



Programme Specification (Postgraduate)

FOR ENTRY YEAR: 2026/27

Date created: 29/04/24 Last amended: 06/08/2024
tap here to enter text.

Version no. 1 Date approved by EQED: Click or

Please note, this programme is currently undergoing review as part of the University's continuous cycle of curriculum enhancement. The information in Appendix 1 represents the current structure and content of the programme. Any future enhancements to the programme in terms of content will be communicated to applicants and offer holders once finalised.

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

MSc Environmental System Science

MSc Environmental System Science with Industry

PG Dip Environmental System Science

PG Cert Environmental System Science*

Notes

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

a) [HECOS Code](#)

HECOS Code	%
100381	100%

2. Awarding body or institution: University of Leicester

3. a) Mode of study Full-time and Part Time

b) Type of study Campus-based

4. Registration periods:

MSc in Environmental System Science

The normal period of registration is 12 months (full time) and 24 months (part time).

The maximum period of registration is 24 months (full time) and 48 months (part time)

Note: Normal and maximum periods of full-time registration for the '**with industry**' MSc variant accommodate **an extra period of registration corresponding to the placement duration**, such that normal full-time period is between 18-24 months (dependent on length of placement obtained) and the maximum period is 36 months. The "with industry" variant is not available on the part-time programme.

PG Dip in Environmental System Science

The normal period of registration is 9 months (full time) and 18 months (part time).

The maximum period of registration is 18months (full time) and 36 months (part time)

5. Typical entry requirements

Students are required to have a first, upper second or lower second class honours degree (or equivalent) in any subject or several years appropriate professional experience. However, students with nonstandard qualifications are encouraged to apply and will be considered on a case-by-case basis. In particular, we give due consideration to prior professional experience gained by mature students in relevant areas of work. In such cases, applicants would be expected to provide detailed information on work experience to enable its full evaluation by admissions staff. We also consider alternative qualifications, for example in different subject areas, where these are supported by relevant experience within the field of the MSc programme. Students for whom English is not their first language are required to achieve a minimum IELTS score of 6.5.

6. Accreditation of Prior Learning

No accredited prior learning would be accepted for exemption from modules on the programme.

7. Programme aims

In this interdisciplinary MSc students are taught concepts of Earth System Science and learn how to apply them in a variety of hydrological, geomorphological, geochemical, ecological and atmospheric contexts. They gain practical experience in a range of techniques for the collection, recording, mapping, analysis and modelling of environmental data and consider the role of Environmental Science and the Environmental Scientist in contributing to and delivering collaborative projects in interdisciplinary work-based, management and policy-setting contexts. The current environmental crises has created a demand for environmental scientists who can use their scientific knowledge, understanding and expertise to help manage and mitigate the detrimental impacts of human activities on the environment. Successful graduates of this course will be well-placed to further their career aspirations in a wide range of environment-related job opportunities within environmental consultancies, local and national governments, non-governmental organisations, commercial and industrial companies, and research institutes. This programme is available as a 'with Industry' degree, giving students an opportunity to apply their skills and knowledge to business challenges, gaining real-world insights into how their studies can be utilised in the workplace.

In addition, for the 'with Industry' variants, additional programme aims apply. [The 'with industry' variant of this programme is in accordance with the University's standard model.](#)

Note: In the absence of M-level-specific benchmarks, the QAA benchmark standard (BS) for the QAA Benchmark for 'Earth Sciences, Environmental Sciences and Environmental Studies' (March 2022) was adapted.

8. Reference points used to inform the programme specification

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

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9. Programme Outcomes

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

MSc Environmental System Science

a) Discipline specific knowledge and competencies

i) Knowledge

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: apply a systems approach to characterising natural environments and their dynamics at a variety of spatial and temporal scales;	Lectures; practicals/workshops; project supervision; guided independent study. In particular, building on the fundamental concepts of systems theory in the construction and application of numerical models of environmental systems.	Practical exercises (especially the application of a systems approach in computer modelling); discussions; guided and independent reading. Employing a systems approach is encouraged in all modules to frame and analyse complex environmental problems and potential solutions.	Technical reports.
evaluate the impacts of anthropogenic environmental change on environmental system behaviour;	Lectures; tutorials, fieldwork, seminars; practicals/workshops; project supervision; guided independent study.	Discussions; field activities; practical exercises; project supervision; guided and independent reading.	Scientific report; infographic; discussion; oral presentation; examination; technical report
inform societal responses to contemporary environmental challenges and aid sustainable decision-making.	Lectures; Seminars; practicals/workshops; guided independent study.	Discussions; practical exercises; worksheets; guided and independent reading.	Briefing paper, oral presentation, report

ii) Concepts

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: critically evaluate the value of adopting a systems approach to studying and managing the environment	Lectures; practicals; workshops; tutorials; ; guided independent study.	Practical exercises (field and computer-based); project supervision; discussions; guided and independent reading.	Technical reports

iii) Techniques

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: critically apply a range of laboratory techniques for the analyses of environmental samples and interpret the results;	Lectures; Practical demonstrations; supervised practicals; guided independent study.	Field sampling and laboratory practicals on analysis of environmental materials; guided and independent reading.	Technical reports
Apply and critically evaluate methods for collecting, processing and analysing spatio-temporal environmental datasets;	Lectures; practicals/workshops; tutorials; field work; project supervision; guided independent study.	Practical exercises; field activities; discussions; project supervision; guided and independent reading.	Technical reports; oral presentation; report; essay
examine the impact of human activity on environmental system characteristics, dynamics and change using numerical modelling, remote sensing and/or GIS	Lectures; practicals/workshops; project supervision; seminars; tutorials; guided independent study.	Practical exercises; worksheets; discussions; project supervision; guided and independent reading.	Scientific report; exam; technical report, oral presentation.

iv) Critical Analysis

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
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Students should be able to: critically analyse environmental systems and system behaviour in the context of key social, economic and scientific debates and policy contexts;	Lectures; tutorials; fieldwork; seminars; practicals/workshops; tutorials; project supervision; guided independent study	Practical exercises; worksheets; discussions; project supervision; guided and independent reading.	Scientific report; infographic; discussion; oral presentation; exam; oral presentation; technical reports.

v) Presentation

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: present environmental data, analyses and arguments in a variety of formats and to a variety of audiences.	Lectures; seminars; project supervision; practicals/workshops; tutorials; seminars; tutorials; guided independent study.	Discussion sessions and seminars; project supervision; practical exercises; guided and independent reading.	Oral presentation; research proposal; dissertation; technical and scientific reports; exam.

vi) Appraisal of evidence

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: identify important sources of qualitative and quantitative environmental data;	Seminars; practicals/workshops; lectures; project supervision; tutorials; fieldwork; guided independent study.	Practical exercises; worksheets; discussions; project supervision; fieldwork activities; guided and independent reading.	Briefing paper; oral presentation; report; scientific report; exam; essay.
critically appraise qualitative and quantitative environmental data and data analyses in problem solving contexts.	Seminars; practical exercises/workshops; lectures; fieldwork; tutorials; project supervision; guided independent study.	Discussions; practical exercises; worksheets; field activities; project supervision; guided and independent reading.	Briefing paper; oral presentation; report; exam; scientific and technical reports.

b) Transferable Skills

i) Research Skills

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: use library resources and conduct literature searches in support of their learning;	Lectures; practical classes; workshops; seminars; tutorials; project supervision; guided independent study.	Discussions; workshop exercises; worksheets; project supervision; guided and independent reading	Research proposal; dissertation
read, analyse and reflect critically on scientific texts and other source materials;	Lectures; practical classes/workshops; tutorials; project supervision; guided independent study.	Discussions; workshop exercises; project supervision; guided and independent reading	Research proposal; dissertation
design, execute, and write-up a piece of research to address a specific environmental question using appropriate field, laboratory or numerical methods.	Lectures; practical classes/workshops; tutorials; project supervision; guided independent study.	Discussions; workshop exercises; project supervision; guided and independent reading	Research proposal; dissertation

ii) Communication skills

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: communicate effectively in a variety of written and oral formats.	Lectures; seminars; practicals/workshops; tutorials; project supervision; fieldwork; guided independent study.	Discussions; practical exercises; project supervision; worksheets; field activities; guided and independent reading.	Report; dissertation; research proposal; briefing note; oral presentation; essay

iii) Data Presentation

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
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Students should be able to: present data effectively in a variety of formats.	Lectures; practicals/workshops; tutorials; project supervision; seminars; guided independent study.	Practical exercises; worksheets; discussions; project supervision; guided reading; guided and independent study.	Dissertation; scientific report; exam; technical report; oral presentation; practical exercises.
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iv) Information Technology

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: demonstrate competence in a range of software tools for the processing, analyses and visualisation of environmental data.	Lectures; tutorials; fieldwork; practicals/workshops; project supervision; tutorials; seminars; guided independent study	Discussions, practical exercises; worksheets; project supervision; guided and independent reading.	Infographic; scientific and technical reports; oral presentation.

v) Problem Solving

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: analyse environmental problems to identify the role of Environmental Science in formulating solutions	Lectures; practicals; workshops; tutorials; seminars; project supervision; guided independent study	Practical exercises; worksheets; discussions; project supervision; guided and independent reading	Dissertation; research proposal; briefing paper; oral presentation; report

vi) Working relationships

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: work effectively and collaboratively with their peers and staff (discuss ideas, formulate plans, organise time/allocate tasks, offer and receive	Lectures; field and laboratory practicals; workshops; tutorials; project supervision; seminars; guided independent study	Field, lab and computer practical exercises; worksheets; project supervision; guided and independent reading	Research proposal; dissertation; scientific report; oral presentation;

constructive criticism) to produce reports and presentations.			
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vii) Managing learning

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: effectively engage with different formal and informal learning opportunities;	All modules. All teaching methods	All learning activities	All assessment types
organise and manage their time to meet targets and deadlines.	All modules. All teaching methods	All learning activities	All assessment types

viii) Career Management

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: demonstrate an awareness and understanding of their employability skills and strengths (an ability to work independently/part of a team, critical/creative thinking, programming, time management, leadership etc);	Discussions with Personal Tutors; engagement with Careers and Employability Service	Reflective activities; online quizzes	Online quizzes (Formative Assessment)
engage with career and personal development planning that support students to secure careers in a range of industrial, commercial, governmental and non-governmental job markets;	Workshops run jointly by SGGE and CES on Postgraduate career options and planning; participation in School, College and University careers events, engagement with Personal Tutors; engagement with Careers and Employability services.	Application coaching; career coaching; mock interviews/assessments; business coaching; CV writing workshops.	Online quizzes (Formative Assessment)

describe and reflect upon the roles of Environmental Science and the Environmental Scientist in contributing to and delivering collaborative projects in a range of interdisciplinary management and policy-setting contexts.	Seminars; practicals/workshops; guided independent study	Discussions; practical exercises; guided and independent reading	Briefing paper; oral presentation; report
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PG Diploma

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Intended Learning Outcomes for this award remain similar to the full MSc programme. However, it is recognised that outcomes that are predominately demonstrated by the dissertation will not be as effectively met.	Teaching methods for this award remain similar to the full MSc programme. However, it is recognized that for the PG Diploma there will be no teaching associated with the dissertation	Learning activities for this award remain similar to the full MSc programme. However, it is recognised that for the PG Diploma the dissertation will not be a learning activity	Assessment types for this award remain similar to the full MSc programme. However, it is recognised that the dissertation will not be used as a method to evidence any of the learning outcomes



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10. Progression points

This programme follows the standard Scheme of Progression set out in [Senate Regulations](#) – see the version of *Senate Regulation 6 governing postgraduate programmes* relevant to the year of entry.

The following additional progression requirements for this programme have been approved by the Quality and Standards Sub Committee on [Click or tap to enter a date.](#):

a) Course transfers

n/a

b) Year in Industry

[For the Year in Industry variant the additional progression points apply](#)

If a student does not achieve a pass level (50% or above) in all semester 1 taught modules level they will normally revert to the degree without industry. A Progression Board of Examiners will be held after semester 1 which will determine if students remain on the “with industry” variant of their programme.

If a student does not achieve a pass level (50% or above) in all semester 2 taught modules they have the option of reverting to the degree without industry, or if they wish to remain on “with industry” programme, they must delay any plans for placements until September and they must pass any resits in July/August. A Progression Board of Examiners will be held after semester 2 and also after the reassessment period which will determine if students remain on the “with industry” variant of their programme.

If a student fails to secure a placement by June 1 (or alternative date set by the Career Development Service) in their second semester of study, then they will normally revert to the degree without industry. A placement student will revert back to the standard variant of the programme if:

- They fail to secure an industrial placement role.
- They fail to pass the assessment related to the industrial placement.
- 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, 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.
- They discontinue their industrial placement and carry out an in-house project in the School, 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 UKVI will also be informed immediately. Placement provider’s will be informed that any contract of

employment shall be made subject to the placement students satisfactory completion of the taught part of the MSc.

11. Criteria for award and classification

This programme follows the standard scheme of postgraduate award and classification set out in [Senate Regulations](#) – see the version of *Senate Regulation governing postgraduate programmes* relevant to the year of entry.

12. Special features

Embedding the teaching of a systems approach to environmental understanding and problem-solving.

[For the with Industry variant additional Special Features apply](#)

12a. 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
<p>Research-briefed Bringing staff research content into the curriculum.</p>	<p>Our programme offers a solid foundation in the methods and theories of Environmental System Science, enhancing your critical thinking and problem-solving skills through key themes such as the nature of the earth system, urban geologies and techniques for analysing environmental data. The core curriculum ensures that the knowledge and skills you gain are applicable across a range of professional environmental fields.</p> <ul style="list-style-type: none"> • Research-briefed - Experience a challenging and inspiring learning environment informed by cutting-edge research. You'll benefit from the strong research background of the University of Leicester's Solid Earth and Evolution and Past Environments research group. Our staff bring their research straight into the classroom, making learning exciting and relevant
<p>Research-based Framed enquiry for exploring existing knowledge.</p>	<ul style="list-style-type: none"> • Research-based - Engage in computer practicals, workshops and assessments grounded in real-world problems, data and different stakeholder perspectives. Learning in class is augmented by in-field skills training. This workshop-led, hands-on approach helps you contextualize your study.
<p>Research-oriented Students critique published research content and process.</p>	<ul style="list-style-type: none"> • Research-oriented – Learn to critically appraise published research with expert guidance and training. You'll engage with academic literature through various classroom activities and assessments, honing your ability to think critically and analytically.
<p>Research-apprenticed Experiencing the research process and methods;</p>	<ul style="list-style-type: none"> • Research-apprenticed – Receive comprehensive training in report writing, group work, presentation skills, reading research papers, and library skills, including the use of reference management software. Research-focused training includes topics such as types of research, stakeholder identification, project design and qualitative methods. This training culminates in a final

building new knowledge.	<p>dissertation project, where you'll push the boundaries of knowledge in a final dissertation project based on your independent research, supported by an expert supervisor.</p> <p>Our programme develops the research expertise and confidence needed to excel in the dynamic field of Environmental System Science.</p>
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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:

The School of Geography, Geology and Environment has a full programme of weekly seminars by outside speakers, to which Masters students are encouraged to attend through promotion in the SGGE newsletter and through lecture shout-outs. Staff also pen their latest research findings within the SGGE newsletter, and pin their latest journal papers to their relevant VLE module sites in a virtual noticeboard.

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.

Academic staff meet twice per year to discuss the latest developments in teaching and learning, for example most recently in regard to generative artificial intelligence. Selected staff conduct horizon scanning of the latest journal papers in *Journal of Geoscience Education* and bring ideas at the forefront of innovation to their peers.

13. Indications of programme quality

External examiners reports

[For the withIndustry variant the additional indications of programme quality apply](#)

14. External Examiner(s) 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].

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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.

Environmental System Science

Level 7/Year 1 Delivery Year 2026/27 Intake Month September Mode of Study *Full Time Structure*

Credit breakdown

Status	Year long	Semester 1	Semester 2	Summer
Core	30 credits	30 credits	15 credits	60 credits
Optional	n/a	15 credits	30 credits	

180 credits in total

Core modules

Delivery period	Code	Title	Credits
Semester 1	GY7415	The Earth System	15 credits
Semester 1	GL7106	Anthropogenic Impacts on the Urban Environment	15 credits
Year long	GY7416	Techniques in Environmental Analysis	15 credits
Year long	GL4100	Hot Topics	15 credits
Semester 2	GY7714	Research for Change: Skills, and Challenges for Applied Environmental Research	15 credits
Summer	GY7720	Dissertation	60 credits

Notes

n/a

Optional modules

Delivery period	Code	Title	Credits
Semester 1	GY7414	Introduction to Environmental Modelling	15 credits
Semester 1	GY7705	Remote Sensing	15 credits
Semester 1	GY7701	Fundamentals of GIS	15 credits
Semester 2	PA7201	Earth Observation of the Atmosphere	15 credits
Semester 2	GY7711	Field Data Capture	15 credits
Semester 2	GY7718	Applications of Environmental Modelling	15 credits
Semester 2	GY7710	GIS in Environmental Health	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 1 Delivery Year 2026/27 Intake Month September Mode of Study *Part Time Structure*

Credit breakdown

Status	Year long	Semester 1	Semester 2
Core	15 credits	15 credits	15 credits
Optional	n/a	n/a	15 credits

60 credits

Core modules

Delivery period	Code	Title	Credits
Year	GY7416	Techniques in Environmental Analysis	15 credits

Delivery period	Code	Title	Credits
Semester 1	GY7415	The Earth System	15 credits

Notes

n/a

Optional modules

Delivery period	Code	Title	Credits
Semester 1	GY7414	Introduction to Environmental Modelling	15 credits
Semester 1	GY7705	Remote Sensing	15 credits
Semester 1	GY7701	Fundamentals of GIS	15 credits
Semester 2	GY7718	Applications of Environmental Modelling	15 credits
Semester 2	PA7201	Earth Observation of the Atmosphere	15 credits
Semester 2	GY7710	GIS in Environmental Health	15 credits
Semester 2	GY7718	Applications of Environmental Modelling	15 credits
Semester 2	GY7711	Field Data Capture	15 credits

Notes Students take one optional module in Semester 1 and one optional module in Semester 2

Level 7/Year 2 Delivery Year 2027/28 Intake Month September Mode of Study *Part Time Structure*

Credit breakdown

Status	Year long	Semester 1	Semester 2	Summer
Core	15 credits	15 credits	15 credits	60 credits
Optional	n/a	n/a	15 credits	n/a

120 credits in total

Core modules

Delivery period	Code	Title	Credits
Year long	GL4100	Hot Topics	15 credits
Semester 1	GL7106	Anthropogenic Impact on the Urban Environment	15 credits
Semester 2	GY7714	Research for Change	15 credits
Summer	GY7720	Dissertation	60 credits

Notes n/a

Optional modules

Delivery period	Code	Title	Credits
Semester 2	GY7718	Applications of Environmental Modelling	15 credits
Semester 2	PA7201	Earth Observation of the Atmosphere	15 credits
Semester 2	GY7710	GIS in Environmental Health	15 credits
Semester 2	GY7711	Field Data Capture	15 credits

Notes 1 Students take one optional module in Semester 2

Notes 2 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.

MSc in Environmental System Science with Industry

Level 7/Year 1 Delivery Year 2024/25 Intake Month September Mode of Study **Full Time Structure**

Year 1

The programme structure is the same as that for the full-time taught component of the non-industry degree (see above)

Year 2

Core Modules

Delivery period	Code	Title	Credits
Semester 1	ADGY7223	On Placement	n/a
Semester 2	ADGY7223	On Placement	n/a
Summer	GY7720	Dissertation	60

Appendix 2: Module specifications

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