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

MSc in Advanced Electrical and Electronic Engineering

Postgraduate Diploma (PGDip) in Advanced Electrical and Electronic Engineering (exit award only)

Postgraduate Diploma (PGDip) in Advanced Electrical and Electronic Engineering with Industry (exit award only)

Postgraduate Certificate (PGCert) Advanced Electrical and Electronic Engineering (exit award only)

Notes

* Exit awards only

HECOS Code

HECOS Code	%
100163	100

2. Awarding body or institution

University of Leicester

3. a) Mode of study

Full-time

Full-Time
MSc in Advanced Electrical and Electronic Engineering: Full time
MSc in Advanced Electrical and Electronic 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, which is between 3 and 12 months long, and would be taken following the end of the first year Jan exam period. This is followed by the in-house project, taking 10 weeks.

b) Type of study

Campus-based (taught modules and project)
With Industry: The Industrial placement is off campus, on the site of the Placement Provider.

4. Registration periods

MSc in Advanced Electrical and Electronic Engineering (September start, Full-time)
The normal period of registration is 12 months.
The maximum period of registration is 24 months.

MSc in Advanced Electrical and Electronic Engineering with Industry (September start Full Time):
The normal period of registration is 24 months.
The maximum period of registration is 36 months.

5.   Typical entry requirements

Candidates should have at least a good second-class honours degree in a relevant 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.

English language

Candidates whose first language is not English will be required to provide evidence of appropriate language skills. A score of 6.0 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 normally considered.

7.   Programme aims

The course provides a coherent selection of electrical and electronic engineering subjects to advanced level. Module combinations include communications and signal processing through control engineering to electrical machines and drives. The course is ideal for the engineer who wishes to follow a career in the design and implementation of electrical and electronic circuits within the wider engineering environment.

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

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 Learning Strategy
- University Assessment Strategy
- 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 3rd Edition)

- UK-SPEC (UK Standard for Professional Engineering Competence)
- Engineering Council Compensation and Condonement requirements November 2018.

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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?
Core knowledge of Electrical and Electronic Engineering, and closely related subjects such as Communications, Signal Processing and Control	Lectures, Specified reading, Laboratory classes, Design exercises, Tutorials	Module examinations, Laboratory, design exercise and literature review reports, oral presentations, tutorial performance

ii) Concepts

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
A variety of concepts in Electrical and Electronic Engineering and related subjects will be presented at an advanced level	Lectures, Practical classes, Tutorials	Module examinations, Laboratory, design exercise and literature review reports, oral presentations, tutorial

iii) Techniques

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Practical demonstration of experimental methods, Competent use of a variety of engineering design tools.	Laboratory classes, Individual Project and module design exercise supervision, Practical demonstrations, Lectures	Laboratory and design exercise reports, module design exercise assessment, Individual Project progress and report, Module examinations

iv) Critical analysis

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Critical appraisal of results. Critical review of literature	Laboratory, design exercise and project supervision	Laboratory, module design exercise and literature review reports, Project progress and report

v) Presentation

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Presentation of scientific results, Participation in scientific discussion	Tutorials, Module seminars, Laboratory classes, module design exercise supervision, Project supervision	Module presentations, Laboratory, module design exercise and Individual project report

vi) Appraisal of evidence

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Experimental methods, Project design	Lectures, Laboratory classes, Project supervision	Written examinations, laboratory and design exercise reports, Project reports

b) Transferable skills

i) Research skills

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Literature review, Experimental design, Laboratory skills, Data analysis	Tutorials, lectures, Laboratory classes, module design exercise work, Project supervision meetings	Module design exercise reports and oral presentations, Course work, Individual project report

ii) Communication skills

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Report writing, Scientific Communication	Project supervision meetings, laboratory and design exercise classes, Tutorials	Laboratory, design exercise and literature review reports, Individual project report

iii) Data presentation

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
IT, Analytical and graphical methods, CAD drawings, Statistics	Project supervision meetings, course work (laboratories, module design exercises)	Seminars, Course work reports, Project reports, Module examinations

iv) Working relationships

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Project management, Organization skills, Time management, Working in groups	Project supervision meetings, Group working in modules (laboratories and design exercises)	Module design exercise assessment, Seminar performance

v) Managing learning

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Study skills, Information management, Developing specialization and interests, Project management	Tutorials and seminars, Library and IT skills sessions, project supervision meetings	Course work, module design exercise assessment, project assessment

10. Special features

The course is accredited by IET and InstMC subject to 5 yearly re-accreditation.

11. Indicators of programme quality

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

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12. Criteria for award and classification

As defined in Senate Regulation 6: Regulations governing taught postgraduate programmes of study.

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

- This programme follows the Scheme of Assessment for Master degree programmes with a structure of 120 credits of taught modules and a project of 60 credits, with the variation (required by the Engineering Council for accreditation purposes) that a maximum of 15 credits may be failed at grade D (40-49%) and no credits failed at grade F (0-39%). Students who fail to 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 Regulation 6: Regulations governing taught postgraduate programmes of study.

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

A Placement Student will revert back to the degree without Year in Industry if:

1. At the semester 1 exam board, they have less than one module at merit level and any failed modules at <50%. No progression rule is applied at the semester 2 exam board. In the case of failed modules with mitigating circumstances, the semester 1 board will use its discretion.
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.

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 UKBA will also be informed immediately. Placement Provider's will be made that any contract of employment shall be made subject to satisfactory completion of the taught part of the MSc.

Three months is the minimum time required for an industrial placement to be formally recognised. If the industrial placement is terminated earlier than 3 months as a result of event outside of the Placement Students control (for example redundancy, or company liquidation), the following process will be adopted:

1. If the Placement Student has completed less than 2 months, they will be supported to search for another placement to take them up to the required minimum of 3 months for the industrial placement to be formally recognised. If the Placement Student does not find a placement to meet this criteria they will be required to suspend and transferred onto the degree without industry.

2. If the Placement Student has completed 2 months, they will be supported to search for another placement to take them up to the 3 months required for the industrial placement to be formally recognised. If the Placement Student cannot source an additional placement to take them to 3 months, assessments related to the industrial placement will be set for the student to make it possible for the individual learning objectives for the industrial placement to be met. This will allow with industry to be recognised in the degree certificate.

3. The duration of time between the two Placement Providers to meet the minimum 3 months of an industrial placement must not exceed the period of time required to comply with visa requirements.

4. A Placement Student is permitted to undertake an industrial placement which runs across two academic years.

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

As defined in Senate Regulation 6: Regulations governing taught postgraduate programmes of study.

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]

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.

Updates to the programme

Module	Update
EG7217 Spacecraft Communications	Name changed from Advanced Communications and moved to Semester 2
EG7227 Artificial Intelligence Architectures	Moved to Semester 1
EG7040 Attitude and Orbit Control Systems	Name changed from Robust and Non-linear control

MSc in Advanced Electrical and Electronic Engineering

Credit breakdown

Status	Year long	Semester 1	Semester 2	Other delivery period
Core taught	n/a	45 credits	60 credits	n/a
Optional	n/a	15 credits	n/a	n/a
Dissertation/project	n/a	n/a	n/a	60 credits

180 credits in total

Level 7/Year 1   2023/24

Core modules

Delivery period	Code	Title	Credits
Semester 1	EG7010	Engineering Design Case Study	15 credits
Semester 1	EG7034	Advanced Electrical Machines	15 credits
Semester 2	EG7217	Spacecraft Communications	15 credits
Semester 1	ADEG7221	Placement Preparation 1*	n/a
Semester 1	EG7227	Artificial Intelligence Architectures	15 credits
Semester 2	EG7324	Signal Processing	15 credits
Semester 2	EG7035	Electronically Controlled Drives	15 credits
Semester 2	EG7040	Attitude & Orbit Control Systems	15 credits
Semester 2	ADEG7222	Placement Preparation 2*	

Notes
The "with industry" programme includes an industrial placement of 3-12 months, 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.

Option modules

Delivery period	Code	Title	Credits
Semester 1	EG7015	Rotorcraft Mechanics and Control	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   2024/25

Core modules

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

The "with industry" programme includes an industrial placement of 3-12 months, 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](Note - modules are organized by year of delivery).