

Liverpool John Moores University

Title: CLIMATE CHANGE
Status: Definitive
Code: **5307NATSCI** (121172)
Version Start Date: 01-08-2021

Owning School/Faculty: Biological and Environmental Sciences
Teaching School/Faculty: Biological and Environmental Sciences

Team	Leader
Alexandre Gagnon	Y
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Academic Level: FHEQ5 **Credit Value:** 20 **Total Delivered Hours:** 50
Total Learning Hours: 200 **Private Study:** 150

Delivery Options

Course typically offered: Semester 2

Component	Contact Hours
Lecture	24
Practical	24

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	Report	Climate impacts report	50	
Exam	Exam	Final exam	50	2

Aims

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 Outcomes

After completing the module the student should be able to:

- 1 Evaluate how the earth's climate has changed during the instrumental period, set within a longer-term palaeoclimate context
- 2 Explain and discuss the factors responsible for contemporary climate change and critique the range of opinions across science and society with respect to these causes
- 3 Apply practical skills to acquire and interpret climate model output at a range of temporal and spatial resolutions
- 4 Critically evaluate the impact of contemporary and projected climate change on people, and consider societal response to these challenges

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

Climate Impacts Report	3	4
Exam	1	2

Outline Syllabus

An introduction to the climate system. Detection of contemporary climate change from the instrumental record, from changes in large-scale earth systems such as alpine glaciers, sea ice, sea level, and from secondary indicators. An introduction to palaeoclimate and proxies for palaeoclimate reconstruction. The attribution of climate change through natural and anthropogenic forcing mechanisms. Climate models and future projections. Application of climate change scenarios and impacts of future scenarios, including doomsday scenarios. Vulnerability and adaptation of society to climate change. Climate change policy, mitigation and social attitudes to sustainability and climate change scepticism.

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.

Notes

Climate change has become one of the leading issues on the international political agenda as concern abounds regarding the rising concentrations of greenhouse gases in our atmosphere. Global efforts to cut emissions have achieved very limited success and the impacts of climate change are set to escalate over the coming century. Through the twin lenses of scientific scrutiny and socio-political analysis, this module examines the many facets that constitute contemporary climate change, from the observed changes and physical causes to the impacts and human response. As such, this module bridges many of the gaps between physical and human geography and opens up a wide range of final year modular options, as well as providing a range of transferable and employable key skills including laboratory work, data processing, debating and report writing. Formative assessments, in the form of practical exercises addressed throughout the course, provide ample opportunity for students to receive feedback on their acquisition of these skills.