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

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

MSc in Advanced Electrical and Electronic Engineering with Management
MSc in Advanced Electrical and Electronic Engineering with Management and Industry
Postgraduate Diploma (PGDip) in Advanced Electrical and Electronic Engineering with Management*
Postgraduate Diploma (PGDip) in Advanced Electrical and Electronic Engineering with Management and Industry *
Postgraduate Certificate (PGCert) in Engineering *
Postgraduate Certificate (PGCert) in Engineering with Management *
Postgraduate Certificate (PGCert) in Management *

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	%
100163	75
100089	25

2. Awarding body or institution

University of Leicester

3. a) Mode of study

Full-time

With Industry (Full-time) only: The taught modules would all be taken in the first two semesters. This is followed by the industrial placement, and is taken following the end of the first year May/June exam period. This is followed by the in-house project, taking 13 weeks.

b) Type of study

Campus-based

The Industrial placement ('with Industry' programme only) is off campus, on the site of the Placement Provider.

4. Registration periods

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

MSc in Advanced Electrical and Electronic Engineering with Management and Industry (full-time, September start):
The normal period of registration is 24 months.
The maximum period of registration is 36 months.

5. Typical entry requirements

Academic:
Candidates should normally have at least a good second class honours degree in a relevant subject from a British university; or a qualification recognized by the University as equivalent.

English language
Candidates whose first language is not English will be required to provide evidence of appropriate language skills. A score of 6.5 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

N/A

7. Programme aims

This is an advanced career entry programme focused on industrial careers in the engineering sector. The technical focus of this programme is study of 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 specialise in electrical disciplines in combination with a rigorous introduction to those management theories, models, frameworks and techniques that are likely to be important to a professional Engineer. The combination of advanced technical Engineering skills and knowledge of Management theory and practice equips students with the knowledge and skills required to secure leadership roles in global engineering industries. At the end of the programme students should:

- Demonstrate specific knowledge of advanced topics in engineering, specifically electrical and electronic technologies, and to be able to apply this knowledge in the design and simulation of real-world systems;
- Demonstrate clear communication skills and be competent users of IT communication techniques (e.g. oral presentation and report writing);
- Work effectively as part of both multi- and single-disciplinary teams;
- Have knowledge of core management subjects, be able to explain them, critique them, select, apply them to engineering management situations;
- Pursue research (MSc graduates only);

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?
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, Group discussion, directed reading and exercises, private study, assignment feedback: formative and summative.	Module examinations, Laboratory, design exercise and literature review reports, oral presentations and tutorial performance. Essays (individual), group discussions, computer based exercises, case study exercises. Research proposal, ethics approval and dissertation.

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
A core knowledge of management subjects including the business environment, accountability, representation and control. Knowledge of the quantitative and qualitative methods used in management research and what constitutes a methodology. Students should be able to synthesise and apply knowledge to engineering management issues.	Dissertation research process, research methods training.	Module examinations, Laboratory, design exercise and literature review reports, oral presentations and tutorial performance. Essays (individual), group discussions, computer based exercises, case study exercises. Research proposal, ethics approval and dissertation.
A successful student will be able to apply comprehensive knowledge of mathematics, statistics, natural science and engineering principles to the solution of complex problems. Much of the knowledge will be at the forefront of engineering informed by a critical awareness of new development and the wider context of engineering (M1).	As above	As Above

ii) Concepts

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Design of a wide-range of modern Electrical and Electronic Engineering systems.	Lectures, Practical classes, Tutorials, Group discussion, Directed reading, assignment feedback, private-study. Dissertation supervision process, independent research.	Module examinations, Laboratory, design exercise and literature review reports, oral presentations, tutorial. Essays (individual), group discussions, case study exercises, research proposal and dissertation.

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Graduates should be able to explain the core concepts of management as they relate to engineering activities.	Lectures, Practical classes, Tutorials, Group discussion, Directed reading, assignment feedback, private-study. Dissertation supervision process, independent research.	Module examinations, Laboratory, design exercise and literature review reports, oral presentations, tutorial. Essays (individual), group discussions, case study exercises, research proposal and dissertation.
A successful student will be able to design solutions for complex problems that evidence some originality and meet a combination of societal, user, business 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.

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, conventions of academic writing and qualitative and quantitative evaluation to solve management problems relevant to engineering.	Laboratory classes, Individual independent project and research, module design exercise supervision, Practical demonstrations, Lectures. Self-directed private-study. Assignment feedback, formative and summative. Dissertation research process and methods training.	Laboratory and design exercise reports, module design exercise assessment, essays (individual), group discussions, case study exercises, and the dissertation. Module examinations.

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
A successful student will be able to select and apply appropriate computational and analytical techniques to model complex problems, discussing the limitations of the techniques employed. (M3)	As Above	As Above

iv) Critical analysis

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Critical appraisal of results and literature, the discipline of management and its application in engineering, including in different cultural, environmental and organisational contexts.	Laboratory, design exercise and project supervision	Laboratory, module design exercise and literature review reports. Essays (individual), group discussion, case study exercises. Project progress and dissertation.
A successful student will be able to formulate and analyse complex problems to reach substantiated conclusions. This will involve evaluating available data using first principles of mathematics, statistics, natural science and engineering principles, and using 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.

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
A successful student will be able to evaluate the environmental and societal impact of solutions to complex problems (to include the entire life cycle of a product or process) and minimise adverse impacts. (M7)	Lecture, group project, independent project.	Project report, coursework assignment, presentation.

v) Presentation

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Presentation of scientific results, management analysis and conclusions in an organized and appropriate medium to a professional standard with clarity, fluency and coherency. Participation in scientific discussion.	Tutorials, Module seminars, Laboratory classes, module design exercise supervision, Project supervision. group discussion, directed reading and exercises. Dissertation.	Module presentations, Laboratory, module design exercise and dissertation. Essays, examinations and case study exercises.
A successful student will be able to communicate effectively on complex engineering matters with technical and non-technical audiences, evaluating the effectiveness of the methods used. (M17)	Tutorials, Module seminars, Laboratory classes, module design exercise supervision, Project supervision. group discussion, directed reading and exercises. Dissertation.	Module presentations, Laboratory, module design exercise and dissertation. Essays, examinations and case study exercises.

vi) Appraisal of evidence

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Experimental methods, Project design. Ability to locate, organise and assess data, analyse complex ideas and understand and criticise different arguments with independent inquiry at an advanced level.	Lectures, Laboratory classes, Project supervision. Independent research, group discussion, directed reading and exercises.	Written examinations, laboratory and design exercise reports, dissertation, individual essays.

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
A successful student will be able to 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.
A successful student will be able to evaluate customer and user needs 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?
Literature review, Experimental design, Laboratory skills, Data analysis. Demonstration of intellectual independence through identifying and delivering a credible and substantial research project at an advanced level.	Tutorials, lectures, Laboratory classes, module design exercise work. Research methodology module, dissertation supervision meetings.	Module design exercise reports and oral presentations, Course work, dissertation.
A successful student will be able to 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?
Report writing, Scientific Communication. Ability to work collaboratively and responsibility in teams.	Dissertation supervision meetings, laboratory and design exercise classes, Tutorials/dissertation supervision process.	Laboratory, design and group exercise reports. Research proposal and dissertation.
A successful student will be able to present technical and business information orally, in an appropriate form for a given audience. (M17)	Tutorial, group project, independent research, project supervision.	Presentation
A successful student will be able to communicate business and 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

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
IT, Analytical and graphical methods, CAD drawings, Statistics. Ability to locate, organise and marshal evidence and select and apply appropriate software packages for quantitative analysis.	Dissertation supervision meetings, course work (laboratories, module design exercises, case studies and self-directed private study)	Seminars, Course work/case-study reports, Research proposal and dissertation, Module examinations

iv) Working relationships

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Project management, Organization skills, Time management, Collaborative and responsible working in teams.	Dissertation supervision meetings (incl. the establishment of a working relationship with supervisor), Group working in modules (laboratories and design exercises).	Formative assessment based on informal qualitative feedback on content and performance from teacher and peers. Module design exercise assessment, Seminar performance. Dissertation.

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
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, tutorial, group project, project supervision.	Group report, presentation, Individual report.

v) Managing learning

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Study skills, Information management, Developing specialization and interests, Project management. Ability to reflect upon behaviour and skills with a view to personal and professional development. Identifying and delivering a credible and substantial research project at an advanced level.	Tutorials and seminars, Library and IT skills sessions, dissertation supervision meetings and process.	Course work, module design exercise assessment, Research proposal and dissertation.

vi) Career management

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Ability to reflect on motivation, strengths, interests and skills with a view to personal and professional development. Research an area which may be relevant to the student's career preferences.	Tutorials, independent self-directed research into career opportunities using CDS. Dissertation research.	Discussion within forums/tutorials, Development Plan. Dissertation.

10. Special features

The course is accredited by the Institution of Engineering and Technology (IET), subject to 5 yearly re-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
	This engineering programme is built on four pillars of Research-inspired Education, ensuring that students develop both foundational knowledge and advanced research skills. This holistic approach integrates staff expertise, hands-on experience, and active research engagement into the curriculum, fostering critical thinking, creativity, and professional readiness.
Research-briefed Bringing staff research content into the curriculum.	**Research-briefed**: Academics actively incorporate their latest research findings and technological advancements into teaching and learning resources. This allows students to explore case studies, research papers, and cutting-edge developments, providing context and relevance by connecting theoretical engineering concepts to real-world applications and societal challenges.
Research-based Framed enquiry for exploring existing knowledge.	**Research-based**: Supported by academics, the students explore existing knowledge through several modules which involve problem-based learning, independent and group projects, and practical laboratories. These activities promote discovery and intellectual curiosity.
Research-oriented Students critique published research content and process.	**Research-oriented**: Facilitated by a series of training opportunities and assessments, students identify and critically evaluate published research findings and practices. This develops their ability to evaluate and contextualize information within their field and supplements their own experimental design, data analysis, and conclusion derivation.
Research-apprenticed Experiencing the research process and methods; building new knowledge.	**Research-apprenticed**: Under close mentorship of the academic members, the students engage with research-driven projects and practical coursework which are closely related to the ongoing research at the School of Engineering. They engage in all stages of a typical research project, including defining objectives, experimental design, data analysis, and presenting findings both orally and in written formats. This process is supported by regular supervision meetings. This integration of research equips students with the skills and knowledge to excel in both academic and professional engineering environments.

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:

This programme provides various opportunities for students to engage with the ongoing research within the five distinct groups and contribute positively to the vibrant research culture at the School. For instance, students are invited to monthly seminars delivered by researchers and academics which increases their exposure to latest knowledge and provides networking opportunities. Guest lecturers from other institutes and industry are invited regularly to present their solutions to real-world challenges. Moreover, individual and group projects, co-designed by students, are largely aligned with the ongoing research work by the academic supervisors at the School.

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 good practices in research-informed teaching pedagogy are disseminated to module convenors through the School's teaching away day, peer observation of teaching, and via central email communications. Academics are supported to obtain relevant teaching qualifications and encouraged to participate in the yearly teaching and learning conference held at the university. Curriculum delivery is routinely discussed in the Education Committee and meetings between education and programme directors.

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 management and industry.
- Special conditions apply for the PGCert exit route to ensure engineering / management learning outcomes achieved are appropriate to the title of the award. The title of award offered,

a function of the number of modules passed in each discipline and therefore the balance of ILOs achieved, is detailed in the Table below:

AWARD MATRIX FOR TAUGHT MODULES (NUMBER IN BRACKETS IS CREDITS PASSED)		NUMBER OF 15-CREDIT MN7xxx MODULES PASSED			
		0	1	2	3
NUMBER OF 15- CREDIT EG7xxx MODULES PASSED	0	FAIL (0)	FAIL (15)	FAIL (30)	PGCert IN MANAGEMENT (45)
	1	FAIL (15)	FAIL (30)	PGCert IN ENGINEERING WITH MANAGEMENT (45)	PGCert IN ENGINEERING WITH MANAGEMENT (60)
	2	FAIL (30)	PGCert in ENGINEERING WITH MANAGEMENT (45)	PGCert IN ENGINEERING WITH MANAGEMENT (60)	PGCert IN ENGINEERING WITH MANAGEMENT (75)
	3	PGCert in ENGINEERING (45)	PGCert in ENGINEERING WITH MANAGEMENT (60)	PGCert IN ENGINEERING WITH MANAGEMENT (75)	PGDip IN (respective discipline) ENGINEERING WITH MANAGEMENT (90)
	4	PGCert in ENGINEERING (60)	PGCert in ENGINEERING WITH MANAGEMENT (75)	PGDip IN (respective discipline) ENGINEERING WITH MANAGEMENT (90)	MSc/PGDip IN (respective discipline) ENGINEERING WITH MANAGEMENT (105)
	5	PGCert in ENGINEERING (75)	PGDip IN (respective discipline) ENGINEERING WITH MANAGEMENT (90)	MSc/PGDip IN (respective discipline) ENGINEERING WITH MANAGEMENT (105)	MSc/PGDip IN (respective discipline) ENGINEERING WITH MANAGEMENT (120)

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)

Admissions will only take place in October each year.

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 Advanced Electrical and Electronic Engineering with Management (and Industry)

Credit breakdown

Status	Year long	Semester 1	Semester 2	Other delivery period
Core taught	n/a	75 credits	45 credits	n/a
Optional	n/a	n/a	n/a	n/a
Dissertation/project	n/a	n/a	n/a	60 credits

180 credits in total

Level 7/Year 1 2026/27

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

Delivery period	Code	Title	Credits
Semester 2	EG7035	Advanced Electronically Controlled Drives	15 credits
Semester 1	EG7227	Artificial Intelligence Architectures	15 credits
Semester 1	AF7437	Accounting and Finance for Non-Specialist Managers	15 credits
Semester 1	EC7436	Principles of Business Economics	15 credits
Semester 2	MK7406	International Business	15 credits
Term 3	EG7302	Engineering Management Project*	60 credits

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

Core modules

Delivery period	Code	Title	Credits
	ADEG7223	On Placement*	n/a
	EG7302	Engineering Management 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.

Appendix 2: Module specifications

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