

## COURSE SPECIFICATION

Course Aim and Title	BEng (Hons) Electrical and Electronic Engineering
Intermediate Awards Available	BEng Electrical and Electronic Engineering Dip HE Electrical and Electronic Engineering CertHE Engineering
Teaching Institution(s)	UEL on campus
Alternative Teaching Institutions (for local arrangements see final section of this specification)	N.A.
UEL Academic School	Architecture, Computing and Engineering
UCAS Code	H620
Professional Body Accreditation	N.A.
Relevant QAA Benchmark Statements	Engineering (2019)
Additional Versions of this Course	<ul style="list-style-type: none"><li>• BEng (Hons) Electrical and Electronic Engineering with Foundation Year</li><li>• BEng (Hons) Electrical and Electronic Engineering with Placement Year</li></ul>
Date Specification Last Updated	04 August 2023

### Course Aims and Learning Outcomes

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 and future electrical and electronic technologies, methods and standards.
- 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.
- Prepare for progression in your career and educational development to pursue postgraduate studies.

What you will learn:

#### Knowledge

- Application of fundamental concept principles and theories relevant to Electrical and Electronic Engineering as a discipline.
- Application of detailed knowledge and understanding of the essential facts, concepts, principles and theories in the fields of electronic circuit design,

power systems, renewable energy, signal processing, telecommunication systems and related fields.

- Management and business practices and engineers' roles in society.

#### Thinking skills

- How to evaluate commercial risks and technical risks in unfamiliar circumstances.
- Interpretation and analysis of results, data and other information to present them in suitable forms.

#### Subject-Based Practical skills

- How to use test and measurement equipment, take accurate measurements and record progress of an experiment in a laboratory book and computer database.
- Preparation of technical reports and how to give technical presentations using a variety of information sources and constructed using appropriate computer tools and packages.

#### 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

#### 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. Placements are not guaranteed and not provided by the University. Those students who opt for a year out placement will be enrolled on a 120P-credit EG5023 Industrial Placement module, which will appear in the final transcript as evidence of the 'sandwich' placement year. Relevant personnel from the University oversee 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	CN4002	Computer Systems and Networks	20	Core	N
4	EG4011	Applied Mathematics & Computing	20	Core	N
4	EG4016	Engineering Principles	20	Core	N
4	EG4098	Mental Wealth: Engineering Profession 1	20	Core	N
4	EG4096	AC Circuits and Electronic Principles	20	Core	N
4	EG4095	Electrical Materials & Fields	20	Core	N
5	EG5107	Mental Wealth: Engineering Profession 2	20	Core	N
5	EG5024	Advanced Mathematics and Modelling	20	Core	N
5	EG5027	Dynamics and Control	20	Core	N

5	EG5146	Applied Electronics	20	Core	N
5	EG5042	Digital Communications & telecommunication Networks	20	Core	N
5	EG5147	Introduction of Renewable Energy Systems	20	Core	N
P	EG5023	Industrial Sandwich Placement	120P	Option	N
6	EG6166	Mental Wealth: Engineering Profession 3	20	Core	N
6	EG6011	Capstone project	40	Core	N
6	EG6099	Digital Signal Processing	20	Core	N
6	EG6100	Electrical Machines and Power Systems	20	Core	N
6	EG6109	Microcontrollers for Industrial Applications	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.*

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 360 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

BEng (Hons) Electrical and Electronic Engineering students who have completed L4 and L5, and have met all the progression requirements for the MEng, may apply for transfer into L6 of MEng. This application will be considered by the course leader.

## 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 3 years full-time or 4.5 years part-time.

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.

## 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:

Required:

- Students should have steel toe-capped footwear when attending workshops or laboratories (approximately £50 upwards).

Recommended:

- Students are encouraged to have access to their own personal computing equipment (approximately £300 upwards) and reliable internet connection (price varies) for working off-campus.

Optional:

- There may be optional site visits / trips during the course. Students attending trips will be expected to pay towards travel and/or accommodation and/or subsistence costs and may be required to purchase personal protective equipment. Prices vary depending on the site visits / trips but any details will be advertised to students as soon as they become available.

### Alternative Locations of Delivery

Not applicable.