

Overview

Programme Code	36753
Programme Title	Environmental Science
Awarding Institution	Liverpool John Moores University
Programme Type	Degree
Language of Programme	All LJMU programmes are delivered and assessed in English
Programme Leader	Jonathan Dick
Link Tutor(s)	

Awards

Award Type	Award Description	Award Learning Outcomes
Target Award	Bachelor of Science with Honours - BSH	See Learning Outcomes Below
Recruitable Target	Bachelor of Science with Honours (SW) - SBSH	See Learning Outcomes Below
Alternative Exit	Diploma of Higher Education - DHE	<p>Apply a broad knowledge base and a range of appropriate analytical techniques to problem solving in Environmental Science</p> <p>Communicate a structured and coherent evaluation of the interaction between the physical, biological, and human environment. Operate in a range of natural environments, and take responsibility for their contributions and outputs. Demonstrate knowledge of the key underlying concepts in the natural sciences. Employ a wide range of field and practical techniques including primary observations of environmental factors and relevant statistical analyses, to develop solution based answers to problem solving. Analyse and evaluate information pertaining to environmental contexts and drivers of environmental change. Accept responsibility for group and personal work in a range of environmental contexts.</p>
Alternative Exit	Bachelor of Science - BS	<p>Demonstrate a broad and comparative knowledge of the general scope of the subject, its different areas and applications, and its interactions with related subjects. A detailed knowledge of a defined subject or a more limited coverage of a specialist area balanced by a wider range of study. In each case, specialised study will be informed by current developments in the subject. Demonstrate a critical understanding of the essential theories, principles and concepts of the subject(s) and of the ways in which these are developed through the main methods of enquiry in the subject.</p>
Alternative Exit	Certificate of Higher Education - CHE	<p>Apply a broad knowledge base and a range of appropriate analytical techniques to problem solving in Environmental Science.</p> <p>Communicate a structured and coherent evaluation of the interaction between the physical, biological, and human environment. Operate in a range of natural environments, and take responsibility for their contributions and outputs. Demonstrate knowledge of the key underlying concepts in the natural sciences.</p>
Alternative Exit	Bachelor of Science (SW) - SBS	<p>Demonstrate a broad and comparative knowledge of the general scope of the subject, its different areas and applications, and its interactions with related subjects. A detailed knowledge of a defined subject or a more limited coverage of a specialist area balanced by a wider range of study. In each case, specialised study will be informed by current developments in the subject. Demonstrate a critical understanding of the essential theories, principles and concepts of the subject(s) and of the ways in which these are developed through the main methods of enquiry in the subject.</p>

Alternative Exit	Diploma in Higher Education (SW) - SDHE	Apply a broad knowledge base and a range of appropriate analytical techniques to problem solving in Environmental Science Communicate a structured and coherent evaluation of the interaction between the physical, biological, and human environment. Operate in a range of natural environments, and take responsibility for their contributions and outputs. Demonstrate knowledge of the key underlying concepts in the natural sciences. Employ a wide range of field and practical techniques including primary observations of environmental factors and relevant statistical analyses, to develop solution based answers to problem solving. Analyse and evaluate information pertaining to environmental contexts and drivers of environmental change. Accept responsibility for group and personal work in a range of environmental contexts. A student who successfully completes a placement year will be eligible for the Sandwich award and will, in addition to the above, be able to demonstrate the professional and personal skills necessary for effective employment within a professional environment.
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Alternate Award Names	
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External Benchmarks

Subject Benchmark Statement	UG-Earth sciences, environmental sciences and environmental studies (2022)
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Programme Offering(s)

Mode of Study, Mode of Delivery	Intake Month	Teaching Institution	Programme Length
Full-Time, Face to Face	September	LJMU Taught	3 Years
Sandwich Year Out, Face to Face	September	LJMU Taught	4 Years

Aims and Outcomes

Educational Aims of the Programme

Develop graduates with a critically informed understanding of the processes that shape our environment, and develop an integrated approach to the understanding, analysis and management of the interaction between the natural and human world. Demonstrably link experiential learning and fieldwork to the wider development of both subject specific and practical skills, and to apply such skills to managing the environment. Enhance employment prospects by developing graduates with a wide range of subject specific, and transferable technical skills (including ICT & GIS), analytical and critical skills, and encouraging development of these. Develop powers of critical and analytical thinking, problem solving and logical argument through the progressive development of understanding, critical awareness and research skills over the course of the degree programme. Promote the concept of continuous improvement, lifelong learning, and contribution to the wider community, through personal development and scholarly activity. Empower students to engage with the development and acquisition of employability skills.

Learning Outcomes

Code	Description
PLO1	Demonstrate knowledge and understanding of, and be able to evaluate a range of natural and anthropogenic processes which shape and/or impact the natural world at a range of spatial and temporal scales
PLO2	Design, plan and implement relevant methodologies to collect data (including secondary data sources) relevant for addressing a particular problem or question
PLO3	Plan, design and execute a piece of research and produce a concise and precise report both autonomously and as part of a team
PLO4	Recognise the implications of professional ethics and standards and apply them
PLO5	Undertake the management of large datasets
PLO6	Undertake field and laboratory investigations with due regard for health and safety
PLO7	Work independently with responsibility and efficacy
PLO8	Work as a member of a team toward a shared goal, participating actively, sharing responsibility and rewards, and contributing to the capability of the team
PLO9	Make effective decisions to manage time and prioritise tasks efficiently in a range of environments
PLO10	Apply appropriate statistical and other analyses to datasets
PLO11	Demonstrate self-awareness and self-management skills
PLO12	Articulate appropriate techniques which may be employed to provide a holistic and interdisciplinary approach to managing and conserving the environment
PLO13	Identify and demonstrate acquisition of subject and employment skills for professional and career development
PLO14	Demonstrate critical awareness of the main methodologies (including GIS) used in the analysis and interpretation of environmental and ecological data
PLO15	Apply appropriate techniques to problem solving and hypothesis testing

Code	Description
PLO16	Observe, collect, analyse, synthesize, and summarise environmental information from a range of diverse sources
PLO17	Identify suitable methods of spatial data collection and how to represent it via the preparation of effective maps and diagrams utilising spatial and numerical modelling approaches (including the use of GIS)
PLO18	Interpret and contextualise quantitative and qualitative data and draw appropriate interpretations and conclusions
PLO19	Critically evaluate the strengths and weaknesses of contrasting theories and interpretations and consequently develop logical argument
PLO20	Communicate (including all written, verbal and visual forms of communication) complex results and synthesise outputs

Programme Structure

Programme Structure Description

At Level 4 all modules are core (compulsory), including the residential field trip module 4306NATSCI*. At Level 5 students will have a core semester 1: 5202NATSCI Ecology Field Skills, 5302NATSCI GIS and Employability, and 5403NATSCI The Cryosphere in a Changing Climate. In Semester 2 students have one core module [5305NATSCI Environmental Pollution] and must choose one of the following two residential field trip options*: 5303NATSCI International Environments and 5208NATSCI Conservation Practice and Management Skills. They must also select one of: 5207NATSCI Wildlife and Ecosystem Management, 5405NATSCI Impact of Climate Change on Biological Processes, 5209NATSCI Marine and Freshwater Biology, and 5404NATSCI Responding to Climate Change. At Level 6 students must choose in Semester 1, one of the following four options: 6300NATSCI Work Based Learning, 6315NATSCI Cold Environments: Processes and Change, 6204NATSCI Frontiers of Ecology, 6304NATSCI Coastal and Marine Management. In Semester 2 students must choose one of the following three options: 6218NATSCI Contemporary Issues in Conservation, 6308NATSCI River Monitoring and Management, and 6402NATSCI Renewables and Low Carbon futures. Study Abroad Students will be offered the opportunity of study abroad at Level 5. Option 1: Replacement of 60 credits of Level 5 with study abroad The programme will offer the opportunity of 60 credits of study at Level 5. Students will be enrolled on a 360 credit honours with study abroad programme. A 60 credit Level 5 study abroad module [5321NATSCI Study Semester Abroad Environmental Science] will replace Semester 2 modules on the standard BSc Environmental Science Programme. This study abroad will cover the same learning outcomes as the modules being replaced. The modules to be studied in the host institution must be agreed in advance. The Level 5 mean for the final award mark will be calculated based upon the 120 credits at Level 5. Option 2: Additional study year abroad following Level 5 The programme will offer the opportunity of an additional study year abroad following Level 5. Students will be enrolled on a 480 credit honours with study abroad programme. Of those 480 credits, 120 will be taken via a Level 5 study abroad module [5322NATSCI Study Year Abroad Environmental Science]. The modules to be studied in the host institution must be agreed in advance. The Level 5 mean for the final award mark will be calculated based upon the 240 credits at Level 5. Option 3: Sandwich Year The aim is to provide students with an extended period of work experience at an approved partner that will complement their programme of study at LJMU. This will give the students the opportunity to develop professional skills relevant to their programme of study, as well as attitude and behaviours necessary for employment in a diverse and changing environment. The placement year [5320NATSCI Environmental Science Sandwich Year] will follow Level 5 and students will be enrolled on a 480 credit honours sandwich programme. The Level 5 mean for the final award mark will be calculated based upon the 240 credits at Level 5. *In the case that residential field trips are unable to proceed an equivalent learning experience will be provided.

Programme Structure - 360 credit points	
Level 4 - 120 credit points	
Level 4 Core - 120 credit points	CORE
[MODULE] 4209NATSCI Ecology Approved 2022.02 - 20 credit points	
[MODULE] 4301NATSCI Methods Skills and Careers 1 Approved 2022.02 - 20 credit points	
[MODULE] 4302NATSCI Earth Systems Approved 2022.01 - 20 credit points	
[MODULE] 4304NATSCI Hazards Approved 2022.01 - 20 credit points	
[MODULE] 4305NATSCI Environment Society and Sustainability Approved 2022.01 - 20 credit points	
[MODULE] 4306NATSCI Methods Skills and Careers 2 Approved 2022.01 - 20 credit points	
Level 5 - 120 credit points	
Level 5 Core - 80 credit points	CORE
[MODULE] 5302NATSCI GIS and Employability Approved 2023.01 - 20 credit points	
[MODULE] 5304NATSCI Environmental Pollution Approved 2022.01 - 20 credit points	
[MODULE] 5202NATSCI Ecology Field Skills Approved 2022.01 - 20 credit points	
[MODULE] 5403NATSCI Cryosphere, Catchments, and Oceans Approved 2023.01 - 20 credit points	
Level 5 Optional - 40 credit points	OPTIONAL

[MODULE] 5207NATSCI Wildlife and Ecosystem Management Approved 2022.02 - 20 credit points	
[MODULE] 5208NATSCI Conservation Practice and Management Skills Approved 2022.01 - 20 credit points	
[MODULE] 5209NATSCI Marine and Freshwater Biology Approved 2022.01 - 20 credit points	
[MODULE] 5303NATSCI International Environments Approved 2022.02 - 20 credit points	
[MODULE] 5404NATSCI Responding to Climate Change Approved 2022.02 - 20 credit points	
[MODULE] 5405NATSCI Impact of Climate Change On Biological Processes Approved 2023.01 - 20 credit points	
Optional placement - 120 credit points	OPTIONAL
Placement Year - 120 credit points	OPTIONAL
[MODULE] 5320NATSCI Environmental Science Sandwich Year Approved 2022.02 - 120 credit points	
OR Study Abroad - 120 credit points	OPTIONAL
[MODULE] 5322NATSCI Study Year Abroad - Environmental Science Approved 2022.02 - 120 credit points	
Optional study semester - 60 credit points	OPTIONAL
[MODULE] 5321NATSCI Study Semester Abroad - Environmental Science Approved 2022.02 - 60 credit points	
Level 6 - 120 credit points	
Level 6 Core - 80 credit points	CORE
[MODULE] 6301NATSCI Dissertation Approved 2022.02 - 40 credit points	
[MODULE] 6306NATSCI Environmental Modelling and GIS Approved 2022.03 - 20 credit points	
[MODULE] 6307NATSCI Environmental Change Approved 2022.02 - 20 credit points	
Level 6 Optional - 40 credit points	OPTIONAL
[MODULE] 6204NATSCI Frontiers of Ecology Approved 2022.03 - 20 credit points	
[MODULE] 6218NATSCI Contemporary Issues in Conservation Approved 2022.02 - 20 credit points	
[MODULE] 6300NATSCI Work-Based Learning Approved 2022.01 - 20 credit points	
[MODULE] 6304NATSCI Coastal and Marine Management Approved 2022.01 - 20 credit points	
[MODULE] 6308NATSCI River Monitoring and Management Approved 2022.01 - 20 credit points	
[MODULE] 6315NATSCI Cold Environments: Processes and Change Approved 2022.01 - 20 credit points	
[MODULE] 6402NATSCI Renewables and Low Carbon Futures Approved 2022.01 - 20 credit points	

Module specifications may be accessed at <https://proformas.ljmu.ac.uk/Default.aspx>

Teaching, Learning and Assessment

The acquisition of knowledge is promoted via a variety of formal taught sessions including lectures, practical sessions (laboratory and PC based) and fieldwork sessions. Understanding is facilitated through seminars, workshops, tutorials, field projects, interactive classroom activities, group work and independent study. Knowledge at level 4 is assessed via online VLE tests, examination (mainly Multiple choice and/or short answer questions) and coursework including reports, logs and presentations. Higher levels of understanding in subsequent years of study are assessed by examination (multiple format including essay type, seen and unseen questions) and coursework elements such as field, laboratory, stakeholder and consultancy reports, seminar presentations with question & answer sessions and the application of relevant ICT (GIS) to deliver practical solutions to problems. Reflective practice and exercises developed to facilitate the wider dissemination of complex scientific issues demonstrate deeper levels of understanding. Cognitive skills are developed in many environments, with an increasing emphasis as students progress from level 4 to level 6. Such skills are especially developed on residential fieldwork modules, applied modules (including GIS based modules) and during the Dissertation module. The application of thinking skills in a work environment can be developed in the Work Based Learning (WBL) module. Essays and exam questions (including seen exam questions) are used to assess students' ability for critical thinking. Coursework elements such as reflective practice, field/laboratory reports, scientific communication and in particular the Dissertation/WBL module allows students to demonstrate the full range of their cognitive skills. Practical skills are taught during practical classes and fieldwork (a component of most modules). Core principles and minimum standards required for field and laboratory work are introduced at level 4, and further developed at level 5 where more technical methods of data analysis are introduced (GIS, and modelling). Students apply these skills independently at level 6 when completing the Dissertation module. If the WBL module is chosen these skills will be developed in an applied work place setting. Practical and professional skills are assessed by submission of field based presentations, field/laboratory reports, application of GIS and scientific communication. The Dissertation/WBL portfolio and other level 6 reports allow students to demonstrate the full range of skills they have acquired. As well as having the opportunity to develop transferable skills in all academic modules, key skills are specifically taught in specially designed modules: at level 4 - Methods Skills and Careers 1 and 2, level 5 - GIS and Employability, and level 6 - Dissertation and Environmental Modelling and GIS. Teaching in these modules is in small tutorial groups and via seminars, computer sessions, role play and workshops. Key skills are assessed through coursework at all levels in all modules and specifically in the modules mentioned above.

Opportunities for work related learning

Graduate Skills are taught and practised within a wide range of modules and assessed within the core modules at Level 4 Methods, Skills and Careers 1 and 2, Level 5 GIS and Employability, Level 6 Dissertation, Environmental Modelling and GIS, River Pollution and Management and/or Work-based Learning. Assessed employability components exist in Methods Skills and Careers 1 (Level 4), GIS and Employability (Level 5) and Dissertation (Level 6). This is designed to foster student awareness and engagement with their personal and professional development throughout their degree. Work-related learning opportunities are available through the routes of employer seminars, alumni networking events, guest lectures/workshops, employer-driven assignments and modules, bespoke sessions on job applications (specifically related to module curricula) and contact during fieldwork. There are several options for residential fieldwork at level 5 and 6. The Work-based Learning placement (135 hrs) and the Sandwich placement (12 months) offer the opportunity for students to gain work experience with a relevant professional organisation. Students are supported by the Professional Training Tutor who is responsible for advertising placements and promoting vocational training to students. Appropriate Work-based Learning or Sandwich placements (home or abroad) include working with e.g. Environmental Agency, municipal government, Natural England or environmental management or consultancy.

Entry Requirements

Type	Description
NVQ	Second year entry can potentially be arranged for candidates who have a HND or HNC with merits in the key relevant units or for those who have passed the first year of a degree programme in a closely related subject elsewhere.

Other international requirements	Applicants should have acquired passes in appropriate examinations in their country of origin and provide evidence of English language ability equivalent to 6.0 IELTS.
International Baccalaureate	Applicants must have (or expect to obtain) the full award including grade 5 in one appropriate science.
A levels	Applicants should have (or expect to obtain) at least 2 A2 Levels or equivalent, at least one of which should be in an appropriate science or social science subject. Our minimum points tariff is 112 points; this will depend on subjects being studied. Our offers may be grade specific e.g. we usually expect at least 80 points in an appropriate science or social science subject.
BTECs	Applicants should be studying an appropriate Diploma and have (or expect to obtain) a pass with DMM grades in an appropriate science or social science subject.
Alternative qualifications considered	In common with standard University policy, applicants should have GCSE passes in Mathematics and English Language at grade C or above, or 4 and above. School/College leavers should be at least 17.5 years on admission.

Extra Entry Requirements