Programme Specification (Postgraduate)

FOR ENTRY YEAR: 2026/27

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1. Programme title(s) and code(s)

MSc in Aerospace Engineering
MSc in Aerospace Engineering with Industry
Postgraduate Diploma (PGDip) in Aerospace Engineering *
Postgraduate Diploma (PGDip) in Aerospace Engineering with Industry*
Postgraduate Certificate (PGCert) in Aerospace Engineering *

Notes

* An award marked with an asterisk is only available as an exit award and is not available for students to register onto.

HECOS Code

HECOS Code	%
100115	100

2. Awarding body or institution

University of Leicester

3. a) Mode of study

MSc in Aerospace Engineering: Full time
MSc in Aerospace Engineering with Industry: Full time.
With Industry: The taught modules would all be taken in the first two semesters.
This is followed by the industrial placement taken following the end of the first-year exam period.
This is followed by the in-house project for approximately 13 weeks.

b) Type of study

Campus-based

With Industry: The Industrial placement is off campus, on the site of the Placement Provider.

4. Registration periods

MSc in Aerospace Engineering (Full-time September Start)
The normal period of registration is 12 months.
The maximum period of registration is 24 months.

MSc in Aerospace Engineering with Industry: (September Start)
The normal period of registration is 24 months.
The maximum period of registration is 36 months.

MSc in Aerospace Engineering (Full- time January start)
The normal period of registration is 16 months.
The maximum period of registration is 28 months.

MSc in Aerospace Engineering with Industry (January start):
The normal period of registration is 28 months.
The maximum period of registration is 40 months.

5. Typical entry requirements

Candidates should normally have at least a good second-class honours degree in Aerospace Engineering, Mechanical Engineering, or a related Engineering subject, from a British University or its equivalent; or a qualification recognised by the University as equivalent.

Candidates whose first language is not English will be required to provide evidence of appropriate language skills. A score of 6 in IELTS or an equivalent is required, with no less than a score of 5.5 in any element, but if candidates have been instructed in their u/g courses in English in certain countries for a period of at least two years, this may be deemed adequate. Courses at the University's English Teaching Unit are offered to candidates who fail this requirement. The course must be completed before the MSc can begin.

6. Accreditation of Prior Learning

No accreditation of prior learning is accepted.

7. Programme aims

This course will provide the knowledge and skills required of a professional engineer to work in aerospace technology. The content is organized in four themes: "Control Engineering", "Fluid Dynamics", and "Mechanics of Materials" and "Spacecraft Systems".

The programmes aim to satisfy the criteria of the accrediting engineering institutions. These are based on the Engineering Council's Accreditation of Higher Education Programmes (AHEP4) learning outcomes. These are defined in 5 overarching engineering specific areas of learning:

- Science and Mathematics (M1)
- Engineering Analysis (M2-M4)
- Design and Innovation (M5)
- The Engineer and Society (M7)
- Engineering Practice (M16-M17)

Programme-level Intended Learning Outcomes for the degree programmes are mapped, using the shorthand codes above, to these overarching outcomes in section 9 - Programme Outcomes below. Each of these overarching engineering specific areas of learning are mapped to module-level Intended Learning Outcomes and assessment elements, and are detailed in the module specifications.

For the aims, learning outcomes and special features of the Year in Industry, please see https://le.ac.uk/study/postgraduates/courses/industry-2025-26

8. Reference points used to inform the programme specification

- QAA Benchmarking Statement
- Framework for Higher Education Qualifications (FHEQ)
- UK Quality Code for Higher Education
- University Education Strategy

- University Assessment Strategy [log in required]
- University of Leicester Periodic Developmental Review Report
- External Examiners' reports (annual)
- United Nations Education for Sustainable Development Goals
- Student Destinations Data
- Engineering Accreditation Board (EAB) Masters Degree other than Integrated Masters, and EngD Learning Outcomes (AHEP 4th Edition)
- UK-SPEC (UK Standard for Professional Engineering Competence)
- Engineering Council Compensation and Condonement requirements November 2021

9. Programme Outcomes

Unless otherwise stated, programme outcomes apply to all awards specified in 1. Programme title(s).

a) Discipline specific knowledge and competencies

i) Knowledge

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Apply comprehensive knowledge of the mathematics of fluid dynamics, robust control, mechanics of materials, and engineering principles to the solution of complex aerospace engineering problems. The knowledge will be informed by a critical awareness of new developments in aerospace engineering and related fields (M1).	Lectures, specified reading, lab classes, design exercises, project supervision and execution.	Modules examinations, lab reports, design exercises and course work reports, project dissertation.

ii) Concepts & Techniques

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Explain materials design concepts and implement selection and testing of materials. M2	Lectures, specified reading, lab classes, design exercises, project supervision and execution.	Modules examinations, lab reports, design exercises and course work reports, project dissertation.
Explain and apply systems engineering concepts to aerospace engineering design problems. M2	Lectures, specified reading, lab classes, design exercises, project supervision and execution.	Modules examinations, lab reports, design exercises and course work reports, project dissertation.

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Design solutions for complex aerospace fluid flow, control and structural mechanics problems that evidence some originality and meet a combination of societal, user and customer needs as appropriate. This will involve consideration of applicable health & safety, diversity, inclusion, cultural, societal, environmental and commercial matters, codes of practice and industry standards (M5).	Independent project, project supervision.	Major project report and presentation.
Select and apply state-of-the-art computational and analytical techniques for the design and simulation of complex control systems and fluid flow problems, discussing the limitations of the techniques employed. (M3).	As above	As above

iii) Critical analysis

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Asses and critically evaluate results presented in the technical literature. M4	Lectures, specified reading, lab classes, design exercises, project supervision and execution.	Modules examinations, lab reports, design exercises and course work reports, project dissertation.

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Formulate and analyse complex aerospace engineering problems and appraise solutions to design problems. This will involve evaluating data using first principles of mathematics, statistics, and engineering judgment to work with information that may be uncertain or incomplete, discussing the limitations of the techniques employed. (M2).	Lecture, tutorial, computer practical class, coursework assignment, presentation.	Examination, Oral presentation, contribution to discussion, problem-based exercise, project report.
Evaluate the environmental and societal impact of solutions to complex aerospace engineering problems for a full product or process lifecycle and minimise adverse impacts. (M7).	Lecture, group project, independent project.	Project report, coursework assignment, presentation.

iv) Presentation

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Present technical results clearly with a constructive discussion of the findingsy	Lab classes, supervision of design exercises, project supervision and execution. Optional in-sessional English classes.	Lab reports, design exercises and course work reports, project dissertation.
Communicate effectively on complex engineering matters with technical and non-technical audiences, evaluating the effectiveness of the methods used. (M17).	Lab classes, supervision of design exercises, project supervision and execution. Optional in-sessional English classes.	Lab reports, design exercises and course work reports, project dissertation.

v) Appraisal of evidence

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Evaluate the results of design cases in each of the course disciplines and judge if the results met the initial requirements. M2	Lab classes, supervision of design exercises, project supervision and execution.	Lab reports, design exercises and course work reports, project dissertation.
Select and critically evaluate technical literature and other sources of information to solve complex problems. (M4).	Major project work, including team meetings and supervision meetings.	Major project report and presentation.
Evaluate customer and requirements taking into account the wider engineering context (M5).	As above	As above

b) Transferable skills

i) Research skills

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Perform reviews of the technical literature. Demonstrate laboratory skills, Perform data analysis	Lab classes, supervision of design exercises, project supervision and execution.	Lab reports, design exercises and course work reports, project dissertation.
Select and critically evaluate technical literature and other sources of information to solve complex problems. (M4).	Major project work, including team meetings and supervision meetings.	Major project report and presentation.

ii) Communication skills

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Write concise and accurate reports. Participate to discussion in a constructive manner.	Lab classes, supervision of design exercises, project supervision and execution. Optional in-sessional English classes.	Lab reports, design exercises and course work reports, project dissertation.

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Present technical and non-technical information orally, in an appropriate form for a given audience. (M17).	Tutorial, group project, independent research, project supervision.	Presentation
Communicate technical and non-technical information in an appropriate written form for a given audience (M17).	Group project, independent research, project supervision.	Written assignment, project report, group report.

iii) Data presentation & Information technology

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Use effectively a variety of IT tools for design, and data analysis and presentation.	Lab classes, supervision of design exercises, project supervision and execution.	Lab reports, design exercises and course work reports, project dissertation.

iv) Working relationships

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Manage and present progress on a project.	Project supervision and execution.	Project dissertation.
A successful student will be able to function effectively as an individual, and as a member or leader of a team. Evaluate effectiveness of own and team performance (M16).	Lecture, lab classes, tutorial, group project, project supervision.	Group report, presentation, Individual report.

v) Managing learning

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Manage time and work independently	Tutorials, Induction sessions, project supervision and execution.	Module examinations, lab reports, design exercises and course work reports, project dissertation.

vi) Career management

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Write a professional curriculum and exploit networking opportunities.	Tutorials. Optional university career development events	Tutorial feedback and interactions with career development services.

10. Special features

This course is not accredited yet. The course will be submitted for accreditation, with a retroactive effect, at the first available opportunity, after the first cohort of students has completed the course. All modules of the MSc in Aerospace belong also to other MSc courses which are currently accredited, and award rules are consistent with other MSc programmes and the accreditation requirements in preparation for seeking accreditation.

10a. Research-inspired Education

Students on this programme will advance through the four quadrants of the University of Leicester Research-inspired Education Framework as follows:

RiE Quadrant	Narrative
Research-briefed Bringing staff research content into the curriculum.	**Research-briefed** Research-briefed teaching is made possible by the fact that most lecturers and professors in this programme balance dual roles as educators and researchers. They regularly brief students about advances in the aerospace field from fluid dynamics to advanced composite materials. Staff also brief the students that they supervise in individual projects about their research. The topics for the projects are closely aligned with the university's current research interests, fostering the development of problem-solving skills that can be directly applied to engineering practice.
Research-based Framed enquiry for exploring existing knowledge.	**Research-based** Research-based teaching enables students to engage directly with research challenges presented by various scientific experts. Through lectures, workshops, and tutorials, students tackle practical, real-world problems, fostering the development of a wide range of skills such as design, optimisation, and modelling. This program offers students comprehensive exposure to real-world aerospace engineering challenges from the analysis of turbulence using computational fluid dynamics to the use of mathematical modelling, software and control frameworks for the analysis spacecraft control systems. Individual projects are also an opportunity to develop research problem solving skills.
Research-oriented Students critique published research content and process.	**Research-oriented** As part of a research-oriented teaching delivery, students are trained to analyse and evaluate research critically while assessing their own findings to cultivate a solid scientific approach. Additionally, assessments and workshops are designed to reinforce this approach, building both empirical and computational skills with a focus on real-world engineering applications. This is done in different contexts, such as the investigation of mechanical failure modes, the analysis of challenging flow transition problems. Students also critique published research in their individual projects.
Research-apprenticed Experiencing the research	**Research-apprenticed** Essential research practices are apprenticed, including the ability to search for and review research papers, proper referencing and the analysis and validation of research findings. These skills are practiced in individual projects and specialised

process and methods; building new knowledge.	aerodynamics, materials or control focused modules, fostering the development of key competencies. Students also use research analysis skills to promote innovation and work as teams to build new knowledge in engineering design case studies.

As part of studying at a research-intensive university, students on this programme have the following extra or co-curricular opportunities available to them to gain exposure to research culture:

Students on the MSc Aerospace Engineering programme can seize opportunities to engage with professional bodies such as the IMechE and to take part with UG aerospace engineering students in student-led unmanned aerial vehicle design, development and flight activities within the IMechE challenge. Students wishing to gain exposure to this activity will benefit from the support of specialised academic staff. Research-informed guest lectures are also run to allow students to engage with the wider aerospace community.

Teaching on this programme will be research-informed (it draws consciously on systematic inquiry into the teaching and learning process itself) in the following way:

The School supports all staff involved in teaching to gain an accredited Higher Education teaching qualification, in which they demonstrate their use of teaching theory to support their own practice and reflect on their current teaching and continuing professional development.

The teaching and learning in this programme is research informed and draws from the complementary teaching and research experiences of module convenors who share their educational and research best practice through seminars, talks from external educational speakers and researchers and research on aerospace teaching. This is also done through teaching observations allowing staff to share feedback of each other's teaching practice.

11. Indicators of programme quality

The programme is subject to all normal departmental, college and institutional academic quality assurance processes.

12. Criteria for award and classification

This programme follows the standard scheme of taught postgraduate award and classification set out in Senate Regulations – see the version of *Senate Regulation 6 governing taught postgraduate programmes of study* relevant to year of entry.

The following additional award requirements for this programme have been approved:

- This programme follows the Scheme of Assessment for Master degree programmes, comprising 120 credits of taught modules and a 60-credit project. In accordance with Engineering Council requirements for accreditation, a variation applies whereby a maximum of

15 credits may be considered as a “Compensated Pass” for modules with marks between 40% and 49.99%, provided that no other modules are failed (mark between 0% and 39.99%). In addition, the Taught Credit Weighted Average must be 50.00% or above in line with Senate Regulation 6. Students who do not meet this criterion will be considered for an interim award based on the taught component of the programme.

- A student who successfully completes an industry placement but does not meet the award requirements for an MSc may be considered for the exit award of PGDip with industry.

13. Progression points

As defined in Senate Regulations - refer to the version of *Senate Regulation 6 governing taught postgraduate programmes of study* relevant to year of entry.

The following additional award requirements for this programme have been approved:
A Placement Student will revert back to the degree without Industry if:

1. At the Board of Examiners following the 1st and the 2nd semester of study, they fail to achieve a pass mark (50.00%) for all modules.
2. They fail to secure an industrial placement role.
3. They fail to pass the assessment related to the industrial placement.
4. The industrial placement ends early due to the behaviour of the Placement Student not being in accordance with the University’s Regulations for Students, Student Responsibilities. The Placement Student will need to return to the University and carry out an in-house project in the School or Department, as per the normal non-Industry MSc. To prevent such an incident from happening, processes are in place to identify any possible issues or concerns early in the industrial placement role. This includes a start check, regular communications, visits to the workplace (physical and/or virtual) and evaluation. Communication and contact between the Placement Student, Placement Provider and University provides support should issues arise.
5. They discontinue their industrial placement and carry out an in-house project in the School or Department, as per the normal non-Industry MSc.

Any student not meeting the criteria set under point 1 will typically revert to the non-industry variant of the degree programme and undertake any re-sits as determined by a Board of Examiners in line with Senate Regulations.

The Board of Examiners may use its discretion when considering modules failed with accepted mitigating circumstances.

For further details regarding the progression requirements of the "with industry" variant of the programme please see: https://le.ac.uk/study/postgraduates/courses/industry-2025-26.

In the event that a Placement Student is moved to the standard campus-based MSc, the Placement Provider will be notified immediately. For overseas students, the UKVI will also be informed immediately. Placement Providers will be made aware that any contract of employment shall be made subject to satisfactory completion of the taught part of the MSc.

In cases where a student has failed to meet a requirement to progress, he or she will be required to withdraw from the course and a recommendation will be made to the Board of Examiners for an intermediate/exit award where appropriate.

14. Rules relating to re-sits or re-submissions

As defined in Senate Regulations - refer to the version of *Senate Regulation 6 governing taught postgraduate programmes of study* relevant to year of entry.

15. External Examiners reports

The details of the External Examiner(s) for this programme and the most recent External Examiners' reports for this programme can be found at exampapers@Leicester [log-in required]

16. Additional features (e.g. timetable for admissions)

UNIVERSITY OF LEICESTER

Programme Specification (Postgraduate) FOR ENTRY YEAR: 2026/27

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Appendix 1: Programme structure (programme regulations)

The University regularly reviews its programmes and modules to ensure that they reflect the current status of the discipline and offer the best learning experience to students. On occasion, it may be necessary to alter particular aspects of a course or module.

MSc in Aerospace Engineering (and with Industry)

Credit breakdown

Status	Year long	Semester 1	Semester 2	Other delivery period
Core taught	n/a	30 credits	60 credits	n/a
Optional	n/a	30 credits	n/a	n/a
Dissertation/project	n/a	n/a	n/a	60 credits

180 credits in total

Level 7/Year 1 September Start 2026/27

Core modules

Delivery period	Code	Title	Credits
Semester 1	EG7010	Engineering Design Case Study	15 credits
Semester 1	EG7115	Fluid Instability, Transition and Turbulence	15 credits

Delivery period	Code	Title	Credits
Semester 2	EG7125	Computational Fluid Dynamics	15 credits
Semester 2	EG7126	Advanced Composite Materials	15 credits
Semester 2	EG7422	Advanced Gas Turbines	15 credits
Semester 2	EG7040	Attitude & Orbit Control Systems	15 credits
Term 3	EG7020	Individual Project	60 credits

Notes

Option modules

Delivery period	Code	Title	Credits
Semester 1	EG7015	Rotorcraft Mechanics and Control	15 credits
Semester 1	EG7116	Advanced Solid Mechanics	15 credits
Semester 1	EG7413	Spacecraft Systems Engineering	15 credits

Notes
This is an indicative list of option modules and not definitive of what will be available. Option module choice is also subject to availability, timetabling, student number restrictions and, where appropriate, students having taken appropriate pre-requisite modules.

Level 7/Year 2 September Start 2027/28 (for students on the with Industry variant)

Core modules

Delivery period	Code	Title	Credits
Choose an item.	ADEG7223	On Placement*	n/a
Choose an item.	EG7020	Individual Project	60 credits

The ”with industry” programme includes an industrial placement following the end of the final exam period of the taught phase of the programme, with students returning to UoL to complete the project/dissertation after their placement.

Level 7/Year 1 January Start 2026/27

Core modules

Delivery period	Code	Title	Credits
Semester 2	EG7125	Computational Fluid Dynamics	15 credits
Semester 2	EG7126	Advanced Composite Materials	15 credits
Semester 2	EG7422	Advanced Gas Turbines	15 credits
Semester 2	EG7040	Attitude & Orbit Control Systems	15 credits

Level 7/Year 2 January Start 2027/28

Core modules

Delivery period	Code	Title	Credits
Semester 1	EG7010	Engineering Design Case Study	15 credits
Semester 1	EG7115	Fluid Stability, Transition and Turbulence	15 credits
Choose an item.	ADEG7223	On Placement* (for students on the with Industry variant)	n/a
Choose an item.	EG7020	Individual Project	60 credits

Option modules

Delivery period	Code	Title	Credits
Semester 1	EG7015	Rotorcraft Mechanics and Control	15 credits
Semester 1	EG7116	Advanced Solid Mechanics	15 credits
Semester 1	EG7413	Spacecraft Systems Engineering	15 credits

Notes
This is an indicative list of option modules and not definitive of what will be available. Option module choice is also subject to availability, timetabling, student number restrictions and, where appropriate, students having taken appropriate pre-requisite modules.

The ”with industry” programme includes an industrial placement following the end of the final exam period of the taught phase of the programme, with students returning to UoL to complete the project/dissertation after their placement.

Appendix 2: Module specifications

See taught postgraduate module specification database [login required] (Note - modules are organized by year of delivery).