

Programme Title: BSc Environmental Science



Programme Specification (UG)

Awarding body / institution:	Queen Mary University of London
Teaching institution:	Queen Mary University of London
Name of final award and programme title:	BSc (Hons) Environmental Science
Name of interim award(s):	
Duration of study / period of registration:	3 Years Full Time
QMUL programme code / UCAS code(s):	F850
QAA Benchmark Group:	
FHEQ Level of Award :	Level 6
Programme accredited by:	
Date Programme Specification approved:	
Responsible School / Institute:	School of Geography

Schools / Institutes which will also be involved in teaching part of the programme:

School of Biological & Chemical Sciences

School of Engineering & Materials Science

Department of Law

Collaborative institution(s) / organisation(s) involved in delivering the programme:

Programme outline

From global challenges such as climate change and the loss of biodiversity to protecting the quality of local waterways we are all affected by environmental issues. The BSc Environmental Science provides core training in physical and biological sciences, and will enable you to understand these complex problems and train you to protect and manage the environment.

This is a multi-disciplinary, flexible degree programme, reflecting the complexity of relationships within the natural environment and human interactions with it. You will be taught by staff from the School of Geography, as well as the School of Biological and Chemical Sciences (with further options to take modules in other Schools). There will also be the opportunity to interact with industry and environmental practitioners. The programme provides core training in environmental science research skills and techniques. You will benefit from significant recent investment in laboratory facilities and field equipment.

Aims of the programme

As leading centres of environmental and ecological research, the School of Geography and School of Biological and Chemical Sciences' mission is to teach their students to the very highest academic standards, drawing in creative and innovative ways on their research.

Through our teaching and learning we aim to:

- share our enthusiasm for environmental learning and scholarship with our students;
- introduce our students to a range of geographical, ecological and environmental knowledge and understanding shaped by staff research interests and by appropriate external frameworks such as the geography and environmental science benchmarking documents;
- enable students to specialise within particular fields (defined largely by staff research interests) of geography, ecology and environmental science;
- develop intellectual, discipline-specific and key skills as indicated, for example, in the benchmark statements for both geography and environmental science;
- encourage self-reflective awareness of the acquisition of these skills;
- foster critical thinking skills about the world and a continuing sense of enquiry;
- facilitate a range of personal attributes relevant to further achievement in the world beyond undergraduate and postgraduate education.

Our BSc Environmental Science degree programme provides students with the knowledge required to understand and manage the biological and physical processes that shape the environment around us and, in particular, to develop understanding of aquatic environments, utilising interdisciplinary expertise within the School of Geography and the School of Biological and Chemical Sciences. The programme also aims to develop and understanding of the spatial and temporal scales over which these processes operate while examining the complexity of relationships within the natural environment and human interaction with it. Students will also develop the intellectual and practical skills, including field and laboratory training, necessary to collect, analyse, interpret and understand a range of environmental data. The programme also develops key skills and attributes for further study and employment where environmental knowledge and skills will be applied. As a leading international centre of geographical research, the School of Geography's mission is to teach its students to the very highest academic standards, drawing in creative and innovative ways on its research.

What will you be expected to achieve?

Teaching and learning in the programme are closely informed by the active research of staff particularly in relation to the Earth Surface Science research theme in the School of Geography. Some modules are taught by members of staff who specialise in aquatic ecology and organismal biology in the School of Biological and Chemical Sciences.

The programme provides opportunities for students to achieve and demonstrate the following learning outcomes. These use the Benchmark Statement in Earth Science, Environmental Science and Environmental Studies as a framework interpreted in ways which reflect the distinctive nature of our research and teaching in geography and the other participating departments.

Please note that the following information is only applicable to students who commenced their Level 4 studies in 2017/18, or 2018/19

In each year of undergraduate study, students are required to study modules to the value of at least 10 credits, which align to one or more of the following themes:

- networking
- multi- and inter-disciplinarity
- international perspectives
- enterprising perspectives.

These modules will be identified through the Module Directory, and / or by your School or Institute as your studies progress.

Academic Content:	
A 1	The need for a multi-disciplinary and an interdisciplinary approach in advancing knowledge and understanding of earth systems drawing from both the natural and social sciences
A 2	Processes which shape the natural world at different spatial and temporal scales and influences on and by human activities
A 3	Issues concerning the availability and sustainability of resources
A 4	The operation of physical systems – their complexity and interrelationship
A 5	Human systems and their interaction with global systems
A 6	The role of institutions, organisations and other stakeholders in managing and regulating the human impact on the environment
A 7	The significance of spatial and temporal scale
A 8	The role and significance of change as central process in the physical world
A 9	The diverse forms of representations of the physical world
A 10	The main methodological strategies used in the acquisition, interpretation and analysis of environmental information with a critical understanding of appropriate contexts for their uses
A 11	The contribution of environmental science to the debate on environmental issues and how knowledge of these forms the basis for an informed concern about the earth and its people

Disciplinary Skills - able to:	
B 1	plan, design and execute a piece of rigorous research or enquiry, including the production of a piece of original research

B 2	describe and comment critically upon particular aspects of current geographical research
B 3	undertake effective field work (with due regard to safety and risk assessment)
B 4	Working safely in a scientific laboratory, with awareness of standard procedures
B 5	Preparing effective maps and diagrams using appropriate technologies
B 6	Employing a variety of technical and laboratory-based methods for the collection and analysis of spatial and environmental information
B 7	combine and interpret different types of geographical evidence

Attributes:	
C 1	Engage critically with knowledge (acquire and apply knowledge in a rigorous way; connect information and ideas within their field of study; use writing for learning and reflection; adapt their understanding to new and unfamiliar settings)
C 2	Have a global perspective (engage with the professional world)
C 3	Learn continuously in a changing world (acquire new learning in a range of ways, both individually and collaboratively; use quantitative data confidently and competently)
C 4	Rounded Intellectual Development (good judgement; curiosity and openness to change; initiative and resilience in meeting challenges; respect for the opinions of others and a readiness to act inclusively; the ability to reflect upon and assess their own progress; transferable key skills to help them with their career goals and their continuing education)
C 5	Clarity of Communication (develop effective spoken and written English; explain and argue clearly and concisely; apply different forms of communication in various social, professional and cultural settings; use communication technologies competently)
C 6	Research Capacity (grasp the principles and practices of their field of study; produce analyses which are grounded in evidence; apply their analytical skills to investigate unfamiliar problems; work individually and in collaboration with others; develop a strong sense of intellectual integrity; acquire substantial bodies of new knowledge)
C 7	Information Expertise (identify information needs appropriate to different situations; use technologies to access and interpret information effectively; critically evaluate the reliability of different sources of information; use information for evidence-based decision-making and creative thinking)

How will you learn?

The programme will be taught in accordance with the School of Geography's Teaching and Learning Strategy. The School of Geography is committed to developing, maintaining and supporting excellence in teaching and learning, to innovation in teaching practice, and to fostering independent learning and critical thinking in our students, whilst providing appropriate levels of support to students in their learning.

The delivery of teaching will take a number of forms:

- lectures both on campus and online
- small group tutorials
- seminars and webinars
- workshops
- computing practical classes
- guest speakers
- individual supervision of projects, dissertations and internships
- fieldwork

Learning will be supported by:

- coherently designed and effectively delivered modules
- detailed module handbooks for each module
- the provision of key materials in libraries and through electronic resources such as online reading lists
- individual feedback on written work
- appropriate formative and /or summative assessments
- provision of supporting materials (e.g. Powerpoint slides, recorded lectures, handouts, reading lists) via QMplus (QM's dedicated and interactive on-line learning environment)
- encouraging active participation by students in problem solving and small group discussions
- research methods training
- guided independent study resources

How will you be assessed?

Assessment is varied and will take a number of forms within the programme. The nature of the assessment is closely connected to the desired learning outcomes and the mode of teaching within each module. Forms of assessment include:

- seen and unseen examinations
 - in-class tests
- coursework essays
- research projects and dissertations
- project synopses
- oral presentations and role play exercises
- group projects and presentations
- writing exercises/written assessments that adopt different formats and styles and are aimed at a range of audiences, for example writing journals and newspaper articles
- literature reviews
- writing policy briefs, field work journals, reading exercises
- Audio-visual productions (podcasting on fieldtrips)

How is the programme structured?

Please specify the structure of the programme diets for all variants of the programme (e.g. full-time, part-time - if applicable). The description should be sufficiently detailed to fully define the structure of the diet.

The programme is structured around a set of compulsory modules and a range of optional modules, as identified in the list below.

Students take modules up to the value of 120 credits in each of their 3 Developmental Years. Students in developmental year 1 are required to take level 4 modules. Students in Developmental Year 2 select level 5 modules. Students in Developmental Year 3 will normally select level 6 modules, but are permitted to take some level 5 modules up to the value of 15 credits. Further information on College rules governing progression and award of degrees can be found at www.arcs.qmul.ac.uk

During Developmental Year 1, students take 120 credits of compulsory modules. The compulsory modules are designed to provide a firm grounding in environmental issues, environment and ecology and in appropriate research methodologies, approaches to environmental study and fieldwork and generic skills training.

During Developmental Year 2, students take 75 credits of compulsory and 45 credits of optional modules. The compulsory modules are designed to provide students with a more advanced understanding of the material cycles that are fundamental to the functioning of the earth system. They also offer an introduction to research strategies and project design (including research proposal writing) as well as experience in core field and laboratory techniques, in preparation for independent research undertaken at Level 6. Further compulsory and elective modules cover populations, communities and ecosystems, including those in aquatic environments. The elective modules provide students with the potential to extend their knowledge and understanding of environmental, physical and human aspects of geographical research by drawing upon existing modules offered in the School of Geography and the School of Biological and Chemical Sciences.

During Developmental Year 3, students take 30 credits of compulsory modules and 90 credits of optional modules. The compulsory module is the Project in Environmental Science which is based on undertaking original research. This module is seen as the culmination of students' training in research design, methods, analysis and presentation and demonstrates their ability to

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deploy accurately techniques of analysis and enquiry. The remaining 90 credits are selected from a range of specialist 15 or 30 credit modules, which reflect the distinctive research expertise of Geography and Biological and Chemical Science staff teaching on the programme and may include opportunities to undertake overseas fieldwork.

Note that not all of the elective modules listed in the following table will be offered every year. Some level 5 and level 6 modules can only be taken if certain pre-requisite level 4 or level 5 modules have already been completed; these requirements are detailed in handbooks and module descriptions on-line.

At Level 5 - Students can take only one of these 2 modules - GEG5231 (Fragile Environments) or BIO294 (Ecological Interactions II).

At Level 5 - Students may only take 15 credits of Human Geography modules (GEG5126, GEG5127, 5128, 5129, 5135).

At Level 6 - Students can take a maximum of 2 from the following - GEG6231, BIO392 and BIO397

At Level 6, students may not take more than 15 credits of Level 5 modules.

At Level 6 - Students can take only 15 credits of Human Geography Modules (GEG6102, GEG6105, GEG6151, GEG6130, GEG6134, GEG6143, GEG6144, GEG6145, GEG146, GEG6147, GEG6148)

Academic Year of Study FT - Year 1

Module Title	Module Code	Credits	Level	Module Selection Status	Academic Year of Study	Semester
Ideas and Practice in Environmental Science	GEG4008	15	4	Compulsory	1	Semesters 1 & 2
Evolution	BIO113	15	4	Compulsory	1	Semester 1
Research Methods for Geographers and Environmental Scientists	GEG4004	30	4	Compulsory	1	Semesters 1 & 2
Getting Started In Geography and Environmental Science	GEG4210	15	4	Compulsory	1	Semester 2
Ecology	BIO123	15	4	Compulsory	1	Semester 2
Earth Surface Science	GEG4209	15	4	Compulsory	1	Semester 1
Geography in the World	GEG4003	15	4	Compulsory	1	Semester 1

Academic Year of Study FT - Year 2

Module Title	Module Code	Credits	Level	Module Selection Status	Academic Year of Study	Semester
Environmental Research Methods	GEG5215	30	5	Compulsory	2	Semester 1

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Module Title	Module Code	Credits	Level	Module Selection Status	Academic Year of Study	Semester
Cultural Geographies	GEG5126	15	5	Elective	2	Semester 1
Society and Space	GEG5127	15	5	Elective	2	Semester 1
Spaces of Uneven Development	GEG5128	15	5	Elective	2	Semester 2
Economic Geographies	GEG5129	15	5	Elective	2	Semester 2
Health, Space and Justice	GEG5135	15	5	Elective	2	Semester 1
Research Design	GEG5214	15	5	Compulsory	2	Semesters 1 & 2
Geospatial Science	GEG5223	15	5	Elective	2	Semester 2
Ecosystem Science	GEG5224	15	5	Compulsory	2	Semester 2
The Past Environmental Change	GEG5229	15	5	Elective	2	Semester 1
Geomorphology	GEG5225	15	5	Elective	2	Semester 1
Fragile Environments	GEG5231	15	5	Elective	2	Semester 2
Ecological Interactions I	BIO234	15	5	Compulsory	2	Semester 1
Ecological Interactions II	BIO294	15	5	Elective	2	Semester 2
Diversity of Life	BIO212	15	5	Elective	2	Semester 1 or 2
Future Coasts	GEG5228	15	5	Elective	2	Semester 2

Academic Year of Study FT - Year 3

Module Title	Module Code	Credits	Level	Module Selection Status	Academic Year of Study	Semester
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Module Title	Module Code	Credits	Level	Module Selection Status	Academic Year of Study	Semester
Environmental Hazards	GEG6203	15	6	Elective	3	Semester 1
Flood Risk Management	GEG6314	15	6	Elective	3	Semester 2
Advanced Geospatial Science	GEG6230	15	6	Elective	3	Semester 1
Project in Environmental Science	GEG6212	30	6	Compulsory	3	Semesters 1 & 2
Progress in Physical Geography and Environmental Science	GEG6221	15	6	Elective	3	Semester 2
Nature-based Climate Solutions	GEG6232	15	6	Elective	3	Semester 1
Fragile Environments	GEG6231	15	6	Elective	3	Semester 2
Volcanoes, Climate change and Society	GEG6229	15	6	Elective	3	Semester 2
Environmental Pollution	GEG6226	15	6	Elective	3	Semester 1
Environmental Engineering	DEN320	15	6	Elective	3	Semester 2
International Environmental Law	LAW6459	15	6	Elective	3	Semester 1
Behavioural Ecology	BIO311	15	6	Elective	3	Semester 1
Species: Dinosaurs to DNA	BIO397	15	6	Elective	3	Semester 1 or 2
Climate Change and Conservation Challenges	BIO343	15	6	Elective	3	Semester 2
Savannah Ecology and Conservation	BIO392	15	6	Elective	3	Semester 3
Geopolitics Post 9/11: War Security Economy	GEG6130	15	6	Elective	3	Semester 1
Geography, Technology and Society	GEG6134	15	6	Elective	3	Semester 2
Historical Geographies of Childhood and Youth	GEG6143	15	6	Elective	3	Semester 1

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Module Title	Module Code	Credits	Level	Module Selection Status	Academic Year of Study	Semester
Latin American Debates	GEG6144	15	6	Elective	3	Semester 1 or 2
Historical Geographies of Medicine: From Imperial Hygiene to Global Health	GEG6145	15	6	Elective	3	Semester 1
Kinship: Geographical Perspectives	GEG6146	15	6	Elective	3	Semester 2
Geographies of Forced Migration	GEG6147	15	6	Elective	3	Semester 1 or 2
The Public Life of Cities	GEG6148	15	6	Elective	3	Semester 2
Future Coasts	GEG6228	15	6	Elective	3	Semester 2
Ancient Human Occupation of Britain	GEG6225	15	6	Elective	3	Semester 1 or 2
Geographies of Home	GEG6102	15	6	Elective	3	Semester 1
Global Historical Geographies	GEG6105	15	6	Elective	3	Semester 1
Urban African economies	GEG6151	15	6	Elective	3	Semester 2
Contemporary India: Politics, economy and society	GEG6129	15	6	Elective	3	Semester 1

What are the entry requirements?

The School considers each candidate individually. Entry requirements are as follows:

A-levels

Tariff/Grades requirement: A range of offers is ABB-BBB with a typical offer of ABB for 2018 entry. One science A-level at grade B is required for F850 BSc Environmental Science. Excluded subjects: General Studies.

Vocational or applied A-levels

The following Applied A-levels and Double Awards only are acceptable: Art and Design; Business; Information and Communication Technology; Leisure and Recreation; Media; Performing Arts; Science; Travel and Tourism.

English Language:

IELTS 6.5 (Writing 6.0), equivalent qualifications are acceptable.

BTECs:

BTEC Extended Diploma: Typical offer DDM

BTEC Diploma and A Level combination: Typical offer DD plus B at A Level

International Baccalaureate

Acceptability: Acceptable on its own and combined with other qualifications. Subjects and grades required: 30-32 points overall

with 6,5,5 - 5,5,5 in Higher Level subjects to include a science subject. Typical offer IB 32 with 6, 5, 5 in Higher Level subjects to include science.

How will the quality of the programme be managed and enhanced? How do we listen to and act on your feedback?

The School of Geography operates an Education Committee which advises the Director of Taught Programmes on all matters relating to the delivery of taught programmes at school level including monitoring the application of relevant QM policies and reviewing all proposals for module and programme approval and amendment before submission to Taught Programmes Board. Student views are incorporated in the committee's work through the reporting of minutes from the Staff-Student Liaison Committee and via the consideration of module evaluations and student surveys.

Like all schools/institutes at Queen Mary, the School of Geography operates an Annual Programme Review (APR) of its taught undergraduate and postgraduate provision. APR is a continuous process of reflection and action planning which is owned by those responsible for programme delivery. Students' views are considered in this process through analysis of the NSS and module evaluations and through the comments of Staff-Student Liaison Committee.

The Staff-Student Liaison Committee provides a formal means of communication and discussion between the School of Geography and its students. The committee consists of student representatives from each year group together with appropriate representation from staff within the School. It is co-chaired by both a student and the Senior Tutor and is designed to respond to the needs of students, as well as act as a forum for discussing programme and module developments. Staff-Student Liaison Committees meet very regularly throughout the year.

All modules provide end-of-module evaluation online questionnaires to be completed by students, the results of which are considered annually by module convenors and teaching teams and may lead to modifications of module content and/or delivery in future years.

What academic support is available?

The Schools of Geography and Biological and Chemical Sciences are welcoming and friendly and all academic and professional support staff play a role in ensuring that students are supported through their studies.

Programme Induction is provided for all incoming students during Welcome Week. This is used as an opportunity to acquaint new students with the format of the programme and expectations of them. Students also receive a library induction. All students meet with a designated Academic Advisor during this week to talk about the year ahead. Students with special educational needs have the opportunity to talk to their adviser about how the College can best support them, and to agree with the students how to communicate those needs to appropriate members of staff. At the beginning of the first year we also run an activity called 'Green London', which involves fieldwork and other activities. This provides an opportunity for extended induction and for staff and students to get to know one another.

All first year students are allocated an Academic Advisor with whom they will meet for an hour weekly or fortnightly during Semesters A and B. Second year students will meet with their personal tutors (also their Advisors) on a fortnightly basis. In the final year, Personal Tutors/Advisors also act as students' Project in Environmental Science supervisors and regular one-to-one meetings take place. All staff have weekly office hours when they are available to see students on a one-to-one basis.

The Deputy Directors of Education in Geography are responsible for overseeing the delivery of undergraduate programmes, including monitoring attendance and engagement, and can be consulted about problems and academic issues. The Senior Tutor has overall responsibility for matters concerning student support and welfare within the School of Geography and can be consulted in relation to more serious issues and problems. Finally, the School of Geography participates in Queen Mary's PASS scheme - a peer-mentoring system where new students can seek advice and support for students at later stages in their degree programme.

How inclusive is the programme for all students, including those with disabilities?

Queen Mary has a central Disability and Dyslexia Service (DDS) that offers support for all students with disabilities, specific learning difficulties and mental health issues. The DDS supports all Queen Mary students: full-time, part-time, undergraduate, postgraduate, UK and international at all campuses and all sites.

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Students can access advice, guidance and support in the following areas:

- Finding out if you have a specific learning difficulty like dyslexia
- Applying for funding through the Disabled Students' Allowance (DSA)
- Arranging DSA assessments of need
- Special arrangements in examinations
- Accessing loaned equipment (e.g. digital recorders)
- Specialist one-to-one study skills tuition
- Ensuring access to course materials in alternative formats (e.g. Braille)
- Providing educational support workers (e.g. note-takers, readers, library assistants)
- Access to specialist mentoring support for students with mental health issues and Autistic Spectrum Disorders.

Programme-specific rules and facts

Links with employers, placement opportunities and transferable skills

We would expect a successful graduate from the BSc Environmental Science programme to have:

- good knowledge and understanding of key the processes that shape the social and economic world and the physical environment
- the ability to employ a variety of social survey and interpretative methods for the collection, analysis and understanding of information from the human world
- the ability to employ a variety of technical methods for the collection and analysis of spatial and environmental information
- good written and verbal communication skills
- good numeracy and analytical skills
- confidence in using Information Technology
- competence in information handling and retrieval
- good interpersonal working skills
- the ability to work autonomously, showing initiative and demonstrating self-awareness and self-management
- flexibility, adaptability and creativity

Throughout their period of study, students are encouraged to reflect upon the acquisition of skills and their future employability. Tutorials in all three years deal with issues such as CV planning, skills development and applying for internships and graduate positions. Working with Queen Mary's Careers Service, the School also hosts employability forums (or similar) with recent graduates who offer insights and advice and encourage students to apply for internships and other activities that provide relevant work experience. Some modules include visiting speakers from industry and/or visits to commercial companies and environmental research organisations.

Graduates from the BSc Environmental Science programme have gone on to a wide range of careers including: conservation and environmental analysis, quantity surveying; business and finance; marketing and promotion; human resources; media and communication; planning and regeneration; housing and welfare; community development; teaching and lecturing; research. The degree provides a strong platform for further study at masters level and beyond, especially in physical geography and environmental sciences.

Programme Specification Approval

Person completing Programme Specification:

Emma Shapcott

Programme Title: BSc Environmental Science

Person responsible for management of programme:

Kate Heppell/Kate Spencer

**Date Programme Specification produced / amended by
School / Institute Learning and Teaching Committee:**

6 Jan 2021

**Date Programme Specification approved by Taught
Programmes Board:**