

Course Information Document: Undergraduate

Academic Year 2021/22

1. Course Summary

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|--|---|
| Names of programme and award title(s) | BSc (Hons) Environmental Science BSc (Hons) Environmental Science with International Year (see Annex for details) BSc (Hons) Environmental Science with Work Placement Year (see Annex for details) |
| Award type | Single Honours |
| Mode of study | Full-time |
| Framework of Higher Education Qualification (FHEQ) level of final award | Level 6 |
| Normal length of the programme | 3 years; 4 years with either the International Year or Placement Year between years 2 and 3 |
| Maximum period of registration | The normal length as specified above plus 3 years |
| Location of study | Keele Campus |
| Accreditation (if applicable) | This subject/programme is accredited by: the Institution of Environmental Sciences (IES) and by the Institute of Environmental Management and Assessment (IEMA). For further details see the section on Accreditation. |
| Regulator | Office for Students (OfS) |
| Tuition Fees | <p>UK students:</p> <p>Fee for 2021/22 is £9,250*</p> <p>International/EU students:</p> <p>Fee for 2021/22 is £17,000**</p> <p>The fee for the international year abroad is calculated at 15% of the standard year fee</p> <p>The fee for the work placement year is calculated at 20% of the standard year fee</p> |

How this information might change: Please read the important information at <http://www.keele.ac.uk/student-agreement/>. This explains how and why we may need to make changes to the information provided in this document and to help you understand how we will communicate with you if this happens.

* These fees are regulated by Government. We reserve the right to increase fees in subsequent years of study in response to changes in government policy and/or changes to the law. If permitted by such change in policy or law, we may increase your fees by an inflationary amount or such other measure as required by government policy or the law. Please refer to the accompanying Student Terms & Conditions. Further information on fees can be found at <http://www.keele.ac.uk/studentfunding/tuitionfees/>

** We reserve the right to increase fees in subsequent years of study by an inflationary amount. Please refer to the accompanying Student Terms & Conditions for full details. Further information on fees can be found at <http://www.keele.ac.uk/studentfunding/tuitionfees/>

2. What is a Single Honours programme?

The Single Honours programme described in this document allows you to focus more or less exclusively on this subject. In keeping with

Keele's commitment to breadth in the curriculum, the programme also gives you the opportunity to take some modules in other disciplines and in modern foreign languages as part of a 360-credit Honours degree. Thus it enables you to gain, and be able to demonstrate, a distinctive range of graduate attributes.

Environmental Science at Keele is offered as a three-year single honours degree programme or as a four-year, with work placement year or with International Year, degree programme. All pathways will lead to a qualification of BSc Environmental Science. Students taking the work placement year will gain the qualification of BSc Environmental Science *with work placement*, and students taking the international year will gain the qualification of BSc Environmental Science *with International Year*.

3. Overview of the Programme

The BSc (Hons) degree programme in Environmental Science provides you with a solid grounding in each of the key natural science disciplines (Biology, Ecology, Chemistry, Geology) that underpin this interdisciplinary and highly topical subject area. It aims to provide students with the scientific skills and expertise required to tackle many of the world's major environmental and societal problems such as climate change, food security, water resources, pollution and conservation. The course at Keele draws on the expertise of scientists within the disciplines of life sciences, chemical sciences and geosciences to emphasise the role and importance of scientific understanding and practical skills in the analysis and management of environmental problems. The first year gives students a sound basis and understanding of the core sciences underpinning the field of environmental science (biological sciences, chemical sciences, geosciences); whilst in later years students can choose to specialize or to maintain a broad environmental science portfolio, while maintaining a strong basis in the skills and techniques of the environmental scientist. This degree structure is designed to cater for those students with general interests in the environment and environmental issues, and for those with clear environmental science career aspirations. Environmental Science is an incredibly exciting and relevant subject for today's society with ever-increasing employment prospects and career opportunities.

4. Aims of the programme

The broad aims of the programme are to enable you to:

- Develop a sound scientific understanding of the core natural science disciplines (Biology, Ecology, Chemistry, Geology) that underpin the field of environmental science, irrespective of students' scientific background prior to studying at Keele University, and to be able to apply these to environmental problems;
- Be able to integrate scientific knowledge, and an awareness of social, economic and ethical issues, to address the management of the environment and tackle environmental problems such as climate change, water pollution, water resource scarcity, atmospheric pollution;
- Gain a wide-range of field and laboratory skills, including the ability to carry out independent research, relevant to the investigation of environmental issues;
- Develop to a high professional standard, employability skills in report writing, information technology, numeracy, oral presentation, team work and independent work, problem solving and searching and evaluating literature and related-resources.

5. What you will learn

The intended learning outcomes of the programme (what students should know, understand and be able to do at the end of the programme), can be described under the following headings:

- Subject knowledge and understanding
- Subject specific skills
- Key or transferable skills (including employability skills)

Subject knowledge and understanding

The nature of the course and the wide choice of options available emphasises the inter-disciplinary nature of the degree programme. Core modules aim to provide a grounding in the natural sciences that underpin the field of environmental science, and also stress the interdisciplinary interaction of different facets of sciences in the environment, whilst the range of option modules available enables the individual student to focus their interests, or to explore the interaction between the natural and social sciences in the understanding of current environmental issues. Individual module specifications should be consulted for specific information on knowledge and understanding obtained from specific modules within the degree programme.

Core natural science modules will allow successful students to demonstrate knowledge and understanding of:

- the application of the geological, biological, ecological and chemical sciences to environmental science
- fundamental principles of chemistry relevant to the Environmental Sciences
- the application of fundamental chemical principles to a range of applications in environmental chemistry
- the internal structure and composition of the Earth and its development since the formation of the Solar System
- the theory of plate tectonics, its manifestation on the Earth's current surface, and the consequences of its operation in the geological past
- minerals and the three major subdivisions of rocks in terms of how they are formed and how their properties relate to a variety of environmental science issues
- how rocks and geological events may be dated, both relatively and in terms of the absolute time scale

- the ways in which populations and communities function and interact
- basic theories and concepts in ecology and conservation
- the ecology and environmental issues of a specified ecosystem
- the impact of human activity, particularly resource exploitation on the Earth's surface and near surface environments (using well-established principles and examples from the forefront of the discipline)
- pressures and threats on terrestrial and aquatic ecosystems as well as the Earth's climate that are related to human activity
- possible options for alternative solutions to environmental problems and their implications for nature and society
- environmental management issues in a range of different environments
- the process and application of a range of analytical techniques relevant to the analysis of the composition of different environmental media (including soil, water, vegetation)
- the major components of the Earth's physical-geographic systems, including patterns of variation in the global environment and connections between global systems and local landscapes
- the different types of geographical evidence in order to explain phenomena of the physical environment
- the essential contributions of geoscience to the economic, environmental and cultural needs of Society
- sustainable chemistry within a global context including the use of chemistry in human processes and the associated environmental implications
- the environmental and social responsibilities of organisations including the benefits to businesses to 'green' their operation and ways this can be achieved
- a key multidisciplinary issue/problem reflecting the student's interests at the forefront of Environmental Science

Subject specific skills

The acquisition of subject specific skills is an important part of the Environmental Science programme. Individual module specifications should be consulted for information on subject-specific skills covered within individual modules.

Core natural science modules will allow successful students to demonstrate their ability to:

- carry out and record practical chemistry experiments relevant to the environmental sciences, including the analysis and interpretation of data generated
- describe, explain and apply principles of environmental chemistry and sustainability to investigate and critically appraise case studies, solve problems and interpret data
- observe, collect and analyse data on animal behaviour
- recognise minerals in hand specimen and thin section using a hand lens, petrological microscope and related techniques.
- use techniques for the acquisition, interpretation, analysis and visualisation of geoscience data (e.g. geological maps).
- show knowledge and understanding of geological field skills, and be able to synthesise their observations and interpretations within a geological report.
- demonstrate competency in a range of skills necessary for successful study of environmental science in higher education (e.g. numeracy, IT, visual, oral and written communication)
- demonstrate familiarity with a range of ecological and geochemical laboratory and field techniques
- collect, synthesise, evaluate and present environmental (geochemical, ecological, geological) data
- perform calculations involving simple population dynamics models
- work safely in a scientific laboratory, with awareness of standard methods and procedures and with due regard for risk assessment and relevant health and safety regulations
- apply relevant quantitative techniques to the analysis of environmental problems
- manipulate, analyse and interpret data sets relating to an area of environmental science
- design an achievable piece of research applicable to the field of environmental science, showing an ability to synthesise and interrogate the research literature and evaluate and select appropriate techniques
- integrate biological, geological and chemical aspects of field (and laboratory) study by preparing a report/presentation on investigations of several habitats
- evaluate solutions to problems of managing a disturbed/degraded area
- evaluate possible options for alternative solutions to environmental problems
- demonstrate familiarity with a range of field and laboratory techniques appropriate to Environmental Science investigation
- demonstrate technical appreciation of the process and application of a range of analytical techniques relevant to the analysis of the composition of different environmental media
- undertake effective fieldwork with due regard for safety, risk assessment, rights of access, relevant health and safety regulations and sensitivity to the impact of investigations on the environment
- apply their own knowledge, skills and experience to an aspect of current Environmental Science research (through the use of established, analytical scientific methods, literature review, data collection and interpretation etc.) and to have developed the skills necessary to exercise own independent analysis, initiative and self-learning

Key or transferable skills (including employability skills)

Successful students will be able to:

- recognise and use subject-specific theories, concepts and principles to make reasoned decisions and solve problems
- analyse, synthesise and summarise data and information critically, including prior research
- collect and integrate several lines of evidence to formulate and test hypotheses, and make critical judgements

- apply knowledge and understanding to address familiar and unfamiliar problems
- assess the merits of contrasting theories, explanations and policies
- recognise the moral and ethical issues of investigations and appreciate the need for professional codes of conduct
- develop an adaptable and flexible approach to study and work
- identify and work towards targets for personal, academic and career development
- take responsibility for their own learning and develop a habit of reflection upon that learning
- develop and sustain effective approaches to learning and study, including time management, flexibility, creativity and intellectual integrity
- communicate effectively to a variety of audiences in written, verbal and graphical forms
- work with numerical data using appropriate qualitative and quantitative techniques, as well as computer software packages
- work effectively with a variety of types of information technology to analyse and present information and data, as well as solve numerical problems
- use the internet as a means of communication and a source of information
- demonstrate competence in spatial awareness and observation
- conduct field and laboratory studies
- reference work in an appropriate manner
- work with information handling and retrieval systems using data from a wide range of sources
- work effectively both as an individual and as part of a group or team, recognising and respecting the viewpoints of others
- sustain motivation to work towards a goal over an extended period of time
- recognise responsibilities as a local, national and international citizen

In addition, students taking the four-year 'with work placement' will develop additional employability skills and will be able to:

- evaluate their own employability skills (via a SWOT Analysis) and develop their own intended learning outcomes (ILOs)
- develop, through practice in the work place, the work-related skills identified through their SWOT analysis and ILOs
- apply academic theory learnt as part of the taught degree to real situations in the work place
- critically evaluate their learning from the work placement
- explain how the professional environmental sector operates and what skills are needed to develop their career

The additional intended learning outcomes associated with the International Year are included in the Annex.

Keele Graduate attributes

Engagement with this programme will enable you to develop your intellectual, personal and professional capabilities. At Keele, we call these our ten Graduate Attributes and they include independent thinking, synthesizing information, creative problem solving, communicating clearly, and appreciating the social, environmental and global implications of your studies and activities. Our educational programme and learning environment is designed to help you to become a well-rounded graduate who is capable of making a positive and valued contribution in a complex and rapidly changing world, whichever spheres of life you engage in after your studies are completed.

Further information about the Keele Graduate Attributes can be found here: <http://www.keele.ac.uk/journey/>

6. How is the programme taught?

Learning and teaching methods used on the programme vary according to the subject matter and level of the module. They include the following:

- Lectures
- Tutorials, seminars and workshops
- Problem-solving classes
- Practical and laboratory classes
- Field courses
- Directed reading
- Group presentations and linked discussion
- Use of e-learning/the Keele Learning Environment (KLE)

Apart from these formal activities, students are also provided with regular opportunities to talk through particular areas of difficulty, and any special learning needs they may have, with their Personal Tutors or module lecturers on a one-to-one basis.

These learning and teaching methods enable students to achieve the learning outcomes of the programme in a variety of ways.

7. Teaching Staff

As Environmental Science is such an interdisciplinary subject, staff that deliver the Environmental Science Programme come from the Schools of Geography, Geology and the Environment, Chemical and Physical Sciences, and Life Sciences, with option modules from other Schools.

There is a strong emphasis throughout the Environmental Science programme on enhancing the student learning experience, as

evidenced by the number of environmental staff who hold teaching qualifications, such as the MA in Learning and Teaching in Higher Education, who are Fellows, Senior Fellows and Principals Fellows of the Higher Education Academy (HEA) and who have won awards for their excellence in teaching (e.g., Keele Teaching Excellence Awards, National Teaching Fellowships). Recent curriculum developments within our environmental programmes have been supported by external funds from the Higher Education Academy (HEA) Geography, Earth and Environmental Sciences (GEES) subject centre, the HEA Education for Sustainable Development project and the Higher Education Funding Council for England. Several staff are actively involved with pedagogic research that seeks to identify ways in which the student learning experience within the environmental sciences can be enhanced.

The University will attempt to minimise changes to our core teaching teams, however, delivery of the programme depends on having a sufficient number of staff with the relevant expertise to ensure that the programme is taught to the appropriate academic standard.

Staff turnover, for example where key members of staff leave, fall ill or go on research leave, may result in changes to the programme's content. The University will endeavour to ensure that any impact on students is limited if such changes occur.

8. What is the structure of the Programme?

The academic year runs from September to June and is divided into two semesters. The number of weeks of teaching will vary from programme to programme, but you can generally expect to attend scheduled teaching sessions between the end of September and mid-December, and from mid-January to the end of April. Our degree courses are organised into modules. Each module is usually a self-contained unit of study and each is usually assessed separately with the award of credits on the basis of 1 credit = 10 hours of student effort. An outline of the structure of the programme is provided in the tables below.

There are three types of module delivered as part of your programme. They are:

- Compulsory modules - a module that you are required to study on this course;
- Optional modules - these allow you some limited choice of what to study from a list of modules;
- Elective modules - a free choice of modules that count towards the overall credit requirement but not the number of subject-related credits.

A summary of the credit requirements per year is as follows, with a minimum of 90 subject credits (compulsory plus optional) required for each year.

For further information on the content of modules currently offered, including the list of elective modules, please visit:

<https://www.keele.ac.uk/recordsandexams/modulecatalogue/>

| Year | Compulsory | Optional | | Electives | |
|---------|------------|----------|-----|-----------|-----|
| | | Min | Max | Min | Max |
| Level 4 | 105 | 0 | 15 | 0 | 15 |
| Level 5 | 60 | 30 | 60 | 0 | 30 |
| Level 6 | 60 | 30 | 60 | 0 | 30 |

Module Lists

Level 4

| Compulsory modules | Module Code | Credits | Period |
|---|-------------|---------|--------------|
| Introductory Environmental Chemistry | CHE-10044 | 15 | Semester 1 |
| Introductory Geology for the Environmental Sciences | ESC-10045 | 15 | Semester 1 |
| Studying the Environment | ESC-10061 | 15 | Semester 1-2 |
| Academic, Professional and Fieldwork Skills | ESC-10068 | 15 | Semester 1-2 |
| Climate Change: The Scientific and Societal Context | ESC-10066 | 15 | Semester 2 |
| Ecology and Plant Biology | LSC-10083 | 30 | Semester 2 |

| Optional modules | Module Code | Credits | Period |
|---|-------------|---------|------------|
| Fundamentals of Physical Geography | ESC-10039 | 15 | Semester 1 |
| Nature, Conservation & Society | GEG-10015 | 15 | Semester 1 |
| Why Politics Matters | PIR-10038 | 15 | Semester 1 |
| People and the Environment | ESC-10041 | 15 | Semester 2 |
| Greening Business: Employability and Sustainability | ESC-10043 | 15 | Semester 2 |

| Field courses | |
|--|---|
| Studying the Environment (local area) | Introductory field day to explore the different aspects of environmental science and sustainability at a local field site (1 day). |
| Studying the Environment (Centre for Alternative Technology) | A residential weekend to the Centre for Alternative Technology, exploring renewable energy, sustainable living and building, and the geology and physical landscape of the local area. |
| Studying the Environment (North Wales)* | Residential field course in North Wales, looking at the ecology of marine and terrestrial environments and the environmental impacts of historical mining activities, includes a day of lab work at Keele (5 days). |

***Note about field courses:** these may change depending on factors such as staff availability, staff changes, staff expertise, costs, student numbers, other factors outside of our control (earthquakes, volcanic eruptions etc.). Locations of 'local area' field days change on a year by year basis.

Level 5

| Compulsory modules | Module Code | Credits | Period |
|--|-------------|---------|------------|
| Human Impact on the Environment, scientific perspectives | ESC-20017 | 15 | Semester 1 |
| Environmental and Sustainability Impact Assessment | ESC-20080 | 15 | Semester 1 |
| Environmental Analytical Methods | ESC-20032 | 15 | Semester 2 |
| Research and fieldwork planning | ESC-20081 | 15 | Semester 2 |

| Optional modules | Module Code | Credits | Period |
|---|-------------|---------|--------------|
| Regional Landscapes | ESC-20030 | 15 | Semester 1 |
| Palaeoclimatology and Quaternary Studies | ESC-20036 | 15 | Semester 1 |
| Employability Training: Engaging with the Workplace | ESC-20092 | 15 | Semester 1-2 |
| Sustainable Chemistry | CHE-20032 | 15 | Semester 2 |
| Geoscience and Society | ESC-20037 | 15 | Semester 2 |
| Dynamic Geographies (15 Credits) | ESC-20050 | 15 | Semester 2 |
| Research and Analytical Skills | LSC-20056 | 15 | Semester 2 |
| Biodiversity Crisis | LSC-20093 | 15 | Semester 2 |

| Field courses | |
|---|--|
| Environmental and Sustainability Impact Assessment and Research Planning (local) | Based in a local country park, students work in project groups to undertake an Environmental Impact Assessment (EIA). (1 day) |
| Environmental and Sustainability Impact Assessment and Research Planning (residential) | A residential field course investigating issues of environmental science and management (6-8 days depending on dates of Easter vacation). In 2016/17 options were the Lake District, UK or Bordeaux, France. |

***Note about field courses:** these may change depending on factors such as staff availability, staff changes, staff expertise, costs, student numbers, other factors outside of our control (earthquakes, volcanic eruptions etc.). Locations of 'local area' field days change on a year by year basis.

Level 6

| Compulsory modules | Module Code | Credits | Period |
|-----------------------------------|-------------|---------|--------------|
| Ecotoxicology and Risk Assessment | ESC-30056 | 15 | Semester 1 |
| Dissertation | ESC-30047 | 30 | Semester 1-2 |
| The Science of Soil | ESC-30058 | 15 | Semester 2 |

| Optional modules | Module Code | Credits | Period |
|--------------------------------------|-------------|---------|--------------|
| Glaciers and Glacial Geomorphology | ESC-30006 | 15 | Semester 1 |
| Natural Hazards | ESC-30009 | 15 | Semester 1 |
| Global Environmental Change | ESC-30018 | 15 | Semester 1 |
| Clean Technology | ESC-30040 | 15 | Semester 1 |
| Applied GIS | ESC-30044 | 15 | Semester 1 |
| Applied Insect Ecology | LSC-30003 | 15 | Semester 1 |
| Conservation Biology | LSC-30043 | 15 | Semester 1 |
| Sustainability Consultancy | ESC-30060 | 15 | Semester 1-2 |
| Water Resources | ESC-30020 | 15 | Semester 2 |
| Hydrological and Engineering Geology | ESC-30022 | 15 | Semester 2 |
| Coastal Environments | ESC-30027 | 15 | Semester 2 |
| Animal Welfare | LSC-30072 | 15 | Semester 2 |
| Plant Science and Sustainability | LSC-30076 | 15 | Semester 2 |

Field courses: The field courses undertaken during the third year will depend on the modules chosen. It should be noted that for many students their Dissertation work is likely to include a significant amount of fieldwork.

9. Final and intermediate awards

Credits required for each level of academic award are as follows:

| | | |
|--|-------------|--|
| Honours Degree | 360 credits | <p>You will require at least 120 credits at levels 4, 5 and 6</p> <p>You must accumulate at least 270 credits in your main subject (out of 360 credits overall), with at least 90 credits in each of the three years of study*, to graduate with a named single honours degree in this subject.</p> <p>*An exemption applies for students transferring from a Combined Honours programme - see point 3.4 here: https://www.keele.ac.uk/regulations/regulationc3/</p> |
| Diploma in Higher Education | 240 credits | You will require at least 120 credits at level 4 or higher and at least 120 credits at level 5 or higher |
| Certificate in Higher Education | 120 credits | You will require at least 120 credits at level 4 or higher |

International Year option: in addition to the above students must pass a module covering the international year in order to graduate with a named degree including the 'international year' wording. Students who do not complete, or fail the international year, will be transferred to the three-year version of the programme.

Work Placement Year option: in addition to the above students must pass a non-credit bearing module covering the work placement year in order to graduate with a named degree including the 'with Work Placement Year' wording. Students who do not complete, or fail the work placement year, will be transferred to the three-year version of the programme.

10. How is the Programme Assessed?

The wide variety of assessment methods used on this programme at Keele reflects the broad range of knowledge and skills that are developed as you progress through the degree programme. Teaching staff pay particular attention to specifying clear assessment criteria and providing timely, regular and constructive feedback that helps to clarify things you did not understand and helps you to improve your performance. The following list is representative of the variety of assessment methods used on your programme:

- **Unseen closed and open book examinations** in different formats test students' knowledge and understanding of the subject. Examinations may consist of essay, short answer and/or multiple choice questions.
- **Technical reports** require you to describe the process and progress of a scientific investigation, including engagement with and analysis of scientific data, and present this in a clear and concise format. Some technical reports may require you to make recommendations.
- **Poster presentations:** enable students to develop their communication skills and summarize the findings of their research in a clear, concise, visual and professional format. Posters may be presented in the form of a 'conference-style' presentation session whereby students give an oral summary of their work. Posters may be completed in small groups or as individuals.
- **Oral presentations** assess individual students' subject knowledge and understanding. They also test their ability to work effectively as members of a team, to communicate what they know orally and visually, and to reflect on these processes as part of their own personal development.
- **Field Course Portfolios** document a range of activities and exercises undertaken in the field, either individually or in small groups.
- **Field Notebooks** allow you to document and record your field-based observations, including the use of field sketching, to enable you to better understand the unfamiliar field environment in which you are working in.
- **Reflective Diaries** enable you to critically reflect on your learning experiences, for example as part of a work placement experience. You are assessed on the quality of this reflection and on your ability to respond constructively to the challenges and difficulties you encounter in the process of your own creative development and learning.
- **Essays** allow you to demonstrate your ability to articulate ideas clearly using argument and reasoning skills and with close reference to the contexts and critical concepts covered in the modules. Essays also develop and demonstrate research and presentation skills (including appropriate scholarly referencing).
- **Briefing notes** allow you to condense information into a format that would be understandable by a non-specialist, often with a view to summarising the current state of a field and its implications.
- **Laboratory reports** - structured proformas and full lab reports are formal summaries of work carried out in the laboratory and test your understanding of the practical aspects of the programme and develop the skills necessary to enable students to present and analyse their results.
- **Class tests** taken either conventionally or online via the Keele Learning Environment (KLE) assess your subject knowledge and their ability to apply it in a more structured and focused way.
- **Dissertations** enable you to explore in depth an area of particular interest through a substantial piece of focused research and writing, and test your ability to formulate and answer research questions.
- **Research projects and reports** test your knowledge of different research methodologies and the limits and provisional nature of

knowledge. They also enable you to demonstrate your ability to formulate research questions and to answer them using appropriate methods.

- **Peer assessment:** in some cases students will be involved in marking other students' work, usually with a prescriptive marking guide. This helps you to appreciate where marks are gained and lost and gives you the opportunity to see the common mistakes made by other students.
- **Reviews** of other scholars' work test your ability to identify and summarise the key points of a text and to evaluate the quality of arguments and the evidence used to support them. In the case of work based on empirical research, reviews also assess your knowledge of research methodologies and your ability to make critical judgements about the appropriateness of different strategies for collecting and analysing data.

There is particular emphasis on forms of assessment such as report writing and oral presentations of direct relevance to future employment avenues.

Marks are awarded for summative assessments designed to assess your achievement of learning outcomes. You will also be assessed formatively to enable you to monitor your own progress and to assist staff in identifying and addressing any specific learning needs. Feedback, including guidance on how you can improve the quality of your work, is also provided on all summative assessments within three working weeks of submission, unless there are compelling circumstances that make this impossible, and more informally in the course of tutorial and seminar discussions.

11. Contact Time and Expected Workload

This contact time measure is intended to provide you with an indication of the type of activity you are likely to undertake during this programme. The data is compiled based on module choices and learning patterns of students on similar programmes in previous years. Every effort is made to ensure this data is a realistic representation of what you are likely to experience, but changes to programmes, teaching methods and assessment methods mean this data is representative and not specific.

Undergraduate courses at Keele contain an element of module choice; therefore, individual students will experience a different mix of contact time and assessment types dependent upon their own individual choice of modules. The figures below are an example of activities that a student may expect on your chosen course by year stage of study. Contact time includes scheduled activities such as: lecture, seminar, tutorial, project supervision, demonstration, practical classes and labs, supervised time in labs/workshop, fieldwork and external visits. The figures are based on 1,200 hours of student effort each year for full-time students.

Activity

| | Scheduled learning and teaching activities | Guided independent Study | Placements |
|-------------------------|--|--------------------------|------------|
| Year 1 (Level 4) | 31% | 69% | 0% |
| Year 2 (Level 5) | 24% | 70% | 6% |
| Year 3 (Level 6) | 15% | 85% | 0% |

12. Accreditation

This programme is accredited by the Institution of Environmental Sciences (IES) and by the Institute of Environmental Management and Assessment (IEMA). Students enrolled on IES accredited programmes may apply for Student Membership of the IES which provides a range of benefits: <http://www.ies-uk.org.uk>

13. University Regulations

The University Regulations form the framework for learning, teaching and assessment and other aspects of the student experience. Further information about the University Regulations can be found at: <http://www.keele.ac.uk/student-agreement/>

If this programme has any exemptions, variations or additions to the University Regulations these will be detailed in an Annex at the end of this document titled 'Programme-specific regulations'.

Students should note that it is not possible to take both the Work Placement Year and International Year options.

A student who has completed a semester abroad will not normally be eligible to transfer onto the International Year option.

14. Other Learning Opportunities

Study abroad (semester)

Students on the programme have the potential opportunity to spend a semester abroad in their second year studying at one of Keele's

international partner universities.

Exactly which countries are available depends on the student's choice of degree subjects. An indicative list of countries is on the website (<http://www.keele.ac.uk/studyabroad/partneruniversities/>); however this does not guarantee the availability of study in a specific country as this is subject to the University's application process for studying abroad.

No additional tuition fees are payable for a single semester studying abroad but students do have to bear the costs of travelling to and from their destination university, accommodation, food and personal costs. Depending on the destination they are studying at additional costs may include visas, study permits, residence permits, and compulsory health checks. Students should expect the total costs of studying abroad to be greater than if they study in the UK, information is made available from the Global Education Team throughout the process, as costs will vary depending on destination.

Whilst students are studying abroad any Student Finance eligibility will continue, where applicable students may be eligible for specific travel or disability grants. Students studying in Erasmus+ destinations may be eligible for grants as part of this programme. Students studying outside of this programme may be eligible for income dependent bursaries at Keele. Students travel on a comprehensive Keele University insurance plan, for which there are currently no additional charges. Some governments and/or universities require additional compulsory health coverage plans; costs for this will be advised during the application process.

Study Abroad (International Year)

A summary of the International Year, which is a potential option for students after completion of year 2 (Level 5), is provided in the Annex for the International Year.

Work Placement Year

A summary of the Work Placement Year, which is a potential option for students after completion of year 2 (Level 5), is provided in the Annex for the Work Placement Year.

Fieldwork

Fieldwork is an essential part of an environmental scientist's training, providing both the opportunity to acquire and practice field-based skills, to develop skills of observation and recording and to work as effective members of a team. Keele is ideally located to be able to integrate a large component of field work into its environmental science programmes with a wide range of habitats in easy reach, including the Keele campus itself with its lake system and extensive woodlands, in addition to the mining and industrial heritage of the local area providing ideal opportunities for the study of the impact of these activities on the environment. The field courses in the second year provide the opportunity to investigate environmental science and management issues and environmental change within an unfamiliar environment. Students are also encouraged to make the most of other opportunities for field work with external organisations such as Operation Wallacea, which can form part of students third year independent project work.

15. Additional Costs

Environmental Science - Field Course Costs

All students will do mandatory field courses as part of their degree programme. There is a range of field courses and these are provided at no cost. Independent project work carried out by students for their Dissertation may be associated with additional costs.

The University provides significant financial support for the compulsory fieldwork elements of the degree programme and the costs of travel and accommodation for compulsory field courses are fully paid for by the University up to and including Year 2.

ALL Environmental Science students undertake an independent research project in their final year, which MAY include fieldwork. Students are responsible for organising their own transport and accommodation as well as paying any costs incurred whilst carrying out fieldwork. These costs are extremely variable as they are dependent on where the student carries out their project. Costs are minimal if the project work is undertaken in the students' local area.

IMPORTANT:

Students are expected to have adequate clothing for field trips. We reserve the right to change the venues of field courses due to both cost and academic considerations. Some field courses are fully or partly catered for. Others are self-catered and students are expected to purchase meals (e.g. lunch and/or evening meal).

| Activity | Estimated Cost |
|--|-----------------------|
| Field courses - compulsory | £0 |
| Field courses - optional | £0 |
| Equipment - waterproof clothing and footwear for field courses | £150 |
| Total estimated additional costs | £150 |

NB: as detailed in the Programme-Specific Regulations Annex, should you be required to retake the Introductory Environmental Chemistry module you will be charged additional fees.

We try to ensure that core text books are supplied by the library in adequate number or are available as E-books. However, students may choose to purchase their own copies of books for ease of access.

These costs have been forecast by the University as accurately as possible but may be subject to change as a result of factors outside of our control (for example, increase in costs for external services). Forecast costs are reviewed on an annual basis to ensure they remain representative. Where additional costs are in direct control of the University we will ensure increases do not exceed 5%.

As to be expected there will be additional costs for inter-library loans and potential overdue library fines, print and graduation. We do not anticipate any further costs for this programme.

16. Annex - International Year

Environmental Science with International Year

| |
|---|
| International Year Programme |
| <p>Students registered for this Single Honours programme may either be admitted for or apply to transfer during their period of study at Level 5 to the International Year option. Students accepted onto this option will have an extra year of study (the International Year) at an international partner institution after they have completed Year 2 (Level 5) at Keele.</p> <p>Students who successfully complete both the second year (Level 5) and the International Year will be permitted to progress to Level 6. Students who fail to satisfy the examiners in respect of the International Year will normally revert to the standard programme and progress to Level 6 on that basis. The failure will be recorded on the student's final transcript.</p> <p>Study at Level 4, Level 5 and Level 6 will be as per the main body of this document. The additional detail contained in this annex will pertain solely to students registered for the International Year option.</p> |
| International Year Programme Aims |
| <p>In addition to the programme aims specified in the main body of this document, the international year programme of study aims to provide students with:</p> <ol style="list-style-type: none">1. Personal development as a student and a researcher with an appreciation of the international dimension of their subject2. Experience of a different culture, academically, professionally and socially |
| Entry Requirements for the International Year |
| <p>Students may apply to the 4-year programme during Level 5. Admission to the International Year is subject to successful application, interview and references from appropriate staff.</p> <p>The criteria to be applied are:</p> <ul style="list-style-type: none">• Academic Performance (an average of 60% across all modules in Semester 1 at Level 5 is normally required. Places on the International Year are then conditional on achieving an average mark of 54% across all Level 5 modules with no module fails. Where no Semester 1 marks have been awarded performance in 1st year marks and ongoing 2nd year assessments are taken into account)• General Aptitude (to be demonstrated by application for study abroad, interview during the 2nd semester of year 2 (Level 5), and by recommendation of the student's personal tutor, 1st and 2nd year tutors and programme director) <p>Students may not register for both an International Year and a Placement Year.</p> |
| Student Support |
| <p>Students will be supported whilst on the International Year via the following methods:</p> <ul style="list-style-type: none">• Phone or Skype conversations with Study Abroad tutor, in line with recommended Personal Tutoring meeting points.• Support from the University's Global Education Team |
| Learning Outcomes |

In addition to the learning outcomes specified in the main text of the Programme Specification, students who complete a Keele undergraduate programme with International Year will be able to:

1. Describe, discuss and reflect upon the cultural and international differences and similarities of different learning environments
2. Discuss the benefits and challenges of global citizenship and internationalisation
3. Explain how their perspective on their academic discipline has been influenced by locating it within an international setting.
4. Apply their experiences abroad to the specific Graduate Attributes associated with their Environmental Science degree programme;
5. Integrate, apply and develop fundamental environmental science principles to describe and explain phenomena and solve problems in the context of selected topics within contemporary Environmental Science.

These learning outcomes will all be assessed by the submission of a satisfactory individual learning agreement, the successful completion of assessments at the partner institution and the submission of the reflective portfolio element of the international year module.

Regulations

Students registered for the International Year are subject to the programme-specific regulations (if any) and the University regulations. In addition, during the International Year, the following regulations will apply:

Students undertaking the International Year must complete 120 credits, which must comprise *at least 40%* in the student's discipline area.

This may impact on your choice of modules to study, for example you will have to choose certain modules to ensure you have the discipline specific credits required.

Students are barred from studying any module with significant overlap to the Level 6 modules they will study on their return. Significant overlap with Level 5 modules previously studied should also be avoided.

Additional costs for the International Year

Tuition fees for students on the International Year will be charged at 15% of the annual tuition fees for that year of study, as set out in Section 1. The International Year can be included in your Student Finance allocation, to find out more about your personal eligibility see: www.gov.uk

Students will have to bear the costs of travelling to and from their destination university, accommodation, food and personal costs. Depending on the destination they are studying at additional costs may include visas, study permits, residence permits, and compulsory health checks. Students should expect the total costs of studying abroad be greater than if they study in the UK, information is made available from the Global Education Team throughout the process, as costs will vary depending on destination.

Students studying in Erasmus+ destinations may be eligible for grants as part of this programme. Students studying outside of this programme may be eligible income dependent bursaries at Keele.

Students travel on a comprehensive Keele University insurance plan, for which there are currently no additional charges. Some Governments and/or universities require additional compulsory health coverage plans; costs for this will be advised during the application process.

17. Annex - Work Placement Year

Environmental Science with Work Placement Year

Work Placement Year summary

Students registered for this programme may either be admitted for or apply to transfer during their studies to the 'with Work Placement Year' option (NB: for Combined Honours students the rules relating to the work placement year in the subject where the placement is organised are to be followed). Students accepted onto this programme will have an extra year of study (the Work Placement Year) with a relevant placement provider after they have completed Year 2 (Level 5) at Keele.

Students who successfully complete both the second year (Level 5) and the Work Placement Year will be permitted to progress to Level 6. Students who fail to satisfactorily complete the Work Placement Year will normally revert to the 3-year programme and progress to Level 6 on that basis. The failure will be recorded on the student's final transcript.

Study at Level 4, Level 5 and Level 6 will be as per the main body of this document. The additional detail contained in this annex will pertain solely to students registered for the Work Placement Year option.

Work Placement Year Programme Aims

In addition to the programme aims specified in the main body of this document, the Work Placement Year aims to provide students with:

1. the opportunity to carry out a long-term work-based learning experience.
2. first-hand experience of the work place environment in a role highly relevant to the degree.

Entry Requirements for the Work Placement Year

Admission to the Work Placement Year is subject to successful application, interview and references from appropriate staff. Students have the opportunity to apply directly for the 4-year 'with work placement year' degree programme, or to transfer onto the 4-year programme at the end of Year-1 and in Year-2 at the end of Semester 1. Students who are initially registered for the 4-year degree programme may transfer onto the 3-year degree programme at any point in time, prior to undertaking the year-long work placement. Students who fail to pass the work placement year, and those who fail to meet the minimum requirements of the work placement year module (minimum 30 weeks full time (1,050 hours), or equivalent, work placement), will be automatically transferred onto the 3-year degree programme.

The criteria to be applied are:

- A good University attendance record and be in 'good academic standing'.
- Passed all Year-1 and Year-2 Semester 1 modules with an overall module average of > 55%
- General Aptitude (to be demonstrated by application(s) to relevant placement providers with prior agreement from the Programme Lead, interview during the 2nd semester of year 2 (Level 5), and by recommendation of the student's personal tutor, 1st and 2nd year tutors and Programme Lead)
- Students undertaking work placements will be expected to complete a Health and Safety checklist prior to commencing their work experience and will be required to satisfy the Health and Safety regulations of the company or organisation at which they are based.
- (*International students only*) Due to visa requirements, it is not possible for international students who require a Tier 4 Visa to apply for direct entry onto the 4-year with Work Placement Year degree programme. Students wishing to transfer onto this programme should discuss this with student support, the academic tutor for the work placement year, and the Programme Lead. Students should be aware that there are visa implications for this transfer, and it is the student's responsibility to complete any and all necessary processes to be eligible for this programme. There may be additional costs, including applying for a new Visa from outside of the UK for international students associated with a transfer to the work placement programme.

Students may not register for both an International Year and a Work Placement Year.

Student Support

Students will be supported whilst on the Work Placement Year via the following methods:

- Regular contact between the student and a named member of staff who will be assigned to the student as their University supervisor. The University supervisor will be in regular contact with the student throughout the year, and be on hand to provide advice (pastoral or academic) and liaise with the Placement supervisor on the student's behalf if required.
- Two formal contacts with the student during the placement year: the University supervisor will visit the student in their placement organization at around the 5 weeks after placement has commenced, and then visit again (or conduct a telephone/video call tutorial) at around 15 weeks into the placement.
- Weekly supervision sessions will take place with the placement supervisor (or his/her nominee) throughout the duration of the placement.

Learning Outcomes

In addition to the learning outcomes specified in the main text of the Programme Specification, students who complete the 'with Work Placement Year' option will be able to:

1. Critically evaluate their learning from the work placement.
2. Explain how the professional environmental sector operates and what skills are needed to develop a career within it.
3. Apply academic theory learnt as part of the taught degree to real situations in the work place.

These learning outcomes will be assessed through the non-credit bearing Work Placement Year module (ESC-30042) which involves:

1. 10 hours of scheduled learning and teaching activities comprising workshops covering: CV and cover letter production, finding a placement, personal skills audits, internship/placement preparation, and pre-departure briefing including completion of necessary paperwork.
2. Mid-Placement Portfolio completion (a strength, weaknesses, opportunities and threats (SWOT) self-analysis; a personal action plan aimed at strengthening employability skills; and a performance report from the placement host).
3. End of placement Portfolio (a reflective diary of the placement experience; and a final performance report from the placement host).

Regulations

Students registered for the 'with Work Placement Year' option are subject to programme-specific regulations (if any) and the University regulations. In addition, during the Work Placement Year, the following regulations will apply:

- Students undertaking the Work Placement Year must successfully complete the zero-credit rated 'Work Placement Year' module (ESC-30042)
- In order to ensure a high quality placement experience, each placement agency will sign up to a placement contract (analogous to a service level agreement).
- Once a student has been accepted by a placement organisation, the student will make a pre-placement visit and a member of staff identified within the placement contract will be assigned as the placement supervisor. The placement supervisor will be responsible for ensuring that the placement experience meets the agreed contract agreed with the University.
- The placement student will also sign up an agreement outlining his/her responsibilities in relation to the requirements of each organisation.

Students will be expected to behave professionally in terms of:

(i) conforming to the work practices of the organisation; and

(ii) remembering that they are representatives of the University and their actions will reflect on the School and have an impact on that organisation's willingness (or otherwise) to remain engaged with the placement.

Additional costs for the Work Placement Year

Tuition fees for students on the Work Placement Year will be charged at 20% of the annual tuition fees for that year of study, as set out in Section 1. The Work Placement Year can be included in your Student Finance allocation; to find out more about your personal eligibility see: www.gov.uk

Students will have to bear the costs of travelling to and from their placement provider, accommodation, food and personal costs. Depending on the placement provider additional costs may include parking permits, travel and transport, suitable clothing, DBS checks, and compulsory health checks.

A small stipend may be available to students from the placement provider during the placement but this will need to be explored on a placement-by-placement basis as some organisations, such as charities, may not have any extra money available. Students should budget with the assumption that their placement will be unpaid.

Eligibility for student finance will depend on the type of placement and whether it is paid or not. If it is paid, this is likely to affect student finance eligibility, however if it is voluntary and therefore unpaid, should not affect student finance eligibility. Students are required to confirm eligibility with their student finance provider.

International students who require a Tier 4 visa should check with the Immigration Compliance team prior to commencing any type of paid placement to ensure that they are not contravening their visa requirements.

18. Annex - Programme-specific regulations

Programme Regulations: Environmental Science

| | |
|-------------------------------------|---|
| Final Award and Award Titles | BSc (Hons) Environmental Science BSc (Hons) Environmental Science with International Year BSc (Hons) Environmental Science with Work Placement Year |
| Intermediate Award(s) | Diploma in Higher Education Certificate in Higher Education |
| Last modified | June 2019 |
| Programme Specification | https://www.keele.ac.uk/ga/programmespecifications |

The University's Academic Regulations which can be found on the Keele University website (<https://www.keele.ac.uk/regulations/>)[1] apply to and regulate the programme, other than in instances where the specific programme regulations listed below over-ride them. These programme regulations list:

- *Exemptions* which are characterised by the omission of the relevant regulation.
- *Variations* which are characterised by the replacement of part of the regulation with alternative wording.
- *Additional Requirements* which set out what additional rules that apply to students in relation to this programme.

The following **exemptions, variations** and **additional requirements** to the University regulations have been checked by Academic Services and have been approved by the Faculty Education Committee.

A) EXEMPTIONS

The clause(s) listed below describe where an exemption from the University's Academic Regulations exists:

For the whole duration of their studies, students on this Programme are exempt from the following regulations:

- **No exemptions apply.**

B) VARIATIONS

The clause(s) listed below describe where a variation from the University's Academic Regulations exists:

Variation 1: Re-assessment and alternative assessment of missed work

This programme varies from Regulation C3.12.

Reassessment, or alternative work to replace a missed assessment supported by exceptional circumstances, may sometimes take a different form from the original assessment where it is not feasible to recreate the original circumstances of assessment, for example in the case of fieldwork, group work or peer-assessed activities. Appropriate alternative assessments may be substituted in these situations. Where fieldwork is missed and supported by exceptional circumstances where appropriate students may be given the option of taking the field course the following year or completing alternative assessment.

Additional Requirements

The programme requirements listed below are in addition to the University's Academic Regulations:

Additional requirement 1: Attendance requirements

Students are required to attend all practical classes, tutorials, seminars, field courses and lectures. Attendance at all these sessions is monitored and checked by the academic support staff. Any absences due to exceptional circumstances should be notified as soon as possible to the School Office who will then pass on this information to tutors, as necessary. Any exceptional circumstances must be notified using the appropriate form following University regulations. Students who display a poor attendance record for no good reason are likely to be subject to disciplinary action. In addition, when taking modules from subjects other than those in the School

of Geography, Geology and the Environment students must inform themselves of, and abide by, any additional attendance and notification requirements of that particular School.

Self-certification of illness as a reason for absence from compulsory classes will be accepted for no more than three occasions per Semester. Any subsequent absence for reasons of illness must be accompanied by a doctor's note.

Individual modules within the Environmental Science programmes have specific attendance regulations:

Life Science (LSC) module attendance

Attendance at practical classes, tutorials and seminars is compulsory in the School of Life Sciences. Registers will be taken at all compulsory sessions. It is the student's responsibility to ensure that they are recorded on the register as present. The office should be contacted by telephone on (01782) 733028 or (01782) 733677 or by e-mail at lifesci-office@keele.ac.uk as soon as possible to report an absence.

Failure to attend one compulsory session without good cause will result in an informal warning letter from the year tutor. Failure to attend any subsequent sessions without good cause will lead to the issuing of a formal warning from the Head of School. A maximum of two formal warnings will be issued and a fourth absence will result in a 3rd and final warning from the Director of Academic Services, which could result in the requirement to **withdraw** from the University.

The following School (Life Sciences) regulations will also apply:

- A student who is absent without good cause from 50% or more of the compulsory sessions in any module may be deemed to have failed the module.
- Self-certification of illness as a reason for absence from compulsory classes will be accepted for no more than two classes per module. Any subsequent absence for reasons of illness must be accompanied by a doctor's note.

Chemical Science (CHE) module attendance

Attendance at practical sessions is compulsory. **You cannot pass Introductory Environmental Chemistry unless you gain a mark of at least 40% for the practical component of the module.** Unsatisfactory attendance will result in automatic failure of the module. Students who fail Introductory Environmental Chemistry will need to re-take the module the following academic year and will be **charged additional fees** to do so. You must arrive in good time for the commencement of laboratory sessions and may only leave prior to the end time with the express permission of the academic staff member in charge of the laboratory.

Additional requirement 2: Regulations governing fieldwork

Students are expected to read the online Safety Handbook for the School of Geography, Geology and the Environment at registration in Year 1. Students are required to sign an agreement that they have read the Safety Handbook, and that they will abide by the rules and regulations governing the efficient working, safety and welfare of all members both within the School and in the field

Students are required to follow all instructions provided by course staff within the Safety and Field Course Handbooks and in person in the field. This includes instructions given by postgraduate demonstrators. Students must make staff aware of any pre-existing medical conditions or other issues that may be relevant to field course safety prior to attending the field course.

Students, who by thoughtless actions or rowdy behaviour put the course, other students and the reputation of the University in jeopardy, will be immediately sent home to face disciplinary procedures by the University. Additionally, they will be required to attend the next scheduled field course as a re-assessment and at their own expense. Examples of serious misconduct include: wilful damage to property, injury to persons, ingestion of alcohol or illegal substances in the field so as to endanger themselves or other members of the course, improper use of safety equipment and/or failure to attend commitments.

Additional requirement 3: Form and submission of in-course assessments

The form and submission of coursework are determined by module leaders and announced in module documentation. Unless otherwise stated, work should be word processed. Students must familiarise themselves with the module documentation for information about how specific coursework assessments should be submitted. When taking modules from subjects other than those from within Geography, Geology and the Environment, students must inform themselves of, and abide by, the assessment and submission requirements of that School.

In the absence of agreed exceptional circumstances, work submitted late but within one week of the deadline will be marked to a maximum of 40%. Work submitted more than one week late will be given a mark of zero. Requests for extensions to deadlines should be made to the relevant module tutor and the Programme Director in advance of the coursework deadline using the University's exceptional circumstances online system.

Marks indicated on returned work are provisional and subject to change until ratified by the appropriate examination board. Although marked assignments are returned to students to provide feedback, any work that counts towards the final degree result has to be made available for consultation by the External Examiner at the end of the programme. Students must be in a position to be able to resubmit work in good condition when required by the School.

Additional requirement 4: Field work expenses

Fieldwork is a compulsory part of the Environmental Science degree programme and forms components of assessed modules. The University provides significant financial support for the compulsory fieldwork elements of the degree programme and the costs of travel and accommodation for compulsory field courses are fully paid for by the University up to and including Year 2.

ALL Environmental Science students undertake an independent research project in their final year, which MAY include fieldwork. Students are responsible for organising their own transport and accommodation as well as paying any costs incurred whilst carrying out fieldwork. These costs are extremely variable as they are dependent on where the student carries out their project. Costs are minimal if the project work is undertaken in the students' local area.

[1] References to University Regulations in this document apply to the content of the University's Regulatory Framework as set out on the University website here <https://www.keele.ac.uk/regulations/>.

Version History

This document

Date Approved: 09 April 2021

Previous documents

| Version No | Year | Owner | Date Approved | Summary of and rationale for changes |
|------------|---------|-----------------|------------------|---|
| 2 | 2020/21 | IAN OLIVER | 30 April 2020 | Introduction of new compulsory modules at Level 5 ('Biodiversity Crisis') and 6 ('The Science of Soil'), plus a replacement module at Level 4 ('Ecology and Plant Biology') necessitated by changes to modules provided by Life Sciences. |
| 1 | 2020/21 | IAN OLIVER | 25 February 2020 | |
| 2 | 2019/20 | IAN OLIVER | 01 May 2020 | New compulsory module at Level 6 ('The Science of Soil') and 'Ecotoxicology and Risk Assessment' replaces 'Contemporary Topics in Environmental Science' |
| 1 | 2019/20 | EDWARD MCCAULEY | 01 July 2019 | |