, application of appropriate computing methods and mathematical techniques and introduction to strategies to examine and solve basic engineering problems;
- ✓ Design process and methods, manufacturing and construction practice.
- ✓ Management and professional practices and understanding roles of engineers from professional perspective.

#### **Thinking skills**

- ✓ An awareness of commercial and technical issues in engineering and construction.
- ✓ An ability to interpret and analyse results, data and other information to present them in suitable forms.

#### **Subject-Based Practical skills**

- ✓ Team working, time management and communication skills to prepare for graduate and later post-graduate degree level study.

#### **Skills for life and work (general skills)**

- ✓ The knowledge and skills to progress learner' career and educational development for graduate and later post-graduate degree level study.
- ✓ Digital proficiency, interpersonal and communication skills to study for graduate and later post-graduate degree level study.
- ✓ Personal development techniques and confidence in your abilities to enable learner to become a valued professional in the shaping of the community and society.

Learning and Teaching

Learning and Teaching are undertaken by incorporating practical and laboratory work the students undertake for their coursework, laboratory assignments including simulation studies to facilitate and enhance the student learning experience. These methods are in addition to the lectures and tutorials, directed readings, group exercises, specialist lectures and project work. These approaches are effective in delivering knowledge and understanding, developing student learning skills and promoting an individual responsibility and commitment to learning.

Teaching methods are designed to match the achievement of the learning outcomes. This is important in the planning and delivery of teaching sessions and staff can positively engage and integrate student activity in the learning process. Peer observation of teaching is used and the school is continuously reflecting and reviewing innovative teaching methods.

Teaching materials mainly consist of lectures, providing notes and handouts to students or uploading loading them on the virtual learning environment (Moodle) in advance of the teaching sessions. This allows students time to augment information during lectures and to participate in discussions and for the development of analytical content and worked examples. Lectures are delivered in state-of-the-art purpose-built classrooms, all with overhead projectors, whiteboards and with many rooms offering video and computer projection. The foundation year also provides comprehensive laboratory facilities for computing and the delivery of other software supported modules, where both taught classes and practical sessions are undertaken. Students have open access to laboratories, provided health and safety regulations are complied with. Students are required to attend lectures, tutorials, laboratory and practical classes. The contact hours of students varies across the course modules.

Knowledge is developed through

- Guided reading
- Knowledge-based activities with feedback
- Online discussions and activities

Thinking skills are developed through

- Reflective activities with feedback
- Online discussions and activities

Practical skills are developed through

- IT activities with feedback
- Research skills-based activities with feedback

Skills for life and work (general skills) are developed through

- The demands of the study medium (e.g. distance learning)
- Planning activities with feedback
- Project work

## Assessment

The assessments in the engineering foundation year are aimed to assess knowledge needed to start an engineering degree, where students may not have necessary mathematics, computing and science background. The students get an overview of various Engineering areas, enabling with wider choice to choose from courses available at UEL.

Knowledge is assessed by

- Coursework
- Essays
- Examinations

Thinking skills are assessed by

- Problem-based exercises
- Individual and group projects
- Examinations

Practical skills are assessed by

- Practical reports
- Portfolio completion

Skills for life and work (general skills) are assessed by

- Project work
- Group work

Students with disabilities and/or particular learning needs should discuss assessments with the Course Leader to ensure they are able to fully engage with all assessment within the course.

## Work or Study Placements

Optional placements and work experience opportunities can be pursued once the student has progressed to the honours degree courses. At that stage, placements can vary in duration from during the summer vacation to 12 months. Please see the relevant course/course specification.

## Course Structure

All courses are credit-rated to help you to understand the amount and level of study that is needed.

One credit is equal to 10 hours of directed study time (this includes everything you do e.g. lecture, seminar and private study).

Credits are assigned to one of 5 levels:

- 3 Equivalent in standard to GCE 'A' level and is intended to prepare students for year one of an undergraduate degree course.
- 4 Equivalent in standard to the first year of a full-time undergraduate degree course.
- 5 Equivalent in standard to the second year of a full-time undergraduate degree course.
- 6 Equivalent in standard to the third year of a full-time undergraduate degree course.
- 7 Equivalent in standard to a Masters degree.

Courses are made up of modules that are each credit weighted.

The module structure of this course:

Level	Module Code	Module Title	Credit Weighting	Core/Option	Available by Distance Learning? Y/N
3	EG3010	Mental wealth; professional life	20	Core	N
3	EG3011	Analytical Mathematics	20	Core	N
3	EG3012	Engineering Sciences	20	Core	N
3	EG3014	Mathematical Applications	20	Core	N
3	EG3105	Physical Sciences	20	Core	N
3	CN3030	Introduction to computing	20	Core *	N
3	BS3204	Human Biology	20	Core *	N

*Please note: Optional modules might not run every year, the course team will decide on an annual basis which options will be running, based on student demand and academic factors, in order to create the best learning experience.*

*\* The module BS3204 Human Biology is Core for students on BEng Hons Biomedical Engineering course. Students on this course will not be reading the module CN3030 Introduction to Computing.*

A core module for a course is a module which a student must have passed (i.e. been awarded credit) in order to achieve the relevant named award. An optional module for a course is a module selected from a range of modules available on the course.

The overall credit-rating of the engineering foundation year is 120 credits. If for some reason you are unable to achieve this credit you may be entitled to an intermediate award, the level of the award will depend on the amount of credit you have

accumulated. You can read the University Student Policies and Regulations on the UEL website.

## Course Specific Regulations

None.

## Typical Duration

It is possible to move from full-time to part-time study and vice-versa to accommodate any external factors such as financial constraints or domestic commitments. Many of our students make use of this flexibility and this may impact on the overall duration of their study period.

The expected duration of the engineering foundation year is 1 year full-time or 2 years part-time.

For undergraduate degree courses after the completion of engineering foundation year, a student cannot normally continue study on a course after 4 years of study in full time mode unless exceptional circumstances apply and extenuation has been granted. The limit for completion of a course in part time mode is 7 years from first enrolment (or 8 for foundation).

## Further Information

More information about this course is available from:

- The UEL web site ([www.uel.ac.uk](http://www.uel.ac.uk))
- The course handbook
- Module study guides
- UEL Manual of General Regulations (available on the UEL website)
- UEL Quality Manual (available on the UEL website)
- School web pages

All UEL courses are subject to thorough course approval procedures before we allow them to commence. We also constantly monitor, review and enhance our courses by listening to student and employer views and the views of external examiners and advisors.

#### Additional costs:

While the university will provide suitable personal protective equipment (PPE) for students to work in UEL workshops and/or laboratories, students have to provide their own steel-toe-capped footwear. For students on external construction site visits other related PPE will also be required to be purchased such as hard hats and hi-visibility vests etc. At Level 3 there will also be costs in relation to day-visits and for drawing equipment and model making materials. For information related to costs for the degree courses, please refer to the engineering BEng/ MEng courses specifications.

#### Alternative Locations of Delivery

The course is only offered at the Docklands campus.