PROGRAMME SPECIFICATION

Programme Aim and Title	BEng (Hons) Manufacturing Engineering
Intermediate Awards Available	Ordinary, DipHe, CertHE, University Certificate
Teaching Institution(s)	Ain Shams University
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	QAA Subject Benchmark Statement for Engineering February 2015
Additional Versions of this Programme	N/A
Date Specification Last Updated	May 2019

Programme Aims and Learning Outcomes

This programme is designed to give you the opportunity to:

- Use mathematics and physical and engineering sciences and systems analysis tools in engineering products, machines and electro-mechanical systems design and manufacture.
- Demonstrate the ability to design, develop, implement, and improve manufacturing systems that incorporates people, materials, information and equipment.
- Apply and integrate knowledge and understanding of other engineering and non-engineering disciplines to support design activities.
- Plan, execute and undertake critical analysis of results of practical and/or simulation tests of design solutions.
- 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.
- Analyse the interaction between managerial tasks, and the human elements in production and industry in general.
- Prepare for progression in career and educational development to pursue postgraduate studies.

What you will learn:

Knowledge

- The principles of mechanical and manufacturing engineering; application of appropriate mathematical, computational techniques and methods to model and analyse real-world engineering problems.

- Basic science and engineering fundamentals in mechanics, electronics and automation;
- The fundamental manufacturing processes and the most recent technologies that are used in that field. In addition to, the most important materials used in industry, their structure, and their modes of failure.
- Design process, design methodologies, manufacturing and operational practice.
- Management and business practices and engineers' roles in society.

Thinking skills

- Evaluate commercial risks and technical risks in unfamiliar circumstances.
- Interpret and analyse results, data and other information to present them in suitable forms.
- Select appropriate manufacturing method considering design requirements.
- Solve a wide range of problems related to the analysis, design, and construction of production systems.
- Analyse and solve the problems presented by industrial entities.
- Create solutions to mechatronics systems especially to manufacturing, maintenance and interfacing problems in a creative way, taking account of industrial and commercial constraints.

Subject-Based Practical skills

- The knowledge and skills to function effectively in industry to be able to progress in career and educational development.
- Prepare engineering drawings, computer graphics and specialized technical reports, process plans for manufacturing and communicate accordingly.

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.
- Demonstrate efficient IT capabilities.
- Effectively manage tasks, time, and resources.

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
- Successfully completion of home assignments
- Seminar ‘s discussions and activities

Practical skills are developed through
- Computer simulation exercises
- Research skills-based activities with feedback
- Experiments in Labs
- Case studies.

Skills for life and work (general skills) are developed through
- Project work
- Working in a team
- Submitting and discussing presentations
- Managing time and resources to finish task in time

Assessment

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
- Project work (ability to manage time and resources before the deadline)
- Oral Presentations
- Group work (ability to work in a team and evidence of group working)
- Presentation skills in presenting the work

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	EG11311	Mechanical and Electrical Engineering Principles	30	Core	N
3	EG3XXX	EG11312	Engineering Materials and Manufacturing Technology	30	Core	N
3	EG3XXX	EG11313	Engineering Mathematics and Fluid Mechanics	30	Core	N
3	EG3XXX	EG11314	Engineering Design and Practice	30	Core	N

4	2	EG11421	Mechanical Systems and Design	30	Core	N
4	2	EG11422	Design for Manufacture	30	Core	N
4	2	EG11423	Automation for Manufacturing Processes	30	Core	N
4	2	EG11424	Manufacturing Management Essentials	30	Core	N
5	3	EG11531	Computer and Automation in Manufacturing	30	Core	N
5	3	EG11532	Advanced Manufacturing Management	30	Core	N
5	3	EG11533	Manufacturing Processes	30	Core	N
5	3	EG11534	Manufacturing Systems and Technologies	30	Core	N
6	4	EG11641	Design Future and Interactions	30	Core	N
6	4	EG11642	Trends in Modern Manufacturing Systems and Technologies	30	Core	N
6	4	EG11643	Quality Control and Production Planning	30	Core	N
6	4	EG11643	Individual Research Project	30	Core	N

Additional details about the programme module structure:
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
- The ASU web site (https://eng.asu.edu.eg/.)
- The programme academic regulations are available at https://eng.asu.edu.eg/BylawsAndRegulations

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.

Additional costs:

Training fees are equivalent to the cost of 2 credit hours per academic year and the student should register 6 credit hours for training during her/his study. These costs are for providing training opportunities to students and to follow up their performance during training to ensure the quality of the field training. The students pay the annually approved credit hour rate by the board and for the academic year 2019/20 the rate of

the Credit Hour is L.E. 1500. No additional fees are required for workshops, seminars, filed visits organized by the manufacturing program.

Alternative Locations of Delivery

N/A