COURSE SPECIFICATION

Course Aim and Title	MEng Electrical and Electronic Engineering MEng Electrical and Electronic Engineering with Placement Year MEng Electrical and Electronic Engineering – Integrated MEng Electrical and Electronic Engineering – Integrated with Placement Year
Intermediate Awards Available	BEng (Hons), BEng, Dip HE, Cert HE
Teaching Institution(s)	Metropolitan College
Alternative Teaching Institutions (for local arrangements see final section of this specification)	
UEL Academic School	Architecture, Computing and Engineering
UCAS Code	
Professional Body Accreditation	
Relevant QAA Benchmark Statements	Engineering
Additional Versions of this Course	
Date Specification Last Updated	28 February 2020

Course Aims and Learning Outcomes

This course is designed to give you the opportunity to:

- develop a thorough knowledge and understanding of electrical and electronic engineering and its applications
- study particular aspects of electronic and electrical engineering in depth, according to your interests
- enable critical thinking in the evaluation of existing information and to the interpretation of experimental evidence
- foster a commitment to continuous learning and professional development
- develop a range of generic and interpersonal skills appropriate to employment in all related sectors.

What you will learn:

Knowledge

- scientific principles and methodology necessary in electrical and related engineering disciplines to enable appreciation of its scientific and engineering context of future developments and technologies

- mathematical principles necessary in electrical, electronics and related engineering disciplines and an appreciation of their limitations
- computer models relevant to electrical, electronics, and related engineering disciplines and an appreciation of their limitations
- concepts from a range of areas including some outside engineering and the ability to apply them effectively in engineering projects.

Thinking skills
- generate innovative design solutions for products, systems, components or processes to fulfill new needs
- investigate and define a problem and identify constraints including environmental and sustainability limitations, health and safety and risk assessment issues
- apply mathematical and computer-based models for solving engineering problems and have the ability to assess the limitations in particular cases.

Subject-Based Practical skills
- identify and interpret the characteristics of particular equipment, processes or products, and laboratory skills
- apply engineering techniques taking into account a range of commercial and industrial constraints
- ability to work with technical uncertainty.

Skills for life and work (general skills)
- make general evaluations of commercial risks through some understanding of the basis of such risks.
- management and business practices and their limitations and how they may be applied appropriately to strategic and tactical issues
- the need for a high level of professional and ethical conduct in engineering.

Learning and Teaching

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
- Laboratory activities with feedback
- Computer based design or programming activities with feedback
- Research skills-based activities with feedback

Skills for life and work (general skills) are developed through
- Planning activities with feedback

- Project work
- Group work

Assessment

Knowledge is assessed by
- Coursework
- Reports / Essays
- Laboratory Logbooks
- Examinations

Thinking skills are assessed by
- Coursework
- Examinations
- Project work
- Group work

Practical skills are assessed by
- Technical reports
- Portfolio completion
- Demonstration
- Presentation

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

The period of industrial training (placement) for students is optional and can be undertaken after successful completion of Level 5 modules. It is designed to complement academic studies, giving students guided experience of industrial methods and human relationships and so enabling them to become effective contributors to organisations. Students are required to engage in a sustained experiential work-based learning activity of 48-weeks duration. On rare occasions students (appreciative of the value of industry experience in obtaining graduate posts) may opt to undertake industrial placement mid-way through Level 6 of their study. In these cases, students undertake placement during Level 7 (or final year) of their study.

The aim of the industrial training element is to develop students' ability to apply their knowledge to the solution of practical situations as they arise in industrial, commercial

and computing establishments. The industrial placement element, therefore, fulfils a crucial role in making an effective contribution to their specialised disciplines.

The detailed training course for each student will be subject to discussion between staff from the company and the school. The placement period is assessed on a pass or fail basis and in order to pass satisfactorily, students are assessed on progress reports.

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 entry level (foundation equivalent) and is intended to prepare students for level 4 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 (integrated) degree.

Courses are made up of modules that are each credit weighted. The module structure of this course is:

Level	Module Code	Module Title	Credit Weighting	Core/Option	Available by Distance Learning? Y/N
3	EG3012	Engineering Sciences	20	Core	N
3	EG3014	Mathematical Applications	20	Core	N
3	EG3015	Physical Sciences	20	Core	N
3	CN3030	Introduction to computing	20	Core	N

3	EG3010	Mental Health and Professional Life	20	Core	N
3	EG3011	Analytical Mathematics	20	Core	N
4	EG4xxx	Mental Wealth: Professional Life 1	20	Core	N
4	EG4xxx	PROGRAMMING LANGUAGES	20	Core	N
4	EG4xxx	ENGINEERING MATHEMATICS	20	Core	N
4	EG4xxx	ANALOGUE AND DIGITAL ELECTRONICS	20	Core	N
4	EG4xxx	ELECTRICAL NETWORKS ANALYSIS	20	Core	N
4	EG4xxx	ELECTRICAL POWER GENERATION	20	Core	N
5	EG5xxx	Mental Wealth: Professional Life 2	20	Core	N
5	EG5xxx	DYNAMICS AND CONTROL SYSTEMS	20	Core	N
5	EG5xxx	TELECOMMUNICATION SYSTEMS TECHNOLOGY	20	Core	N
5	EG5xxx	MICROPROCESSORS AND SOFTWARE DESIGN	20	Option	N

5	EG5xxx	ADVANCED MODELLING TECHNIQUES	20	Core	N
5	EG5xxx	ELECTRICAL AUTOMATION AND PROGRAMMABLE LOGIC	20	Core	N
5	EG5xxx	RENEWABLE ENERGY TECHNOLOGY	20	Option	N
PP	CN5023	Industrial Placement	120	Option	N
6	EG6xxx	Mental Wealth: Professional Life 3	20	Core	N
6	EG6xxx	Individual PROJECT (BENG)	40	Core	N
6	EG6xxx	Individual PROJECT (MENG)	40	Core	N
6	EG6xxx	MICROWAVE AND DIGITAL COMMUNICATIONS DESIGN	20	Core	N
6	EG6xxx	ELECTRICAL MACHINES AND DRIVES	20	Option	N
6	EG6xxx	OPTOELECTRONIC DEVICES AND INSTRUMENTATION	20	Option	N
6	EG6xxx	DIGITAL SIGNAL PROCESSING	20	Option	N
6	EG6xxx	ADVANCED CONTROL SYSTEMS	20	Option	N
7	EG7xxx	Group Project and Mental Wealth with Engineering Management	60	Core	N

7	EG7xxx	ELECTRICAL POWER SYSTEMS ANALYSIS	30	Option	N
7	EG7xxx	SUSTAINABLE ENERGY DESIGN AND RELIABILITY	30	Option	N
7	EG7xxx	MIXED SIGNAL AND DSP PROCESSORS	30	Option	N
7	EG7xxx	SENSORS TECHNOLOGY AND MEASUREMENT SYSTEMS	30	Option	N
7	EG7xxx	ROBOTICS AND INTELLIGENT SYSTEMS	30	Option	N
7	EG7xxx	COMPUTER VISION AND IMAGE PROCESSING TECHNIQUES	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:

The expected length of study for the BEng full-time is 4 years, whereas part-time students are expected to complete in 7 years (or 5 and 8 years respectively if a sandwich placement is undertaken).

The expected length of study for the MEng full-time is 5 years, whereas part time students are expected to complete in 8 years (or 6 and 9 years respectively if a sandwich placement is undertaken).

A core module for a course is a module for 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.

Optional modules undertaken at Level 6 will dictate the route taken (optional modules groupings) at Level 7. There are three routes at Level 7 covering distinct specialisations in sustainable energy, embedded systems, and automation.

The overall credit-rating of this course is 480 credits for the BEng (Hons) and 600 credits for the MEng. If, for any 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

Enrolling for the MEng course, means that you will be required to achieve the MEng Progression Requirement of an average grade of more than 50% on all modules at Levels 4 and 5, with no pass compensation. If not, you will be required to exit with a BEng Hons degree (under conditions as outlined elsewhere).

The pass grade at Levels 3 to 6 is at 40% (threshold at 30%) and at Level 7 is 50% (threshold 40%). However, and as per MEng Progression Requirements, you need to be careful of your average grades throughout your studies to avoid being forced to exit with a BEng (Hons) award.

This course does not currently have professional body accreditation but students are strongly encouraged and supported to make individual applications for membership at professional institutions and thence apply for accredited status.

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; however, this will impact on the overall duration of their study period.

BEng (Hons): This is an exit award for students that do not meet the MEng progression criteria. The BEng Hons expected duration is 4 years full-time or 8 years part-time. A student cannot normally continue study on a course after 6 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.

MEng: The duration of this course is 4 years (MEng) or 5 years (MEng - integrated) full-time (or 5 and 6 years respectively with industrial placement), and 8 years part-time. The time limit for completion of a course is 8 years after first enrolment on the course.

Further Information

More information about this course is available from:

- The Metropolitan College web site (www.mitropolitiko.edu.gr)
- The course handbook
- Module study guides
- UEL Manual of General Regulations (available on the UEL website)
- UEL Quality Manual (available on the UEL website)

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: Occasional additional costs may incur in field trips, or specialist equipment you may wish to purchase for group projects. These costs might occur in weeks 10-14 and/or 20-24 as per academic calendar.

Alternative Locations of Delivery

This course will run in Athens, Greece (Marousi Campus) and Thessaloniki, Greece (Thessaloniki Campus) under the same arrangements and procedures.