

## *MEng Mechanical Engineering*

Course Aim and Title	MEng Mechanical Engineering
Intermediate Awards Available	BEng (Hons) Mechanical Engineering BEng Mechanical Engineering Dip HE Engineering Cert HE Engineering
Teaching Institution(s)	UEL on campus
Alternative Teaching Institutions (for local arrangements see final section of this specification)	
UEL Academic School	Architecture, Computing and Engineering
UCAS Code	H101
Professional Body Accreditation	
Relevant QAA Benchmark Statements	Engineering 2015
Additional Versions of this Course	
Date Specification Last Updated	June 2023

## Course Aims and Learning Outcomes

The MEng Mechanical Engineering course aims to provide broad education and training in the field of Mechanical Engineering to produce graduates capable of pursuing professional careers in industry underpinned by the Mechanical Engineering discipline; and to enable the graduates to develop characteristics of an engineer as a problem solver applying knowledge with economic, legal and ethical constraints. This course is designed to give you the opportunity to:

- Acquire the knowledge and skills relevant to a career as a professional engineering practitioner who can work effectively with current industrial technologies, methods and standards.
- Develop awareness of best current practice within industry, and future trends.
- Enhance your understanding of innovative and pioneering approaches in the engineering field and to be able to apply them to the solution of real-world problems to develop new industrially-relevant solutions.
- Gain the knowledge and skills required to perform a variety of professional roles within engineering design, management, industry, and associated specialist fields.
- Be able to develop and demonstrate a range of subject-specific and transferable skills, including team-working, leadership, entrepreneurship, management and planning.
- Prepare for progression in career and educational development to pursue postgraduate studies.

- Develop systematic and broad understanding of the key topics within Mechanical Engineering together with the skills needed to update, extend and deepen in further study and future career development.

What you will learn:

#### Knowledge

- The principles of mechanical engineering; application of appropriate mathematical, computational techniques and methods to model and analyse real-world engineering problems.
- Design process, design methodologies, manufacturing and operational practice.
- Management and business practices and engineers' roles in society.

#### Thinking skills

- Management and business practices and engineers' roles in society.
- Evaluate commercial risks and technical risks in unfamiliar circumstances.
- Interpret and analyse results, data and other information to present them in suitable forms.

#### Subject-Based Practical skills

- The knowledge and skills to function effectively in industry to be able to progress in career and educational development.

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

- Personal development techniques and confidence in your abilities to enable you to become a valued professional in the shaping of the community and society.

## Learning and Teaching

#### Knowledge is developed through

- Lecturers and tutorial sessions
- Problem-solving classes
- Knowledge-based activities with feedback
- Online discussions and activities

#### Thinking skills are developed through

- Design tasks
- Individual and group projects
- Online discussions and activities

#### Practical skills are developed through

- Laboratory practicals
- Computer simulation exercises
- Design tasks

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

- Planning activities with feedback
- Project work

## Assessment

Assessment is undertaken in various modes, in general assessment takes the following forms.

Knowledge is assessed by

- Written assignments
- Laboratory reports
- Project reports
- Examinations

Thinking skills are assessed by

- Problem-based exercises
- Design tasks
- Simulation exercises
- Individual and group projects
- Examinations

Practical skills are assessed by

- Practical reports
- Practical demonstrations
- Portfolio completion

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

- Logbooks, learning portfolios
- Poster displays
- Exhibitions
- Oral presentations

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

We encourage students to consider seeking industrial experience during their academic studies, either through work experience during summer vacations or through the optional sandwich placement between L5 and L6. Those students who opt for a year out placement will be enrolled on a 120-credit EG5023 Industrial

Sandwich Placement module, which will appear in the final transcript as evidence of the 'sandwich' placement year. Relevant personnel from CfSS oversees the administration of the year out placement and assists in helping students secure a placement.

## 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:

<b>Level</b>	<b>Module Code</b>	<b>Module Title</b>	<b>Credit Weighting</b>	<b>Core/Option</b>	<b>Available by Distance Learning? Y/N</b>
4	EG4098	Mental Wealth: Engineering Profession 1	20	Core	N
4	EG4097	Engineering Materials and Design	20	Core	N
4	EG4016	Engineering Principles	20	Core	N
4	EG4011	Applied Mathematics and Computing	20	Core	N

4	EG4020	Thermofluids	20	Core	N
4	EG4015	Engineering Mechanics	20	Core	N
5	EG5107	Mental Wealth: Engineering Profession 2	20	Core	N
5	EG5024	Advanced Mathematics and Modelling	20	Core	N
5	EG5026	Engineering Design and Analysis	20	Core	N
5	EG5027	Dynamics and Control	20	Core	N
5	EG5025	Applied Mechanics	20	Core	N
5	EG5029	Thermofluid Dynamics	20	Core	N
P	EG5023	Industrial Sandwich Placement	120	Option	N
6	EG6166	Mental Wealth: Engineering Profession 3	20	Core	N
6	EG6011	Capstone Project	40	Core	N
6	EG6020	Advanced Mechanics	20	Core	N
6	EG6019	Advanced Manufacturing Technology	20	Core	N

6	EG6027	Turbomachinery and Energy Systems	20	Core	N
7	EG7034	Mental Wealth: Professional Practice (Engineering Management)	30	Core	N
7	EG7038	Applied Research and Engineering Practice II	30	Core	N
7	EG7040	Advanced Fluids	30	Option	N
7	EG7164	Automation and Robotics	30	Option	N
7	EG7039	Smart Industries and Digital Manufacturing	30	Option	N
7	EG7031	Intelligent Transport Systems	30	Option	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.*

Additional detail about the course module structure:

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 this course is 480 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

MEng Mechanical Engineering students who have completed L4 and L5, but fail to meet all the progression requirements for the MEng, may require to transfer into L6 of BEng (Hons) Mechanical Engineering.

## 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 this course is 4 years full-time or 6 years part-time.

A student cannot normally continue study on a course after 5 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 8 years from first enrolment.

## 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 workshops and/or laboratories where PPE is required, students have to provide their own steel-toe-capped footwear. This will be approximately £100.

## Alternative Locations of Delivery

Not applicable