COURSE SPECIFICATION

Course Aim and Title	BEng (Hons) Aeronautical Engineering
Intermediate Awards Available	BEng Engineering Dip HE Engineering Cert HE Engineering
Teaching Institution(s)	UEL
Alternative Teaching Institutions (for local arrangements see final section of this specification)	NA
UEL Academic School	Architecture, Computing and Engineering
UCAS Code	H734
Professional Body Accreditation	NA
Relevant QAA Benchmark Statements	Engineering Oct 2019
Additional Versions of this Course	BEng(Hons) Aeronautical Engineering with Foundation BEng(Hons) Aeronautical Engineering with Placement
Date Specification Last Updated	June 2023

Course Aims and Learning Outcomes

The aeronautical course combines principles from aerodynamics, electronics, control and sustainability to design, manufacture, testing safety, management and efficiencies with aeronautical and air transport context. You will, on this key undergraduate course, gain this knowledge of engineering processes and systems, product design, digital electronics and integration of these technologies.

The general aim is to provide a course of study for aeronautical engineers of sufficient width and depth to meet the demands of their profession. A specific aim of the course is to promote an active interest in engineering and to encourage you to respond to changes and developments within sustainability, aerodynamics, design engineering, mechanical systems and related wider engineering sector.

The course is designed with the following aims:

- Developing learners' techniques for analysing and exploring an understanding of aircraft design, including aircraft structures, aerodynamics and their performance.
- Providing learners a stimulating learning environment for understanding the role of the aeronautical engineer as an important professional in society and the engineering sectors.
- Enhancing learners' skillset to deal with issues in aeronautical engineering, making sound judgements and communicate conclusions clearly to specialist and non-specialist audiences.
- Enabling learners to gain extensive knowledge and understanding of recent theories and hands-on work within aerodynamics, design engineering, mechanical and mechatronics systems and related wider engineering sector.

- Enabling learners to plan, execute and undertake critical analysis of results of practical and/or simulation tests within aeronautical engineering context.
- Providing learners an experience that demonstrate self-direction and originality in solving problems, and act autonomously in planning and implementing tasks at a professional level with clear understanding of health and safety, ethics, sustainability and legal dimensions.
- Embedding industry readiness in learners through engagement with industry experts and real work experience*, within the core elements of learning and assessment.
- Prepare learners for progression in career and educational development to pursue postgraduate studies.

for optional placement programme only.

What you will learn:

Knowledge
- The principles of aeronautical engineering; application of appropriate mathematical, computational techniques and methods to model and analyze real-world engineering problems.
- How to design aircrafts, design methodologies, flight systems, navigation, subsonic and supersonic aerodynamics, manufacturing and operational practice for aviation sector.
- Management and business practices and aeronautical engineers' roles in society.

Thinking skills
- How to evaluate commercial risks and technical risks in unfamiliar circumstances.
- How to interpret and analyze results, data and other information to present them in suitable forms.

Subject-Based Practical skills
- The knowledge and skills to function effectively in aeronautical 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 practical
- 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. Placement is not guaranteed and is not a mandatory part of the course. Those students who opt for a year out placement will be enrolled on a 120P-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:

Level	Module Code	Module Title	Credit Weighting	Core/Option	Available by Distance Learning? Y/N
4	EG4098	Mental Wealth: Engineering Profession 1	20	Core	N
4	EG4014	Engineering Materials	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	EG5033	Applied Electronics	20	Core	N
5	EG5027	Dynamics and Control	20	Core	N
5	EG5025	Applied Mechanics	20	Core	N
5	EG5062	Applied Aeronautical Engineering	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 (Aeronautical Project)	40	Core	N
6	EG6025	Systems Integration	20	Core	N
6	EG6062	Advanced Aeronautical Engineering	20	Core	N
6	EG6165	Sustainable and Green Aviation Technologies	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

None

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)
- 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