|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 4301NATSCI  Semester 1  *Geography* | METHODS SKILLS AND CAREERS 1  (40c) | *Aim:*  To provide students with practical experience in the methods employed by geographers to collect, statistically analyse, present and interpret primary and secondary data. To develop quantitative and qualitative practical skills, as well as observational skills. To introduce students to self reflection on personal and academic development | *Learning activities:*  Lectures, practical workshops, tutorials and fieldwork | *Assessment:*  Self Awareness Statement (10%) Quantitative Data Analysis (90%) |
| 4302NATSCI  Semester 1  *Geography* | EARTH SYSTEMS  (20c) | *Aim:*  To provide students with an introduction to our planet as a whole system and to develop skills appropriate to investigating the geography and formation of the Earth | *Learning activities:*  Lectures are integrated with appropriate lab/computer practical and workshop sessions and fieldwork. | *Assessment:*  Test (60%) Field Report (40%) |
| 4303NATSCI  Semester 1  *Geography* | LANDFORMS AND LANDSCAPES  (20c) | *Aim:*  To develop student knowledge and understanding of the processes that shape the natural environment, and equip students with the theoretical, observational and practical skills required to analyse the landscape. | *Learning activities:*  Learning activities will include lectures, fieldwork and practical classes (laboratory, paper-based and computer/GIS) will be employed to understand and interpret the shaping of the landscape . | *Assessment:*  Poster (50%) Field report (50%) |
| 4400NATSCI  Semester 1  *Geography* | CLIMATE AND HUMAN EVOLUTION  (20c) | *Aim:*  This course aims to provide an introduction to the climate system, and the ways in which humans have interacted with, and adapted/evolved to their climates. It will cover a wide variety of timescales of human-climate interaction and evolution. It explores long and shorter -term patterns of human evolution and climate change, examining the impact of climate instability and aridity upon resources and how well hominins adapted to changing environments of the past seven million years. | *Learning activities:*  Teaching will be delivered through lectures, practicals, and workshops. | *Assessment:*  Report (60%) Online Tests (40%) |
| 5302NATSCI  Semester 1  *Geography* | GIS AND EMPLOYABILITY  (20c) | *Aim:*  This module aims to inform research, inquiry, and communication through development of geographical skills, to provide students with increased professional and subject specific understanding, and to enhance the personal and intellectual autonomy of students. To introduce students to Geographical Information Systems (GIS), and introduce key methods of data and database management. | *Learning activities:*  Content from this module will be delivered through a combination of lectures, practicals, fieldwork, and tutorials. Lectures are designed to provide students with the theory necessary to underpin their use of GIS and other skills. Practicals will provide students with the support required to utilise GIS and other geographical skills. Spatial data will be collected during the off-site visit. After the field work, students will integrate and analyse the data they personally collected into GIS through practical classes. Tutorials throughout the semester will accompany teaching and support students with personal and professional development. | *Assessment:*  GIS Portfolio (100%) |
| 5304NATSCI  Semester 1  *Geography* | TERRESTRIAL AND MARINE SYSTEMS  (20c) | *Aim:*  To introduce students to the processes that drive the functioning of two major (terrestrial and marine) environments of the Earth with a view to their deeper understanding, evaluation and management.  To develop student appreciation and assessment capabilities of the environmental impact of humans (e.g. pollution, deforestation, ocean acidification) on natural environments and ecosystems.  To develop skills in acquiring, processing and interpreting environmental data. | *Learning activities:*  Teaching on this module is in the form of lectures, practicals and fieldwork. Most lectures are followed by practical activities that will help students develop practical skills associated with the content of each lecture. Assignment 1: There is one field trip to a former industrial area where contaminated soil may be a problem. Students are required, through field sampling and laboratory analyses, to produce a scientific report quantifying the extent of contamination and making recommendations for remediation. Assignment 2: Students are required to produce a poster presentation on ocean acidification that is supplemented by scientific data gathered through laboratory investigations. | *Assessment:*  Report (60%) Presentation (40%) |
| 5305NATSCI  Semester 1  *Geography* | GLOBALISATION AND DEVELOPMENT  (20c) | *Aim:*  To critically assess the concept, theories and implementation of Development  To examine the phenomena of Globalisation (cultural, economic and political dimensions).  To highlight, via examination of specific topics and localities, the variable impact of globalisation on people and their environment and to evaluate the response to global processes at local and regional level. | *Learning activities:*  Lectures, workshops, fieldwork with private study. | *Assessment:*  Case Study (field) report (50%) Blackboard Test (50%) |
| 5311NATSCI  Semester 1  *Geography* | WORLD ARCHAEOLOGY  (20c) | *Aim:*  To provide theoretical knowledge on societal development from an archaeological perspective and some practical experience in archaeological analytical techniques. | *Learning activities:*  Material will be delivered through a selection of lectures, practicals, and workshops | *Assessment:*  artifact quiz/phase test (50%) report and discussion (50%) |
| 6303NATSCI  Semester 1  *Geography* | SUSTAINABLE NATURAL HERITAGE  (20c) | *Aim:*  To investigate the concept of conserving natural resources as heritage and explore  the interplay between human culture and conservation. | *Learning activities:*  Lectures, Workshops, Fieldtrips, Seminars | *Assessment:*  Evaluation Report (50%) Case Study Presentation (50%) |
| 6304NATSCI  Semester 1  *Geography* | COASTAL AND MARINE MANAGEMENT  (20c) | *Aim:*  To understand the main sustainability issues surrounding coastal and marine environments  To study the scientific principles necessary to the efficient and sustainable management of coastal and marine environments and their application in a wide range of local, national and international contexts  To develop the practical skills and knowledge required by professional environmental regulators and consultants working in coastal and marine management  To discuss problem-orientated approaches to coastal and marine geography, integrating physical and human contexts  To analyse the main legislative and management frameworks affecting coastal and marine spatial planning and resource use | *Learning activities:*  Teaching on this module is in the form of lectures, practicals, fieldwork, workshops and student-led seminars. Important scientific principles, coastal and marine management approaches and legislation are explored through lectures and workshops hosted by LJMU staff and practitionners. Students work in teams to conduct a range of tasks (field work and data gathering, data analysis and oral presentation). Learning and assessments are focussed on the development of oral presentation skills and the production of reports integrating the different stakeholders’ perspectives approaches on a management project. | *Assessment:*  Data Analysis Exam (50%) Stakeholder Analysis Report (50%) |
| 6307NATSCI  Semester 1  *Geography* | ENVIRONMENTAL CHANGE  (20c) | *Aim:*  To examine, interpret and evaluate the evidence for Quaternary environmental change using appropriate proxy techniques and dating methods. | *Learning activities:*  This module comprises mixed learning methods. Key concepts are delivered in lectures and these themes are closely connected to the practical work. Field trips and laboratory classes are integral to developing practical skills, enhancing learning and to generate data so that coursework is embedded as part of learning activity. Workshops are used to provide a forum for discussion and revision sessions. Informal formative feedback is provided regularly in practical classes. Students are provided an opportunity to present and discuss draft reports for formative feedback in a workshop in advance of the report submission. | *Assessment:*  Field and Practical Report (50%) Exam (50%) |
| 4304NATSCI  Semester 2  *Geography* | NATURAL RESOURCES AND HAZARDS  (20c) | *Aim:*  To provide an understanding of the environmental and human impacts associated with the exploitation of natural resources and naturally occurring hazards. | *Learning activities:*  A range of practical techniques in the field and the laboratory are introduced in this module, supported by a lecture programme. Workshops are included to assist with interpretation of environmental data collected in the field and analysed in the laboratory. | *Assessment:*  Exam (50%) Field/Laboratory Report (50%) |
| 4305NATSCI  Semester 2  *Geography* | ENVIRONMENT SOCIETY AND SUSTAINABILITY  (20c) | *Aim:*  To examine the relationship between environment, society, and sustainability in the context of increasing concerns about human impacts on the environment. To focus on issues in relationship to population, economic growth, resource use and  distribution, and social welfare. To outline different scientific, technological, social, and political approaches to handling 'real world' issues. | *Learning activities:*  The module will include lectures and practicals, as well as fieldwork activities to illustrate topics discussed in class, and workshops with practitioners to foster debate and discussion. Case study material will be worked through individually or in small groups | *Assessment:*  Examination (40%) Sustainability portfolio (60%) |
| 4306NATSCI  Semester 2  *Geography* | METHODS SKILLS AND CAREERS 2  (40c) | *Aim:*  To provide students with practical skills in the methods used by geographers to collect, present and interpret primary and secondary data. To develop both quantitative and qualitative practical skills and field based observational skills. | *Learning activities:*  Lectures, practical workshops, tutorials and fieldwork | *Assessment:*  Qualitative report (40%) Field project portfolio (60%) |
| 4401NATSCI  Semester 2  *Geography* | INTRODUCTION TO CLIMATOLOGY AND METEOROLOGY  (20c) | *Aim:*  This module aims to provides an overview of the physical and dynamic nature of climatology, meteorology, and related aspects of oceanography. | *Learning activities:*  The learning activities of this module comprise lectures, practicals, seminars and workshops. The practicals are developed to help the students grasp the concepts and ideas taught in class while the seminars aim at developing critical thinking and development of opinions informed by scientific evidence. Investigations during the practicals lead the student through analysis and interpretation of current climatological data. The workshops are aimed for the students to revise the material taught in class and ask questions in preparation for the report and exam. | *Assessment:*  Data analysis & interpretation (40%) Exam (60%) |
| 4402NATSCI  Semester 2  *Geography* | SKILLS IN CLIMATE CHANGE SCIENCE  (20c) | *Aim:*  To provide students with practical skills in the methods used by climate scientists to collect, present and interpret primary and secondary data. To develop both quantitative and qualitative practical skills and field based observational skills. | *Learning activities:*  Lectures, practicals workshops, tutorials and fieldwork | *Assessment:*  phase test (40%) field project portfolio (60%) |
| 5211NATSCI  Semester 2  *Geography* | CONSERVATION TECHNOLOGY  (20c) | *Aim:*  Provide students an understanding and awareness of the use and application of up to date technology in conservation | *Learning activities:*  This module will be taught through lectures to teach students about the technology and their applications in conservation, computer practicals to teach student how to process and analyse the data collected, workshops to look at building and setting up the technology and fieldtrips to allow the student to gain experience in using the technology | *Assessment:*  Technology Report (50%) Sales Presentation (50%) |
| 5306NATSCI  Semester 2  *Geography* | PROJECT DESIGN AND MANAGEMENT  (20c) | *Aim:*  introduction to practical project design and management in theory and through structured learning exercises including project preparation | *Learning activities:*  This module comprises mixed learning methods. Key concepts are delivered in  lectures. Lectures, tutorials, and workshops are integral to developing practical skills and enhancing learning so that coursework is embedded as part of learning activity. Workshops are used to provide a forum for discussion of key concepts and to explore methodologies. | *Assessment:*  Poster (40%) Project Portfolio (60%) |
| 5307NATSCI  Semester 2  *Geography* | CLIMATE CHANGE  (20c) | *Aim:*  To provide a knowledge and understanding of the physical causes of contemporary climate change, set within a longer-term palaeoclimate context. To develop skills in acquiring and interpreting climate model output at varying temporal and spatial resolutions, and to analyse the potential environmental and socio-economic impacts of future scenarios. To develop the ability to critique internationally important issues relating to the scientific and social aspects of climate change. | *Learning activities:*  The module's learning activities comprise lectures and practicals in equal measure. Practical sessions will consist of paper-based, laboratory-based, and computer-based exercises to provide a sound theoretical and practical understanding of climate change as a physical and social science. | *Assessment:*  Climate Impacts Report (50%) Exam (50%) |
| 5308NATSCI  Semester 2  *Geography* | URBAN GEOGRAPHY  (20c) | *Aim:*  To introduce the analytical frameworks from which to conceive of and engage with issues of contemporary cities, urban spaces, processes and stakeholders as well as physical processes affecting the urban environment. To provide a baseline of knowledge from which students can critically engage with issues of sustainability at the urban settlement level. To critically analyse the dimensions and causes of, and responses to, specific problems at a range of spatial scales within cities. | *Learning activities:*  Lectures, workshops, seminars and fieldwork | *Assessment:*  Report (60%) Exam (40%) |
| 5309NATSCI  Semester 2  *Geography* | VOLCANOES EARTHQUAKES AND SOCIETY  (20c) | *Aim:*  To provide students with a broad understanding of volcanic processes, earthquakes, deformation and faulting and the resulting hazards and mitigation. | *Learning activities:*  The module will be delivered via a combination of lectures, practical sessions, workshops and GIS integration. | *Assessment:*  Exam (50%) Report (50%) |
| 6306NATSCI  Semester 2  *Geography* | ENVIRONMENTAL MODELLING AND GIS  (20c) | *Aim:*  To provide students with a critical understanding of different environmental modelling techniques  To develop skills in the selection and application of appropriate models to investigate a range of environmental phenomena  To explore the rich integrating role of Geographic Information Systems in environmental modelling | *Learning activities:*  The module integrates lectures, computer-based practicals (including GIS), and fieldwork. | *Assessment:*  Modelling portfolio (70%) Exam (30%) |
| 6308NATSCI  Semester 2  *Geography* | RIVER MONITORING AND MANAGEMENT  (20c) | *Aim:*  To introduce and analyse the main water-related legislative and management frameworks that environmental regulators and consultants work within.  To study the application of scientific principles to the management of contemporary river management issues.  To evaluate the methodologies used to investigate, monitor, manage and improve river environments.  To develop the practical skills and knowledge required by professional environmental regulators and consultants working in river management. | *Learning activities:*  Teaching on this module is in the form of lectures, practicals and field work. Important environmental legislation and river pollution issues and management approaches are explored through lectures and workshops. Field visits to two project sites allow appropriate field investigations of river management issues. Students work in teams to conduct a range of tasks (field work and data gathering, data analysis and report writing). Learning and assessments are focussed on the development of consultancy-style reporting and presentation skills. Assignment 1: Students are required to work together in teams to deliver a professional, consultancy-style presentation to their clients on the issue of diffuse agricultural pollution in river catchments. Assignment 2: Students are required to prepare a professional, consultancy-style environmental report on the issue of mine waste pollution in river catchments. | *Assessment:*  Consultancy Presentation (40%) Consultancy Report (60%) |
| 6402NATSCI  Semester 2  *Geography* | RENEWABLES AND LOW CARBON FUTURES  (20c) | *Aim:*  To examine the relationship between energy systems, society and contemporary environmental challenges – especially climate change – and how a low-carbon energy future can be achieved. To understand the environmental and social benefits and limitations of different kinds of energy generation resources and technologies. To critically evaluate global patterns of energy consumption and possible strategies to alter this. To outline the key factors in moving to a ‘low-carbon’ energy future in a way that is socially equitable and sustainable. | *Learning activities:*  The module will include lectures that present key concepts and issues. Workshops will be used to foster discussion and critical reflection and analysis among students. Fieldwork activities will illustrate topics discussed in class. Case study material will be worked through individually or in small groups. | *Assessment:*  News article-style essay (50%) Policy report (50%) |
| 7119NATSCI  Semester 2  *Geography* | ENVIRONMENTAL GIS AND REMOTE SENSING  (20c) | *Aim:*  To provide knowledge and understanding of GIS and remote sensing with reference to a variety of environmental science applications and to familiarise students with a range of data types and industry-leading software. | *Learning activities:*  The module will be taught by a combination of lectures, workshops and computer-based practicals. Lectures will introduce the theory and case studies. Practicals will allow use of industry-leading software in various case study applications with data from a range of remote sensing and other sources. Workshops will allow more interactive development of student projects under supervision. | *Assessment:*  Portfolio of practicals (60%) Project poster presentation (40%) |
| 7120NATSCI  Semester 2  *Geography* | PROGRAMMING FOR ENVIRONMENTAL SCIENTISTS  (20c) | *Aim:*  To provide students with program comprehension and program-generation skills in both Matlab and Python coding languages and the knowledge and understanding of the usefulness of programming in environmental science. | *Learning activities:*  The module will be taught by a combination of lectures, workshops and computer practical sessions. The coding portfolio assessments will relate to practicals in which students will need to produce their own code. The final part of the coding portfolios will involve students manipulating data for a specific environmental science application. | *Assessment:*  Portfolio of Matlab code (50%) Portfolio of Python code (50%) |
| 7121NATSCI  Semester 2  *Geography* | RESEARCH METHODS  (20c) | *Aim:*  - To train students in the process of planning and executing an independent research project using appropriate methodological design.  - To familiarise students with qualitative, quantitative and mixed-methods of data collection and analysis.  - To develop research reporting skills through written and oral methods. | *Learning activities:*  Lectures, problem solving, practical work, workshops and discussions. | *Assessment:*  Portfolio of research work (100%) |
| 7118NATSCI  Yearlong  *Geography* | OVERSEAS FIELD EXPERIENCE  (20c) | *Aim:*  To acquire and analyse drone data related to an environmental science topic in an overseas field setting. | *Learning activities:*  On-the-ground field activities including field-based experiential learning, field observation and environmental data collection techniques (beyond drone data). Discussion and reflection and self-guided reading. Lecture, practical and workshop sessions in the UK are employed to introduce the field trip and the drone project assessment and support the completion of projects. Lecture, seminar and workshop sessions in the field are employed to develop learning and support data capture and processing. | *Assessment:*  Project proposal report (35%) Field study report (65%) |