

Overview

Programme Code	36574
Programme Title	Climate Change and Sustainability
Awarding Institution	Liverpool John Moores University
Programme Type	Masters
Language of Programme	All LJMU programmes are delivered and assessed in English
Programme Leader	Lee Bradley
Link Tutor(s)	

Awards

Award Type	Award Description	Award Learning Outcomes
Target Award	Master of Science - MS	See Learning Outcomes Below
Alternative Exit	Postgraduate Certificate - PC	Engage with advanced levels of theories and practice in relation to the field of climate change and sustainability. Demonstrate knowledge of the processing and analysis of remotely sensed data applied to the field of climate change and sustainability. Explore and test appropriate research methodologies. Demonstrate critical analysis, reflection and contextual awareness in focused areas of study.
Alternative Exit	Postgraduate Diploma - PD	Engage with advanced levels of theories and practice in relation to the field of climate change and sustainability. Demonstrate knowledge of the processing and analysis of remotely sensed data applied to the field of climate change and sustainability. Identify and apply appropriate research methodologies. Demonstrate a degree of skill in critical analysis, reflection and contextual awareness in a wide range of modules associated with climate change and sustainability.

Alternate Award Names	
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External Benchmarks

Subject Benchmark Statement

Programme Offering(s)

Mode of Study, Mode of Delivery	Intake Month	Teaching Institution	Programme Length
Full-Time, Face to Face	September	LJMU Taught	1 Years

Aims and Outcomes

Educational Aims of the Programme

The overall aims of the programme are to produce postgraduates with advanced knowledge and understanding of 1) climate change impacts and innovative and positive strategies for monitoring and managing them and 2) the concept of living sustainability. There is increasing concern over the Climate Emergency and how we tackle this in a sustainable way. Addressing climate change is an opportunity to address the way we live in ways which could be extremely positive for the environment, biodiversity, human health and the economy and we hope to highlight that in this degree. The specific aims of the programme are: 1) To develop advanced knowledge and critical understanding of climate change and sustainability with a particular focus on infrastructure, energy and environmental management. 2) To develop advanced theoretical knowledge and practical expertise required to collate, analyse and interpret spatial environmental science/climate change data from remote sensing platforms 3) To develop a high level of expertise using a variety of ICT, GIS, and remote sensing software packages 4) To develop programming skills in industry leading (Matlab) and/or open source (Python) software and an understanding of their use in environmental/climate change science. 5) To develop powers of critical and analytical thinking, problem solving and logical argument through the process of independent research enquiry. 6) To enhance employment prospects by developing a wide range of transferable skills.

Learning Outcomes

Code	Description
PLO1	Critically evaluate advanced theories and practice in relation to the field of climate change and sustainability with a particular focus on infrastructure, energy and environmental management.
PLO2	Utilise appropriate ICT, GIS/remote sensing and programming software as part of the collection, analysis, synthesis and presentation of environmental science/climate change data.
PLO3	Collect, analyse and critically evaluate information and data of different types and sources (primary, secondary, numerical, non-numerical, qualitative, quantitative) and draw appropriate interpretations and conclusions to contextualise findings.
PLO4	Apply planning, design and execution of research methodology and analytical skills to an in-depth autonomous study of a topic in a chosen field of study.
PLO5	Communicate effectively using discussions, written materials, images and data within oral, written and poster presentations. Use of IT to enable effective communication.

Code	Description
PLO6	Assimilate, integrate and critically discuss research findings to specialist and non-specialist audiences in an appropriate manner.
PLO7	Develop critical awareness of own learning, reflect on that learning and take responsibility for learning.
PLO8	Develop the organisational skills to manage resources and time.
PLO9	Exercise initiative and personal responsibility.
PLO10	Demonstrate originality in tackling and solving problems.
PLO11	Develop an ability to make decisions in complex situations.
PLO12	Critically evaluate current research and scholarship within climate change and sustainability fields.
PLO13	Work responsibly and effectively as part of a team.
PLO14	Demonstrate skill in critical analysis, reflection and contextual awareness in a wide range of modules associated with climate change and sustainability.
PLO15	Design and evaluate sustainable solutions to infrastructure problems.
PLO16	Critically evaluate efficient and sustainable building design and management of energy consumption and distribution.
PLO17	Critically appraise the need for sustainable environmental management.
PLO18	Demonstrate skill and knowledge of the processing and analysis of remotely sensed data applied to the field of climate change and sustainability.
PLO19	Critically appraise climate change and sustainability issues and the application of remote sensing/GIS techniques through written and oral communication methods.
PLO20	Apply independent research skills to investigate issues in climate change and sustainability through the collection, management, visualisation, and analysis of relevant spatial data using proprietary and/or open-source software.

Programme Structure

Programme Structure Description

An alternative exit award of PgCert may be awarded to any student who achieves at least 60 credits from the taught modules on this programme. A student successfully completing the taught element of this programme (120 credits) will be eligible for a PgDip.

Programme Structure - 180 credit points	
Level 7 - 180 credit points	
Level 7 Core - 180 credit points	CORE
[MODULE] 7100NATSCI Dissertation Approved 2023.01 - 60 credit points	
[MODULE] 7119NATSCI Climate Change Impact Monitoring and Management Approved 2023.01 - 20 credit points	
[MODULE] 7121NATSCI Research Methods Approved 2023.01 - 20 credit points	
[MODULE] 7123NATSCI Climate Change From a Scientific and Human Perspective Approved 2023.01 - 20 credit points	
[MODULE] 7124NATSCI Sustainable Environmental Management Approved 2023.01 - 20 credit points	
[MODULE] 7125NATSCI Sustainable Energy Management Approved 2023.01 - 20 credit points	
[MODULE] 7301CIV Sustainable Infrastructure Approved 2023.02 - 20 credit points	

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

Teaching, Learning and Assessment

The programme has been designed to develop student skills (academic, professional and transferable) through an integrated approach between academic taught and student led activities. It is designed with a focus on student engagement in activities to empower them to understand, assimilate, interpret, and reflect on the learning rather than repeating facts verbatim. Intellectual skills are developed throughout the teaching and learning programme. Critical analysis and problem solving skills are embedded in all modules and are taught, developed and practised through lectures, workshops, tutorials, case studies, formative work, practicals and all forms of dissertation work. Experimental research and design skills are further developed and practised through a broad range of coursework activities, practical and dissertation work. Transferable and professional skills are embedded throughout the programme. Skills are learned through completion of oral and written assignments, participating in group discussions, in-class presentations, collecting and analysing geospatial data (including GIS/remote sensing specific software and programming languages), and through the dissertation. Formative feedback is provided in practical, workshop and tutorial sessions and individual summative feedback is given on all submitted work. Assessment is designed to test achievement of learning outcomes (LOs) for individual modules (which align with the overall LOs of the programme). A wide variety of assessment types are used to engage and challenge students and highlight their achievement of the LOs. These include:- case study, GIS/remote sensing practical, executive and data analysis reports; informal written science communication tasks and scientific research posters; portfolios including informal video science communication task, a scientific research project proposal, oral and video presentations, programming code; and more traditional essays and exams. Experimental research and design skills are assessed particularly in the dissertation write-up but also in some of the portfolio work.

Opportunities for work related learning

The programme includes guest lectures/workshops, an employer workshop and employment-driven exercises and assignments using real-world examples and industry leading software and techniques. The offsite visits will also introduce students to people employed in the subject area and engaged in real-world case studies. Academic content is supported by training in legislative regulatory frameworks which is directly relevant to climate change and sustainability/environmental science work.

Entry Requirements

Type	Description
IELTS	a minimum 6.5 IELTS (with a minimum of 6.0 in each category).
Undergraduate degree	The minimum qualification for entry is a good first degree (2.2 Hons) in geography, environmental science or related field. Applicants who do not meet the normal entry requirement but have a good first degree in another numerate, physical science or engineering discipline and professional experience will be considered on their individual merits in relation to the proposed programme. Professional experience, publications, written reports, CPD activities and other suitable evidence of accomplishment will be taken into account.
Other international requirements	Equivalent international qualifications will be considered, plus a minimum 6.5 IELTS (with a minimum of 6.0 in each category).

Extra Entry Requirements

You will need to:

demonstrate sufficient knowledge to embark on the programme

display the potential to develop high level research skills

demonstrate the ability and commitment to work at postgraduate level