

PROGRAMME SPECIFICATION

Programme Aim and Title	BEng (Hons) Energy and Renewable Energy Engineering
Intermediate Awards Available	Ordinary, DipHe, CertHE, University Certificate
Teaching Institution(s)	Ain Shams University – Faculty of Engineering - CHEP
Alternative Teaching Institutions (for local arrangements see final section of this specification)	N/A
UEL Academic School	School of Architecture, Computing and Engineering
UCAS Code	N/A
Professional Body Accreditation	N/A
Relevant QAA Benchmark Statements	Engineering (February 2015)
Additional Versions of this Programme	N/A
Date Specification Last Updated	August 2019

Programme Aims and Learning Outcomes

This programme is designed to give you the opportunity to:

- Apply knowledge of mathematics, science and engineering concepts to the solution of engineering problems.
- intern in industry to gain career enhancing experience of the application of engineering principles.
- gain knowledge and develop skills in a range of specialized selective courses covering electrical power or mechanical engineering.
- Consider the impacts of engineering solutions on society & environment.
- Design and supervise the construction of systems to generate, transmit, control and use electrical energy.
- Carry out preliminary designs of fluid transmission and power systems, investigate their performance and solve their essential operational problems.

What you will learn:

Knowledge

- Concepts and theories of mathematics and sciences, appropriate to the

discipline.

- Basics of information and communication technology (ICT)
- Quality assurance systems, codes of practice and standards, health and safety requirements and environmental issues.
- Business and management principles relevant to engineering.
- Professional ethics and impacts of engineering solutions on society and environment.

Thinking skills

- Select appropriate mathematical and computer-based methods for modelling and analysing problems.
- Assess and evaluate the characteristics and performance of components, systems and processes.
- Select and appraise appropriate ICT tools to a variety of engineering problems.
- Integrate electrical, electronic and mechanical components and equipment with transducers, actuators and controllers in creatively computer-controlled systems
- Analyse the performance of electric power generation, control and distribution systems
- Select appropriate manufacturing method considering design requirements
- Evaluate mechanical power and energy engineering designs, processes and performances and propose improvements.
- Analyse the performance of the basic types of internal combustion engines and hydraulic machines

Subject-Based Practical skills

- Use computational facilities and techniques, measuring instruments, workshops and laboratory equipment to design experiments, collect, analyse and interpret results.
- Apply quality assurance procedures and follow codes and standards.
- Exchange knowledge and skills with engineering community and industry.
- Test and examine components, equipment and systems of electrical power and machines.
- Specify and evaluate manufacturing of components and equipment related to electrical power and machines.
- Describe the basic Thermal and fluid processes mathematically and use the computer software for their simulation and analysis
- Work in mechanical power and energy operations, maintenance and overhaul

Skills for life and work (general skills)

- Collaborate effectively within multidisciplinary team.
- Demonstrate efficient IT capabilities.
- Effectively manage tasks, time, and resources.
- Search for information and engage in life-long self-learning discipline.
- Acquire entrepreneurial skills.

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

- IT activities with feedback
- Research skills-based activities with feedback
- Practical implementation by doing laboratory experiments
- Project work

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

- The demands of the study medium
- Planning activities with feedback

Assessment

Knowledge is assessed by

- Coursework
- Essays
- Examinations
- Report writing

Thinking skills are assessed by

- Coursework
- Examinations
- Project work

Practical skills are assessed by

- Practical reports
- Portfolio completion
- Oral examination

- Laboratory experiments

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

- Project work
- Group work
- Presentation and reports

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

Work or Study Placements

Although there is no compulsory placement system we encourage all students to seek work experience during their during the summer vacations. Training could be performed in an industrial/service facility related to the student's program, and must be under the full supervision of the faculty according to the requirements stipulated in Article (37) of the ASU Credit-hour Educational Programmes bylaws. The training is mandatory for the normal ASU degree.

Programme Structure

All programmes 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 programme.
- 4 Equivalent in standard to the first year of a full-time undergraduate degree programme.
- 5 Equivalent in standard to the second year of a full-time undergraduate degree programme.
- 6 Equivalent in standard to the third year of a full-time undergraduate degree programme.
- 7 Equivalent in standard to a Masters degree.

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

The module structure of this programme:

Level	UEL Module Code	ASU Module Code	Module title	Credit Weighting	Core/ Option	Available by Distance Learning?

						Y/N
3	EG3XXX	EG9311	Applied Mathematics for Engineering Problems	30	Core	N
3	EG3XXX	EG9312	Electrical Circuits, Measurements and Electro-Magnetic Fields	30	Core	N
3	EG3XXX	EG9313	Energy Resources and Thermodynamics	30	Core	N
3	EG3XXX	EG9314	Materials and Mechanical Manufacturing Engineering	30	Core	N
4	EG4XXX	EG9421	Heat Transfer and Fluid Mechanics	30	Core	N
4	EG4XXX	EG9422	Electrical Machines and Power Engineering	30	Core	N
4	EG4XXX	EG9423	Theory of Machines and Machine Construction	30	Core	N
4	EG4XXX	EG9424	Fundamentals of Electronics and Control	30	Core	N
5	EG5XXX	EG9531	Solar Energy	30	Core	N
5	EG5XXX	EG9532	Power Electronics and Automation Systems	30	Core	N

5	EG5XXX	EG9533	Combustion Engines and Flow Machines	30	Core	N
5	EG5XXX	EG9534	Machine Design and Electromechanical Industrial Application	30	Core	N
6	EG6XXX	EG9641	Economics of Generation and Distribution Network Protection	30	Core	N
6	EG6XXX	EG9642	Renewable Energy and Network Interfacing	30	Core	N
6	EG6XXX	EG9643	Graduation Project	30	Core	N
6	EG6XXX	EG9644	Energy Generation Technical Studies	30	Option	N
6	EG6XXX	EG9645	Energy Management Technical Studies	30	Option	N

Please note: Optional modules might not run every year, the programme 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.

A core module for a programme 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 programme is a module selected from a range of modules available on the programme.

The overall credit-rating of this programme 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.

Programme Specific Regulations

This is a double award programme leading to the award of both a UEL and ASU

qualification. Each institution shall be responsible for the issuing of the award certificate of that institution.

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 programme is 4 years full-time or 8 years part-time.

A student cannot normally continue study on a programme after 4 years of study in full time mode unless exceptional circumstances apply and extenuation has been granted. The limit for completion of a programme in part time mode is 8 years from first enrolment.

Further Information

More information about this programme is available from:

- The UEL web site (www.uel.ac.uk)
- The programme 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
- FoE-ASU website (<https://eng.asu.edu.eg/UEL>)
<https://eng.asu.edu.eg>

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

Cost

- The students pay the annually approved credit hour rate by the Board. For the academic year 2019/20 the rate of the Credit Hour is 1500L.E. Students register a maximum of 18 Credit hours per semester. Two Credit Hours are required annually to be paid for training supervision for 3 years only.

Additional costs:

- Late registration is not final unless there is a vacancy in the courses, and the student should pay late registration fee besides the prescribed academic service fees. The late registration fee is an administrative fee added and decided by the Credit hour programmes board and approved by the Council of

the Faculty of Engineering, ASU. It should not exceed the fees of a one credit hour.

- Students will pay all tuition/study/workshop/course field trip/field training fees directly to ASU. Student pay only the direct cost of the field trips, and two credit hours for field training supervision.

Alternative Locations of Delivery

N/A