



Swansea University
Prifysgol Abertawe

**FACULTY OF SCIENCE AND
ENGINEERING**

**UNDERGRADUATE STUDENT
HANDBOOK**

YEAR 1 (FHEQ LEVEL 4)

**BSC PHYSICAL GEOGRAPHY
UNDERGRADUATE PROGRAMMES**

**SUBJECT SPECIFIC
PART TWO OF TWO
MODULE AND COURSE STRUCTURE
2023-24**

DISCLAIMER

The Faculty of Science and Engineering has made all reasonable efforts to ensure that the information contained within this publication is accurate and up-to-date when published but can accept no responsibility for any errors or omissions.

The Faculty of Science and Engineering reserves the right to revise, alter or discontinue degree programmes or modules and to amend regulations and procedures at any time, but every effort will be made to notify interested parties.

It should be noted that not every module listed in this handbook may be available every year, and changes may be made to the details of the modules. You are advised to contact the Faculty of Science and Engineering directly if you require further information.

The 23-24 academic year begins on 25 September 2023

Full term dates can be found [here](#)

DATES OF 23-24 TERMS

25 September 2023 – 15 December 2023

8 January 2024 – 22 March 2024

15 April 2024 – 07 June 2024

SEMESTER 1

25 September 2023 – 29 January 2024

SEMESTER 2

29 January 2024 – 07 June 2024

SUMMER

10 June 2024 – 20 September 2024

IMPORTANT

Swansea University and the Faculty of Science of Engineering takes any form of **academic misconduct** very seriously. In order to maintain academic integrity and ensure that the quality of an Award from Swansea University is not diminished, it is important to ensure that all students are judged on their ability. No student should have an unfair advantage over another as a result of academic misconduct - whether this is in the form of **Plagiarism, Collusion** or **Commissioning**.

It is important that you are aware of the **guidelines** governing Academic Misconduct within the University/Faculty of Science and Engineering and the possible implications. The Faculty of Science and Engineering will not take intent into consideration and in relation to an allegation of academic misconduct - there can be no defence that the offence was committed unintentionally or accidentally.

Please ensure that you read the University webpages covering the topic – procedural guidance [here](#) and further information [here](#). You should also read the Faculty Part One handbook fully, in particular the pages that concern Academic Misconduct/Academic Integrity.

Welcome to the Faculty of Science and Engineering!

Whether you are a new or a returning student, we could not be happier to be on this journey with you.

At Swansea University and in the Faculty of Science and Engineering, we believe in working in partnership with students. We work hard to break down barriers and value the contribution of everyone.

Our goal is an inclusive community where everyone is respected, and everyone's contributions are valued. Always feel free to talk to academic, technical and administrative staff, administrators - I'm sure you will find many friendly helping hands ready to assist you. And make the most of living and working alongside your fellow students.

During your time with us, please learn, create, collaborate, and most of all – enjoy yourself!

Professor David Smith
Pro-Vice-Chancellor and Executive Dean
Faculty of Science and Engineering



| Faculty of Science and Engineering | |
|--|---|
| Pro-Vice-Chancellor and Executive Dean | Professor David Smith |
| Head of Operations | Mrs Ruth Bunting |
| Associate Dean – Student Learning and Experience (SLE) | Dr Laura Roberts |
| School of Biosciences, Geography and Physics | |
| Head of School | Dr Kevin Rees |
| School Education Lead | Dr Wendy Harris and Dr Sarah Roberts |
| Head of Geography | TBC |
| Geography Programme Director | Dr Joanne Maddern |
| Year Coordinators | Year 0 – Dr Kath Ficken Year 1 – Dr Kath Ficken Year 2 – Dr Nick Felstead Year 3 – Dr Keith Halfacree PGT – Dr Iain Robertson |

STUDENT SUPPORT

The Faculty of Science and Engineering has two **Reception** areas - Engineering Central (Bay Campus) and Wallace 223c (Singleton Park Campus).

Standard Reception opening hours are Monday-Friday 8.30am-4pm.

The **Student Support Team** provides dedicated and professional support to all students in the Faculty of Science and Engineering. Should you require assistance, have any questions, be unsure what to do or are experiencing difficulties with your studies or in your personal life, our team can offer direct help and advice, plus signpost you to further sources of support within the University. There are lots of ways to get information and contact the team:

Email: studentsupport-scienceengineering@swansea.ac.uk (Monday–Friday, 9am–5pm)

Call: +44 (0) 1792 295514 (Monday-Friday, 10am–12pm, 2–4pm).

Zoom: By appointment. Students can email, and if appropriate we will share a link to our Zoom calendar for students to select a date/time to meet.

The current student **webpages** also contain useful information and links to other resources:

<https://myuni.swansea.ac.uk/fse/>

READING LISTS

Reading lists for each module are available on the course Canvas page and are also accessible via <http://ifindreading.swan.ac.uk/>. We've removed reading lists from the 23-24 handbooks to ensure that you have access to the most up-to-date versions.

We do not expect you to purchase textbooks, unless it is a specified key text for the course.

THE DIFFERENCE BETWEEN COMPULSORY AND CORE MODULES

Compulsory modules must be **pursued** by a student.

Core modules must not only be **pursued**, but also **passed** before a student can proceed to the next level of study or qualify for an award. Failures in core modules must be redeemed.

Further information can be found under “Modular Terminology” on the following link -

<https://myuni.swansea.ac.uk/academic-life/academic-regulations/taught-guidance/essential->

[info-taught-students/your-programme-explained/](#)

Year 1 (FHEQ Level 4) 2023/24
Physical Geography
 BSc Physical Geography[F840]
 BSc Physical Geography with a Year Abroad[F932]
 BSc Physical Geography with a Year in Industry[F931]

Compulsory Modules

| Semester 1 Modules | Semester 2 Modules |
|--|---|
| GEG132 Introduction to Earth Systems 20 Credits Dr E Urbanek/Dr NJ Felstead/Dr JR Jordan/Dr I Robertson | GEL121 Introduction to Geology 20 Credits Dr KJ Ficken/Dr KJ Preece |
| Total 120 Credits | |

Optional Modules

Choose exactly 20 credits

| | | | | |
|---------------|---------------------|--|-----|----|
| GEC100 | Sgiliau Daearyddol | Dr RH Meara | TB1 | 20 |
| GEG100 | Geographical skills | Dr HH Harper/Dr KJ Ficken/Dr KG Rees/.. | TB1 | 20 |

And

Choose exactly 20 credits

| | | | | |
|---------------|---------------------------------|--|-----|----|
| GEC133 | Peryglon Naturiol a Chymdeithas | Dr RH Meara/Dr CJT Ladd/Dr KJ Preece/.. | TB2 | 20 |
| GEG133 | Natural Hazards and Society | Dr RH Meara/Prof MA Doel/Prof SH Doerr/.. | TB2 | 20 |

And

Choose exactly 20 credits

| | | | | |
|---------------|---|---|-----|----|
| GEC135 | Cynaliadwyedd a'r Argyfwng Hinsawdd | Dr RH Meara/Dr KR Evans/Dr CJT Ladd/.. | TB1 | 20 |
| GEG135 | Sustainability and the Climate Emergency | Dr KH Halfacree/Dr KJ Ficken/Prof PRJ North/.. | TB1 | 20 |

And

Choose exactly 20 credits

| | | | | |
|----------------|---|--|-----|----|
| GEC140 | Prosiect a Dulliau Ymchwil | Dr RH Meara | TB2 | 20 |
| GEG140P | Project and Methods (Physical Geography) | Prof T Murray/Dr JAB Rosette/Dr RG Smith/.. | TB2 | 20 |

GEC100 Sgiliau Daearyddol

Credits: 20 Session: 2023/24 September-January

Pre-requisite Modules:

Co-requisite Modules:

Lecturer(s): Dr RH Meara

Format: Darlithoedd: 11awr (in English)
Labordai: 27awr (yn Gymraeg)
Gwaith Maes: 6awr (yn Gymraeg)

Contact Hours will be delivered through a blend of live activities online and on-campus, and may include, for example, lectures, seminars, practical sessions and Academic Mentoring sessions.

Delivery Method: All Programmes will employ a blended approach to delivery using the Canvas Digital Learning Platform for live and self-directed online activity, with live and self-directed on-campus activities each week. Students may also have the opportunity to engage with online versions of sessions delivered on-campus

Darlithoedd wedi eu darparu ar y campws.
Sesiynau ymarferol wedi eu darparu ar y campws.
Teithiau maes i'r ardal gyfagos.

(Lectures delivered on campus.
Practicals mainly on campus.
Fieldtrips to the surrounding area)

Module Aims: Bwriad y modiwl hwn yw cyflwyno myfyrwyr i sgiliau daearyddol craidd. Bydd y sgiliau gwerthfawr yma yn cael eu meithrin trwy gydol eu gradd ym Mhrifysgol Abertawe. Dylai myfyrwyr sy'n dilyn y modiwl gallu defnyddio'r technegau hyn i ddehongli a dadansoddi data o amrywiaeth o amgylcheddau a chyd-destunau. Trafodwyd sgiliau cyflwyno megis defnydd tablau a chreu mapiau.

(The aim of this module is to introduce the participants to essential geographical skills. These invaluable skills will become enhanced throughout their degree at Swansea University. Participants should be able to apply these techniques to data from a wide variety of environments and contexts. Presentation skills will be covered from the use of tables to the drawing of maps.)

Module Content: Bydd y modiwl yma yn cyflwyno rhai o'r sgiliau hanfodol sydd eu heisiau gan ddaearyddwyr. Mae'r gyfadran darlithoedd (11 awr) yn canolbwyntio ar ddadansoddi a dehongli data daearyddol ac fe roddwyd pwyslais arbennig ar dechnegau meintiol sylfaenol. Strwythurwyd sesiynau ymarferol (33 awr) er mwyn galluogi myfyrwyr i ddysgu'r technegau hyn. Anelwyd y modiwl at fyfyrwyr daearyddiaeth o bob maes er mwyn iddynt werthfawrogi sgiliau mathemategol, gwyddonol a mordwyol sylfaenol. Trafodwyd cyflwyno gwybodaeth daearyddol hefyd.

(This module introduces some of the essential skills required by geographers. The lecture component (11 hours) focuses upon the analysis of geographical data with a particulate emphasis on basic quantitative techniques. Practical (33 hours) are structured to enable students to learn these techniques. The module is directed towards all geography students to allow them to appreciate basic navigational, scientific and mathematical skills. Presentation of geographical information will also be covered.)

Intended Learning Outcomes: Dealltwriaeth eang o sgiliau trosglwyddadwy hanfodol Hyder i ddefnyddio profion ystadegol meintiol i amrywiaeth o ddata Dealltwriaeth ddofn o'r materion sy'n tansellio problemau daearyddol Y gallu i ddatblygu yn unigol ond ar yr un pryd cydnabod pwysigrwydd gweithio fel rhan o dîm Datblygu ymwybyddiaeth beirniadol o ymchwil daearyddol.

(A broad understanding of essential geographical skills
Confidence to apply quantitative statistical test to a wide range of data
An in-depth understanding of the issues underlying geographical problems
The ability to independently develop yet appreciate the importance of teamwork
Develop a critical awareness of geographical research)

Assessment: Coursework 1 (10%)
Coursework 2 (10%)
Coursework 3 (40%)
Coursework 4 (40%)

Assessment Description: Coursework 1: Field site leaflet (group assignment)
Coursework 2: Digimap project
Coursework 3: Online tests taken throughout the term
Coursework 4: Tutorial group essay

Moderation approach to main assessment: Moderation by sampling of the cohort

Assessment Feedback: Bydd myfyrwyr yn derbyn adborth ar asesu parhaus (Ymarferion a'r Adroddiad Prosiect) ac arholiadau trwy'r system tiwtorialau (modiwl GEC111).

(Students will receive feedback on continuous assessment (Practicals and Project Report) and examinations through the tutorial system)

Failure Redemption: Ailsefyll gwaith cwrs yn y cyfnod Atodol ym mis Awst.

(Resit coursework in the August Supplementary period)

Reading List: Danny McCarroll author., Simple statistical tests for geography / Danny McCarroll., Boca Raton, FL : CRC Press is an imprint of the Taylor & Francis Group, an Informa business, 2017. ISBN: 9781498758819

Pauline E. Kneale (Pauline Estner), 1954- author., Study skills for geography, earth and environmental science students / Pauline E. Kneale., Abingdon, Oxon : Routledge is an imprint of the Taylor & Francis Group, an informa business, 2019. ISBN: 9781351026444

Additional Notes: Delivery of both teaching and assessment will be blended including live and self-directed activities online and on-campus.

Nid yw'r modiwl yma ar gael i fyfyrwyr sy'n ymweld neu fyfyrwyr ar gynlluniau cyfnewid. Mae'r gallu i ysgrifennu yn y Gymraeg yn hanfodol.

(Not available to visiting or exchange students. Competence in written Welsh is a necessity.)

GEC133 Peryglon Naturiol a Chymdeithas

Credits: 20 Session: 2023/24 January-June

Pre-requisite Modules:

Co-requisite Modules:

Lecturer(s): Dr RH Meara, Dr CJT Ladd, Dr KJ Preece

Format: 20 darlith, 4 dosbarth ymarferol, 1 sesiwn 'diwrnod trychineb' diwrnod o hyd

1 hour lectures

2 x 2 practical classes

1 day long 'disaster day'

Contact Hours will be delivered through a blend of live activities online and on-campus, and may include, for example, lectures, seminars, practical sessions and Academic Mentoring sessions.

Delivery Method: All Programmes will employ a blended approach to delivery using the Canvas Digital Learning Platform for live and self-directed online activity, with live and self-directed on-campus activities each week. Students may also have the opportunity to engage with online versions of sessions delivered on-campus

Ar y Campws

On Campus

Module Aims: .Bydd y modiwl hwn yn ymchwilio i agweddau peryglus amgylchedd y Ddaear a pherthynas y gymdeithas â nhw. Bydd egwyddorion cychwynnol yn cynnwys diffiniad o berygl naturiol, trychineb, risg a cholled ac ymagweddau at leihau risg a rheoli trychinebau. Mae'r prif fathau o berygl naturiol yn cael eu hastudio er mwyn deall sut maent yn gweithredu, ble, a pha mor aml maent yn debygol o ddigwydd. Caiff canlyniadau peryglus eu hystyried, yn ogystal â sut gall y gymdeithas ymateb i ddigwyddiadau peryglus. Mae agweddau allweddol yn cynnwys trafod peryglon cynradd ac eilradd, rhagweld a monitro peryglon, a deall sut y gellir lleihau eu heffeithiau niweidiol. Bydd y peryglon naturiol a fydd yn cael eu hystyried yn y modiwl hwn yn cynnwys ffrwydradau llosgfynyddoedd, daeargrynfeydd, tswnamiau, tanau gwyllt, tirlithriadau, digwyddiadau tywydd eithafol, llifogydd, cwmpfeydd eira a Pherylon Mawr. Bydd y modiwl hefyd yn ystyried y cysyniad o "Bobl fel Peryglon". Bydd darlithoedd yn ymdrin ag egwyddorion cyffredinol ynghyd ag astudiaethau achos. Bydd dosbarthiadau ymarferol yn atgyfnerthu'r cysyniadau a drafodir mewn darlithoedd. Bydd agwedd ymarferol y gwaith hwn yn dod i uchafbwynt mewn diwrnod efelychu rheolaeth mewn trychineb.

This module investigates hazardous aspects of Earth's natural environment and how society relates to them. Introductory principles include the definition of natural hazard, disaster, risk and loss, and approaches to reducing risk and managing disasters. Major types of natural hazard are studied in order to understand how they operate, where, and how frequently they are likely to occur. Hazardous consequences are explored, as well as how society can respond to hazardous events. Key aspects include discussion of primary and secondary hazards, prediction, forecasting and monitoring of hazards, and understanding how their harmful effects can be minimised.

Natural hazards considered during this module include volcanic eruptions, earthquakes, tsunamis, wildfires, landslides, extreme weather events, flooding, avalanches and Mega Hazards. The module will also consider the concept of "Humans as Hazards". Lectures consider general principles as well as case studies. Practical classes reinforce concepts learned in lectures. The practical aspect of the work will culminate in a disaster management simulation day.

Module Content: Cyflwyniad i beryglon a thrychinebau

Peryglon naturiol – prosesau a chanlyniadau ffrwydradau llosgfynyddoedd, daeargrynfeydd, tswnamïau, tanau gwyllt, tirlithriadau, digwyddiadau tywydd eithafol, llifogydd, cwmpfeydd eira a pheryglon mawr. Agweddau thematig - cofnod daearegol o ddigwyddiadau trychinebus fel dangosydd o'r tebygrwydd y byddant yn digwydd yn y dyfodol; monitro peryglon, newid byd-eang a pheryglon naturiol; byw gyda pheryglon naturiol.

Ymhlith y testunau y mae:

Cyflwyniad i beryglon a thrychinebau

Peryglon folcanig

Tanau gwyllt

Peryglon seismig

Peryglon sy'n gysylltiedig â goleddfau, Peryglon Mawr Peryglon Corwyntoedd

Arsylwi'r Ddaear o ran rheoli peryglon, newid a pheryglon amgylcheddol yn y dyfodol, llifogydd yn y dyfodol a pheryglon hydrolegol Tswnamïau

Risg i'r gymdeithas a chadernid

Introduction to hazards and disasters

Natural hazards - the processes and consequences of volcanic eruptions, earthquakes, tsunamis, wildfires, landslides, extreme weather events, flooding, avalanches and mega hazards

Thematic aspects - the geological record of catastrophic events as an indicator of their likely future occurrence;

monitoring hazards, global change and natural hazards; living with natural hazards.

Topics include:

Introduction to natural hazards and disasters

Volcanic hazards

Wildfires

Seismic hazards

Slope-related hazards

Megahazards

Hurricane hazards

Future environmental change & hazards

Flood hazards & hydrological hazards

Tsunamis

Risk society and resilience

Intended Learning Outcomes: Erbyn diwedd y modiwl hwn, dylai cyfranogwyr allu:

- diffinio peryglon naturiol, trychinebau, colledion a risg;
- esbonio sut y gall prosesau naturiol effeithio'n andwyol ar bobl, eu heiddo a'r amgylchedd;
- esbonio'r prosesau ffisegol sy'n achosi ffrwydradau llosgfynyddoedd, daeargrynfeydd, tswnamïau, tanau gwyllt, tirlithriadau, y tywydd, llifogydd, cwmpfeydd eira a pheryglon mawr.
- asesu'r dystiolaeth ar gyfer, a risg sy'n deillio o, ddigwyddiadau amllder isel ond o bwysigrwydd mawr
- disgrifiad o ddosraniad digwyddiadau naturiol catastroffig mewn gofod ac amser;
- dangos sut mae effeithiau digwyddiadau peryglus yn dibynnu ar gamau gweithredu'r gymdeithas cyn ac yn ystod digwyddiadau ac esbonio rolau camau lliniaru, monitro, rhagweld a rhybuddio wrth leihau'r risg o beryglon naturiol;

By the end of this module you should be able to:

- define natural hazards, disasters, losses and risk;
- explain how natural processes can adversely affect people, their property and the environment;
- explain the physical processes that cause volcanic eruptions, earthquakes, slope failures, tsunamis, avalanches, weather, flooding, megahazards and wildfires;
- assess the evidence for and risk from high-magnitude-low-frequency events;
- describe the distribution in space and time of catastrophic natural events;
- show how the effects of hazardous events depend on actions taken by society before and during the events and explain the roles of mitigation, monitoring, forecasting and warning in reducing the risk from natural hazards;

Assessment: Examination 1 (50%)
Coursework 1 (10%)
Coursework 2 (10%)
Coursework 3 (30%)

Resit Assessment: Examination (Resit instrument) (100%)

Assessment Description: Gwaith Cwrs 1 – Gwaith Ymarferol Archifau (10%)
Gwaith Cwrs 2 – Map peryglon folcanig (10%)
Gwaith Cwrs 3 – Adroddiad sy'n seiliedig ar efelychiadau trychinebau (30%)
Arholiad – Arholiad Aml-ddewis (50%)

Coursework 1 - Archive practical (10%)
Coursework 2 - Volcanic hazard map (10%)
Coursework 3 - Report based on disaster simulations (30%)
Exam - Multiple Choice Exam (50%)

Moderation approach to main assessment: Moderation by sampling of the cohort

Assessment Feedback: Darperir adborth grwp ar gyfer adroddiadau'r diwrnod trychineb gan ddefnyddio ffurflenni adborth safonol yr adran.

Bydd sylwadau unigol ar gyfer atebion arholiad; Bydd myfyrwyr yn gallu gweld y rhain mewn cyfarfodydd tiwtorial

adrannol. Rhoddir adborth cyffredinol ar atebion arholiad drwy Blackboard.

Darpariaeth asesu ar gyfer myfyrwyr ag anableddau

Gwneir darpariaeth ar gyfer myfyrwyr ag anableddau yn unol â chyngor gan y Swyddfa Anableddau.

Rhowch fanylion am sut y byddai myfyrwyr yn gwneud yn iawn am fethiant yn y modiwl

Group feedback is provided for the disaster day reports using standard departmental feedback forms. Individual comments are written on examination answers; students will be able to view these in departmental tutorial meetings. General feedback on examination answers will be provided via Blackboard.

Failure Redemption:

Arholiad ail-leoli

Resit examination

Reading List: Rydgren, Knut ; Bondevik, Stein, Moss growth patterns and timing of human exposure to a Mesolithic tsunami in the North Atlantic, Geological Society of America (GSA), 2014-12-19.ISBN: 00917613
Harbitz, Carl B ; Harbitz, Carl B ; Løvholt, Finn ; Løvholt, Finn ; Bungum, Hilmar ; Bungum, Hilmar, Plag, Hans-Peter ; Plag, Hans-Peter ; Marsh, Stuart ; Marsh, Stuart, Submarine landslide tsunamis: how extreme and how likely?, Springer Netherlands, 2014-07.ISBN: 0921030X
PETER J. TALLING ; MICHAEL L CLARE ; MORELIA URLAUB ; ED POPE ; JAMES E. HUNT ; SEBASTIAN F.L. WATT, Large Submarine Landslides on Continental Slopes: Geohazards, Methane Release, and Climate Change, The Oceanography Society, 2014-06-01.ISBN: 10428275
Carracedo, Juan Carlos, Growth, structure, instability and collapse of Canarian volcanoes and comparisons with Hawaiian volcanoes, Elsevier B.V, 1999.ISBN: 03770273
Ward, Steven N ; Day, Simon, Cumbre Vieja Volcano—Potential collapse and tsunami at La Palma, Canary Islands, American Geophysical Union, 2001-09-01.ISBN: 00948276
Self, Stephen ; Gertisser, Ralf, Tying down eruption risk, 2015-03-31.ISBN: 17520894
Costa, Antonio ; Smith, Victoria C ; Macedonio, Giovanni ; Matthews, Naomi E, The magnitude and impact of the Youngest Toba Tuff super-eruption, Frontiers Media S.A, 2014-08-04.ISBN: 22966463
Mason, Ben G ; Pyle, David M ; Oppenheimer, Clive, The size and frequency of the largest explosive eruptions on Earth, Springer-Verlag, 2004-12.ISBN: 02588900
Self, Stephen, Volcanic Hazards, Risks, and Disasters, Elsevier Inc, 2015.ISBN: 9780123964533
Voosen, Paul, Massive crater under Greenland's ice points to climate-altering impact in the time of humans, 2018-11-14.ISBN: 00368075
Garde, Adam A ; Søndergaard, Anne Sofie ; Guvad, Carsten ; Dahl-Møller, Jette ; Nehrke, Gernot ; Sanei, Hamed ; Weikusat, Christian ; Funder, Svend ; Kjær, Kurt H ; Larsen, Nicolaj Krog, Pleistocene organic matter modified by the Hiawatha impact, northwest Greenland, 2020-09-01.ISBN: 00917613
Harris, Alan, What Spaceguard did, Nature Publishing Group, 2008-06-26.ISBN: 00280836
Poole, Graeme, Terror in the skies of Russia, Blackwell Publishing Ltd, 2013-09.ISBN: 02666979
Kenny, Gavin G. ; Hyde, William R. ; Storey, Michael ; Garde, Adam A. ; Whitehouse, Martin J. ; Beck, Pierre ; Johansson, Leif ; Søndergaard, Anne Sofie ; Bjørk, Anders A. ; MacGregor, Joseph A. ; Khan, Shfaqat A. ; Mouginit, Jérémie ; Johnson, Brandon C. ; Silber, Elizabeth A. ; Wielandt, Daniel K.P. ; Kjær, Kurt H. ; Larsen, Nicolaj K., A Late Paleocene age for Greenland's Hiawatha impact structure, American Association for the Advancement of Science, 2022-03-11.ISBN: 23752548
Prichard, Bob, The North Sea surge and east coast floods of 1953, John Wiley & Sons, Ltd, 2013-02.ISBN: 00431656
Rufat, Samuel ; Tate, Eric ; Burton, Christopher G ; Maroof, Abu Sayeed, Social vulnerability to floods: Review of case studies and implications for measurement, Elsevier, 2015-12.ISBN: 22124209
Ballesteros-Cánovas, J. A ; Stoffel, M ; St George, S ; Hirschboeck, K, A review of flood records from tree rings, SAGE Publications, 2015-12.ISBN: 03091333
Archfield, S. A ; Hirsch, R. M ; Viglione, A ; Blöschl, G, Fragmented patterns of flood change across the United States, John Wiley and Sons Inc, 2016-10-16.ISBN: 00948276
Schillereff, Daniel N ; Chiverrell, Richard C ; Macdonald, Neil ; Hooke, Janet M, Flood stratigraphies in lake sediments: A review, Elsevier B.V, 2014-08.ISBN: 00128252
Dewan, Tanvir H, Societal impacts and vulnerability to floods in Bangladesh and Nepal, Elsevier B.V, 2015-03.ISBN: 22120947
Gary John Brierley, Why we should release New Zealand's strangled rivers to lessen the impact of future floods.
Mangini, Walter ; Viglione, Alberto ; Hall, Julia ; Hundecha, Yeshewatesfa ; Ceola, Serena ; Montanari, Alberto ; Rogger, Magdalena ; Salinas, José Luis ; Borzi, Iolanda ; Parajka, Juraj, Detection of trends in magnitude and frequency of flood peaks across Europe, Taylor & Francis, 2018-03-12.ISBN: 02626667
Keith Smith 1938-, Environmental hazards : assessing risk and reducing disaster / Keith Smith., Routledge, 2013.ISBN: 9780415681063
Guimarães Nobre, Gabriela ; Muis, Sanne ; Veldkamp, Ted I.E ; Ward, Philip J, Achieving the reduction of disaster risk by better predicting impacts of El Niño and La Niña, Elsevier, 2019-07.ISBN: 25900617
John Abraham, Global warming is intensifying El Niño weather.
Fasullo, J. T ; Otto-Bliesner, B. L ; Stevenson, S, ENSO's Changing Influence on Temperature, Precipitation, and Wildfire in a Warming Climate, American Geophysical Union (AGU), 2018-09-16.ISBN: 00948276
Cattiaux, J ; Vautard, R ; Cassou, C ; Yiou, P ; Masson-Delmotte, V ; Codron, F, Winter 2010 in Europe: A cold extreme in a warming climate: COLD WINTER 2010 IN EUROPE, 2010-10.ISBN: 00948276
Scaife, A. A ; Arribas, A ; Blockley, E ; Brookshaw, A ; Clark, R. T ; Dunstone, N ; Eade, R ; Fereday, D ; Folland, C. K ; Gordon, M ; Hermanson, L ; Knight, J. R ; Lea, D. J ; MacLachlan, C ; Maidens, A ; Martin,

M ; Peterson, A. K ; Smith, D ; Vellinga, M ; Wallace, E ; Waters, J ; Williams, A, Skillful longrange prediction of European and North American winters, 2014-04-16.ISBN: 00948276
Met Office, North Atlantic Oscillation.

Caesar, L ; McCarthy, G. D ; Thornalley, D. J. R ; Cahill, N ; Rahmstorf, S, Current Atlantic Meridional Overturning Circulation weakest in last millennium, 2021-02-25.ISBN: 17520894

Stott, Peter A ; Christidis, Nikolaos ; Otto, Friederike E. L ; Sun, Ying ; Vanderlinden, JeanPaul ; van Oldenborgh, Geert Jan ; Vautard, Robert ; von Storch, Hans ; Walton, Peter ; Yiou, Pascal ; Zwiers, Francis W, Attribution of extreme weather and climaterelated events, John Wiley & Sons, Inc, 2016-01.ISBN: 17577780

IPCC, IPCC AR6 Climate Change 2022 Impacts Adaptation and Vulnerability.

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Stimpson, Ian, Japan's Tohoku Earthquake and Tsunami, Blackwell Publishing Ltd, 2011-05.ISBN: 02666979

Lacassin, Robin ; Lavelle, Sylvain, The crisis of a paradigm. A methodological interpretation of Tohoku and Fukushima catastrophe, Elsevier B.V, 2016-04.ISBN: 00128252

Jose C. Borrero, Field Data and Satellite Imagery of Tsunami Effects in Banda Aceh, American Association for the Advancement of Science, 2005-06-10.ISBN: 00368075

Gaillard, Jean-Christophe ; Clavé, Elsa ; Vibert, Océane ; Azhari ; Dedi ; Denain, Jean-Charles ; Efendi, Yusuf ; Grancher, Delphine ; Liamzon, Catherine C ; Sari, Desy Rosnita ; Setiawan, Ryo, Ethnic groups' response to the 26 December 2004 earthquake and tsunami in Aceh, Indonesia, Springer Netherlands, 2008-10.ISBN: 0921030X

Lauterjung, J ; Münch, U ; Rudloff, A, The challenge of installing a tsunami early warning system in the vicinity of the Sunda Arc, Indonesia, Copernicus GmbH, 2010-04-06.ISBN: 16849981

Waltham, Tony, The Asian Tsunami disaster, December 2004, Blackwell Publishing Ltd, 2005-01.ISBN: 02666979

Bondevik, Stein, Earth science The sands of tsunami time, 2008-10-30.ISBN: 00280836

Chagué-Goff, Catherine ; Schneider, Jean-Luc ; Goff, James R ; Dominey-Howes, Dale ; Strotz, Luke, Expanding the proxy toolkit to help identify past events — Lessons from the 2004 Indian Ocean Tsunami and the 2009 South Pacific Tsunami, Elsevier B.V, 2011-07.ISBN: 00128252

Costa, Pedro J.M ; Dawson, Sue ; Ramalho, Ricardo S ; Engel, Max ; Dourado, Francisco ; Bosnic, Ivana ; Andrade, César, A review on onshore tsunami deposits along the Atlantic coasts, Elsevier B.V, 2021-01.ISBN: 00128252

Bondevik, Stein ; Løvholt, Finn ; Harbitz, Carl ; Mangerud, Jan ; Dawson, Alastair ; Inge Svendsen, John, The Storegga Slide tsunami—comparing field observations with numerical simulations, Elsevier Ltd, 2005.ISBN: 02648172

JANKAEW, Kruawun ; ATWATER, Brian F ; SAWAI, Yuki ; CHOOWONG, Montri ; CHAROENTITIRAT, Thasinee ; MARTIN, Maria E ; PRENDERGAST, Amy, Medieval forewarning of the 2004 Indian Ocean tsunami in Thailand, Nature Publishing Group, 2008.ISBN: 00280836

Dall'Osso, F ; Dominey-Howes, D, Public assessment of the usefulness of "draft" tsunami evacuation maps from Sydney, Australia – implications for the establishment of formal evacuation plans, Copernicus GmbH, 2010-08-25.ISBN: 16849981

Additional Notes: Delivery of both teaching and assessment will be blended including live and self-directed activities online and on-campus.

Ar gael i fyfyrwyr gwadd a myfyrwyr cyfnewid.

Available to visiting and exchange students.

GEC135 Cynaliadwyedd a'r Argyfwng Hinsawdd

Credits: 20 Session: 2023/24 September-January

Pre-requisite Modules:

Co-requisite Modules:

Lecturer(s): Dr RH Meara, Dr KR Evans, Dr CJT Ladd

Format: 36 o oriau cyswllt (32 awr o ddarlithoedd; 4 awr o weithdai)

36 contact hours (32 hours of lectures; 4 hours of workshops)

Contact Hours will be delivered through a blend of live activities online and on-campus, and may include, for example, lectures, seminars, practical sessions and Academic Mentoring sessions.

Delivery Method: All Programmes will employ a blended approach to delivery using the Canvas Digital Learning Platform for live and self-directed online activity, with live and self-directed on-campus activities each week. Students may also have the opportunity to engage with online versions of sessions delivered on-campus

Ar y Campws

On Campus

Module Aims: Bydd y modiwl hwn yn gyflwyniad i newid amgylcheddol byd-eang a bydd yn ystyried agweddau ar gynaliadwyedd fel pwnc sy'n effeithio ar fywydau bob dydd. Mae her cynaliadwyedd yn sylweddol a bydd y darlithoedd yn eich darparu â'r wybodaeth a fydd ei hangen arnoch i ymwneud â Nodau Datblygu Cynaliadwy'r

This module is an introduction to global environmental change and explores aspects of the issue of sustainability as it affects everyday lives. The challenge of sustainability is significant and the lectures will provide you with the information needed to engage with the UN's Sustainable Development Goals.

Module Content: Wythnos

- 1-3 Cyflwyniad: Rhyngweithio dynol-ddaearyl
- Newid mewn poblogaethau ac effaith amgylcheddol
- Gwareiddiadau a'r hinsawdd
- System hinsoddol
- Newid yn yr hinsawdd
- Gwleidyddiaeth newid yn yr hinsawdd
- Her cynaliadwyedd
- Dirywiad amgylcheddol
- Y Nodau Datblygu Cynaliadwy
- 4-7 Defnydd tir a dirywiad
- 7-9 Materion trefol
- 9-11 Effeithiau newid yn yr hinsawdd
- 11 Casgliad: Tuag at brifysgol gynaliadwy?

Week

- 1-3 Introduction: human-earth interaction
- Population change and environmental impact
- Civilizations and climate
- Climate System
- Climate change
- Politics of climate change
- The challenge of sustainability
- Environmental degradation
- The Sustainable Development Goals
- 4-7 Land use and degradation
- 7-9 Urban issues
- 9-11 Climate change impacts
- 11 Conclusion: towards the sustainable university?

Intended Learning Outcomes: Erbyn diwedd y modiwl hwn, dylai cyfranogwyr allu:

1. Deall cysyniadau allweddol newid amgylcheddol byd-eang.
2. Dadansoddi pwysigrwydd perthynol ffactorau dynol a ffisegol wrth achosi newid amgylcheddol.
3. Deall bod agweddau diwylliannol, economaidd, cymdeithasol, gwleidyddol a ffisegol ar 'cynaliadwyedd'.
4. Gwerthuso agweddau ar 'cynaliadwyedd' o fewn ystod o gyd-destunau daearyddol.
5. Disgrifio dulliau diweddar i fonitro a modelu newid amgylcheddol byd-eang.
6. Adolygu'n feirniadol dystiolaeth canlyniadau newid amgylcheddol byd-eang a'r her sy'n wynebu datblygiad cynaliadwy.

By the end of this module you should be able to:

1. Understand key concepts of global environmental change.
2. Analyse the relative importance of human and physical factors in causing environmental change.
3. Recognise that 'sustainability' has cultural, economic, social, political and physical dimensions.
4. Evaluate aspects of 'sustainability' within a range of geographical contexts.
5. Describe recent methods to monitor and model global environmental change.
6. Critically review the evidence of the consequences of global environmental change and the challenge facing sustainable development.

| | |
|--------------------|---------------------|
| Assessment: | Coursework 1 (20%) |
| | Examination 1 (40%) |
| | Coursework 2 (40%) |

Assessment Description: Arholiad Cwestiynau Aml-ddewis (Ionawr);

C1 1 x blog 500 gair

C2 2 x blog 500 gair (cyfanswm 1,000 o eiriau)

Bydd hwn yn asesiad ffurfiannol fel rhan o'r cwrs hwn.

Moderation approach to main assessment: Partial moderation

Assessment Feedback: Bydd myfyrwyr yn derbyn adborth electronig ar yr adroddiad unigol. Bydd myfyrwyr yn derbyn adborth arholiad yn dilyn yr arholiadau

Students will receive electronic feedback on the individual report.

Students will receive examination feedback after exams.

Failure Redemption: Ailsefyll arholiad neu ailgyflwyno gwaith cwrs

Resit examination or resubmit coursework

Reading List: Paul J. Cloke editor.; Philip Crang editor.; Mark Goodwin editor., *Introducing human geographies* / edited by Paul Cloke, Philip Crang and Mark Goodwin., Milton Park, Abingdon, Oxon : Routledge, 2014.ISBN: 9781444135350

Goudie, Andrew, author., *The nature of the environment*, Blackwell Publishers Ltd, 2001 - 2001.ISBN: 9780631224631

Whitehead, Mark, 1975-, *Spaces of sustainability*, Routledge, 2006.ISBN: 1134246374

Potter, Robert B., author., *Geographies of development : an introduction to development studies*, Routledge, 2018 - 2018.ISBN: 9781138794290

Daniels, P. W., editor.; Bradshaw, Michael J. (Michael John), 1935- editor.; Shaw, Denis, editor.; Sidaway, James D., editor.; Hall, Tim, editor., *An introduction to human geography*, Pearson Education Limited, 2016.ISBN: 9781292082950

Peter Smithson author, Kenneth Addison author; K Atkinson (Kenneth), 1940- author, *Fundamentals of the physical environment* / Peter Smithson, Ken Addison and Ken Atkinson., Routledge, 2008.ISBN: 041539516X

Dobson, Andrew., *Fairness and futurity essays on environmental sustainability and social justice*, Oxford University Press, 1999.ISBN: 9780191522383

Paul J Cloke; Phil Crang 1964-; Mark Goodwin (Mark A.), *Introducing human geographies* / edited by Paul Cloke, Philip Crang and Mark Goodwin., Routledge, 2014.ISBN: 9780203529225

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Ripple, William J ; Wolf, Christopher ; Newsome, Thomas M ; Barnard, Phoebe ; Moomaw, William R, *World Scientists' Warning of a Climate Emergency*, Oxford University Press, 2020-01-01.ISBN: 00063568

Hicks, David, *Why we still need a geography of hope*, Taylor & Francis Ltd, 2018-07-01.ISBN: 00167487

Steve Westlake, *Climate change: yes, your individual action does make a difference*, 2019.

Anderson, Karen, *Integrating multiple scales of remote sensing measurement – from satellites to kites*, SAGE Publications, 2016-04.ISBN: 03091333

Government of Canada, *Remote Sensing Tutorials*.

J. Neumann ; S. Lindgrén, *Great Historical Events That Were Significantly Affected by the Weather: 4, The Great Famines in Finland and Estonia, 1695—97*, American Meteorological Society, 1979-07-01.ISBN: 00030007

Thorvaldur Thordarson ; Stephen Self, *Atmospheric and environmental effects of the 1783–1784 Laki eruption: A review and reassessment*, American Geophysical Union, 2003-01-08.ISBN: 01480227

Benson, Larry V ; Berry, Michael S ; Jolie, Edward A ; Spangler, Jerry D ; Stahle, David W ; Hattori, Eugene M, *Possible impacts of early-11th-, middle-12th-, and late-13th-century droughts on western Native Americans and the Mississippian Cahokians*, Elsevier BV, 2007.ISBN: 02773791

David M. Meko ; Connie A. Woodhouse ; Christopher A. Baisan ; Troy Knight ; Jeffrey J. Lukas ; Malcolm K. Hughes ; Matthew W. Salzer, *Medieval drought in the upper Colorado River Basin*, American Geophysical Union, 2007-05-24.ISBN: 00948276

Castle, Stephanie L ; Thomas, Brian F ; Reager, John T ; Rodell, Matthew ; Swenson, Sean C ; Famiglietti, James S, *Groundwater depletion during drought threatens future water security of the Colorado River Basin*, Blackwell Publishing Ltd, 2014-08-28.ISBN: 00948276

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Paul J Cloke; Phil Crang 1964-; Mark Goodwin (Mark A.), *Introducing human geographies* / edited by Paul Cloke, Philip Crang and Mark Goodwin., Routledge, 2014.ISBN: 9780203529225

Paul J Cloke; Phil Crang 1964-; Mark Goodwin (Mark A.), *Introducing human geographies* / edited by Paul Cloke, Philip Crang and Mark Goodwin., Routledge, 2014.ISBN: 9780203529225

Martinez-Alier, Joan, *The environmentalism of the poor*, Elsevier BV, 2014.ISBN: 00167185

Rocheleau, Dianne E, *Political ecology in the key of policy: From chains of explanation to webs of relation*, Elsevier BV, 2008.ISBN: 00167185

Blaikie, Piers, *Explanation and policy in land degradation and rehabilitation for developing countries*, John Wiley & Sons, Ltd, 1989.ISBN: 10853278

Paul Kingsnorth 1972-, *One no, many yeses : a journey to the heart of the global resistance movement* / Paul Kingsnorth., Free Press, 2003.ISBN: 0743220269

Leandro. Vergara-Camus, Vergara-Camus Contributor, *Land and Freedom The MST, the Zapatistas and Peasant Alternatives to Neoliberalism*, Zed Books, 2014.ISBN: 1322097968

Vergara-camus, Leano, *The MST and the EZLN Struggle for Land: New Forms of Peasant Rebellions*, Blackwell Publishing Ltd, 2009-07.ISBN: 14710358

Hoffmann, Ester ; Fox, Michael, *Food Sovereignty, One Occupation at a Time: An interview with Ester*

Hoffman of Brazil's Landless Workers' Movement (MST) on sustainability, agro-ecology, and the future of the hemisphere's largest social movement, Routledge, 2017-10-02.ISBN: 10714839

Wittman, Hannah, Reframing agrarian citizenship: Land, life and power in Brazil, Elsevier Ltd, 2009.ISBN: 07430167

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Fiona, A ; Mackenzie, D, A working land:crofting communities, place and the politics of the possible in post-Land Reform Scotland, Blackwell Publishing, 2006-09.ISBN: 00202754

Castree, Noel, 'Out there'? 'In here'? Domesticating critical geography, Wiley, 1999-03.ISBN: 14754762

Cloke, Paul J.; Crang, Phil, 1964-; Goodwin, Mark (Mark A.), Introducing human geographies, Routledge, 2014.ISBN: 9780203529225

Lozano, Rodrigo ; Lukman, Rebeka ; Lozano, Francisco J ; Huisingh, Donald ; Lambrechts, Wim, Declarations for sustainability in higher education: becoming better leaders, through addressing the university system, Elsevier BV, 2013-06.ISBN: 09596526

Potter, Robert B., author., Geographies of development : an introduction to development studies, Routledge, 2018 - 2018.ISBN: 9781138794290

Shi, Han ; Lai, Elizabeth, An alternative university sustainability rating framework with a structured criteria tree, Elsevier BV, 2013-12.ISBN: 09596526

Pacione, M, Models of Urban Land Use Structure in Cities of the Developed World, Geographical Association, 2001-04-01.ISBN: 00167487

Whitehead, Mark, 1975-, Spaces of sustainability, Routledge, 2006.ISBN: 1134246374

Drakakis-Smith, D. W., author., Drakakis-Smith, D. W., Third world cities, Routledge, 2000.ISBN: 1134639074

Cloke, Paul J.; Crang, Phil, 1964-; Goodwin, Mark (Mark A.), Introducing human geographies, Routledge, 2014.ISBN: 9780203529225

Pacione, M, Models of Urban Land Use Structure in Cities of the Developed World, Geographical Association, 2001-04-01.ISBN: 00167487

Drakakis-Smith, D. W., author., Drakakis-Smith, D. W., Third world cities, Routledge, 2000.ISBN: 1134639074

Additional Notes: Delivery of both teaching and assessment will be blended including live and self-directed activities online and on-campus.

Ddim ar gael i fyfyrwyr ymweld neu fyfyrwyr cyfnewid. Nid oes rhagofynion na chydofynion ar gyfer y modiwl hwn.

Normally available to elective visiting or exchange students. There are no pre- or co-requisites for this module.

GEC140 Prosiect a Dulliau Ymchwil

Credits: 20 Session: 2023/24 January-June

Pre-requisite Modules:

Co-requisite Modules:

Lecturer(s): Dr RH Meara

Format: 26 awr ar gyfer penwythnos preswyl ac 11 awr ar gyfer prosiect GIS

Delivery Method: Darlithoedd, Sesiynau Ymarferol (ar y campws) a penwythnos preswyl o waith maes ym Mangor/Abertawe a'i ranbarth/Aberystwyth (lleoliad yn newid yn flynyddol).

Module Aims: Mae'r modiwl hwn yn cynnwys hyfforddiant gwaith maes a sgiliau GIS i ddaearyddwyr dynol a ffisegol.

Rhan 1: Mae'r rhan yma yn cyflwyno egwyddorion a thechnegau allweddol a ddefnyddir mewn gwaith maes yn nisgyblaethau Daearyddiaeth, astudiaethau amgylcheddol ac astudiaethau defnyddio tir. Mae'n cynnig profiad o ddefnyddio amryw o ddulliau a thechnegau gwaith maes er mwyn casglu a dadansoddi gwybodaeth mewn perthynas â Daearyddiaeth, yr amgylchedd a defnyddio tir. Dysgir y modiwl ar y cyd â staff o Brifysgol Bangor a Phrifysgol Aberystwyth a dysgir y myfyrwyr o'r sefydliadau yma hefyd ar y modiwl. Dysgir rhan yma'r modiwl yn ystod penwythnos preswyl.

Rhan 2: Prosiect GIS. Bydd yr elfen hon o'r modiwl yn rhoi cyflwyniad i fyfyrwyr i sgiliau allweddol Mapio, Data Gofodol a GIS. Byddant yn ymchwilio i sut mae mapiau a dadansoddiad gofodol yn gallu ein helpu i ddeall a monitro ein byd. Bydd myfyrwyr yn ystyried y defnydd o fapio i ddadansoddi'r amgylchedd a rhannu'r canlyniadau yn y cyfryngau. Byddant yn archwilio i feddalwedd GIS Explore (arc Map, QGIS) a chymryd y camau cyntaf wrth arddangos data gofodol. Bydd myfyrwyr hefyd yn dysgu sut i gyfeirio lleoliad gofodol nodweddion amgylcheddol ar arwyneb y Ddaear, deall sut mae systemau cyfeirio'n berthnasol i leoliadau daearyddol ar fap gwastad a dysgu sut i weithio gyda data o amrywiaeth o systemau cyfeirio gofodol.

Module Content: Rhan 1: Penwythnos preswyl:

1. Cyflwyno a datblygu egwyddorion ac arferion technegau allweddol gwaith maes yn nisgyblaethau daearyddiaeth, astudiaethau amgylcheddol ac astudiaethau defnyddio tir;
 2. Cynnig profiad o ddefnyddio amryw ddulliau a thechnegau gwaith maes er mwyn casglu gwybodaeth mewn perthynas â daearyddiaeth, yr amgylchedd a defnyddio tir;
 3. Rhoi hyfforddiant wrth roi cyflwyniadau ar lafur ac ar bapur;
 4. Rhoi hwb i allu myfyrwyr i ddehongli data maes;
 5. Cynnig profiad a hyfforddiant wrth roi cyflwyniadau ar lafur ac ar bapur.
- Trafodir cyfuniad o'r themau canlynol yn ystod y modiwl:
Gwerthuso biomas coetiroedd; Daearyddiaeth eithrio yn Aberystwyth; gwerthuso defnydd tir yng ngogledd-orllewin Cymru; ffactorau ffisegol a dynol; cymunedau gwledig Cymru: parhad a newid; newidiadau amgylcheddol yn Ne Cymru.

Rhan 2: Prosiect GIS.

Mapio, Data Gofodol a GIS

Data gofodol a Systemau Gwybodaeth Ddaearyddol

Ymchwilio i sut gall mapiau a dadansoddiad gofodol ein helpu i ddeall a monitro ein byd. Ystyried y defnydd o fapiau i ddadansoddi'r amgylchedd a rhannu'r canlyniadau yn y cyfryngau. Ymchwilio i feddalwedd GIS (arc Map, QGIS) a chymryd y camau cynaf i arddangos data gofodol. Dysgu ac ymarfer gweithio gyda fformatiau gwahanol o ddata (ffactor a rhastr).

Dysgu sut i greu mapiau a chynnwys elfennau allweddol ar fap (bar graddfa, allwedd, graticwl). Galluogi darllenwyr i ddehongli eich map a deall eich canlyniadau.

Mae astudiaethau achos yn cynnwys rhestr Fforest a mapio defnydd tir a phoblogaeth a dosraniad dinasoedd byd-eang

Intended Learning Outcomes: Wrth gwblhau'r modiwl hwn dylai myfyrwyr fedru:

1. Trafod addasrwydd yr amryw ddulliau a thechnegau sy'n allweddol i waith maes Daearyddiaeth, yr amgylchedd a defnyddio tir;
2. Defnyddio technegau penodol er mwyn casglu gwybodaeth yn y maes;
3. Dadansoddi a chyflwyno canlyniadau gwaith maes;
4. Deall, dehongli a gwerthuso data maes;
5. Gywiro, defnyddio, dadansoddi a chyflwyno data daearyddol;
6. Dangos sgiliau allweddol wrth Fapio, Data Gofodol a GIS;
7. Trafod sut gall mapiau a dadansoddiad gofodol ein helpu i ddeall a monitro ein byd.

Assessment: Coursework 1 (50%)
Exam - Multiple choice questions (50%)

Assessment Description: 1 x adroddiad gwaith maes neu dasg dogfennaeth ffotograffig / traethawd ffotograff (50%)

1 x arholiad cwis cyntaf (50%)

1 x fieldwork report or photo documentation task / photo essay (50%)

1 x canvas quiz exam (50%)

Moderation approach to main assessment: Moderation by sampling of the cohort

Assessment Feedback: Bydd myfyrwyr yn derbyn adborth electronig ar eu gwaith cwrs ac adborth ysgrifenedig ar y cyflwyniad grwp, ac ar lafar gan eu tiwtor ar eu perfformiad.

Failure Redemption: Ailsefyll yr holl elfennau

Additional Notes: Delivery of both teaching and assessment will be blended including live and self-directed activities online and on-campus.

Dysgir y modiwl yma drwy gyfrwng y Gymraeg. Not normally available to visiting or exchange students. Competence in written and spoken Welsh is essential for this module

| | |
|---|---|
| GEG100 Geographical skills | |
| Credits: 20 Session: 2023/24 September-January | |
| Pre-requisite Modules: | |
| Co-requisite Modules: | |
| Lecturer(s): Dr HH Harper, Dr KJ Ficken, Dr KG Rees, Dr I Robertson | |
| Format: | Lectures = 11 hours Practicals = 26 hours (Help sessions: 18 hours) Contact Hours will be delivered through a blend of live activities online and on-campus, and may include, for example, lectures, seminars, practical sessions and Academic Mentoring sessions. |
| Delivery Method: All Programmes will employ a blended approach to delivery using the Canvas Digital Learning Platform for live and self-directed online activity, with live and self-directed on-campus activities each week. Students may also have the opportunity to engage with online versions of sessions delivered on-campus. Lectures, computer practicals and tutorials are delivered on the Singleton Campus. There will be field trips to the surrounding area | |
| Module Aims: The aim of this module is to introduce the participants to essential geographical skills. These invaluable skills will become enhanced throughout their degree at Swansea University. Participants should be able to apply these techniques in a wide variety of environments and contexts. Skills covered include essay writing, data analysis and map making | |
| Module Content: This module introduces some of the essential skills required by geographers. The lecture component (11 hours) focuses upon the analysis of geographical evidence including basic quantitative techniques. Practical (33 hours) are structured to enable students to learn these techniques. The module is directed towards all geography students to allow them to appreciate basic navigational, scientific and mathematical skills. Presentation of geographical information will also be covered in conjunction with tutorials. | |
| Intended Learning Outcomes: A broad understanding of essential geographical skills Confidence in constructing arguments based on evidence Confidence to apply quantitative statistical tests to a wide range of data An in-depth understanding of the issues underlying geographical problems The ability to independently develop yet appreciate the importance of teamwork | |
| Assessment: | Coursework 1 (10%) Coursework 2 (10%) Coursework 3 (40%) Coursework 4 (40%) |
| Assessment Description: Coursework 1: Field site leaflet (group assignment) Coursework 2: Digimap project Coursework 3: Online tests taken throughout the term Coursework 4: Tutorial group essay | |
| Moderation approach to main assessment: Moderation by sampling of the cohort | |
| Assessment Feedback: Students will receive feedback on continuous assessment via Canvas. | |
| Failure Redemption: Resit coursework in the August Supplementary period. | |
| Reading List: Danny McCarroll author., Simple statistical tests for geography / Danny McCarroll., Boca Raton, FL : CRC Press is an imprint of the Taylor & Francis Group, an Informa business, 2017.ISBN: 9781498758819 Pauline E. Kneale (Pauline Estner), 1954- author., Study skills for geography, earth and environmental science students / Pauline E. Kneale., Abingdon, Oxon : Routledge is an imprint of the Taylor & Francis Group, an informa business, 2019.ISBN: 9781351026444 Spiegelhalter, D. J. author., The art of statistics : learning from data , Pelican, an imprint of Penguin Books, 2019.ISBN: 0241398630 | |

Additional Notes: Delivery of both teaching and assessment will be blended including live and self-directed activities online and on-campus.

Not available to visiting or exchange students.

GEG132 Introduction to Earth Systems

Credits: 20 Session: 2023/24 September-January

Pre-requisite Modules:

Co-requisite Modules:

Lecturer(s): Dr E Urbanek, Dr NJ Felstead, Dr JR Jordan, Dr I Robertson

Format: Lectures

Contact Hours will be delivered through a blend of live activities online and on-campus, and may include, for example, lectures, seminars, practical sessions and Academic Mentoring sessions.

Delivery Method: All Programmes will employ a blended approach to delivery using the Canvas Digital Learning Platform for live and self-directed online activity, with live and self-directed on-campus activities each week. Students may also have the opportunity to engage with online versions of sessions delivered on-campus

On campus

Module Aims: This module forms an essential foundation for more advanced study of physical geography and environmental sciences. It introduces the four main Earth systems: the atmosphere, hydrosphere, biosphere and geosphere. It provides a sound understanding of the processes within each system, and the interactions between them.

The geosphere section introduces topics like the origin of Earth, plate tectonics and describes the distribution of different rock types and processes occurring in the geosphere. The biosphere section deals mainly with flows of energy and nutrients between Earth systems.

The atmosphere section deals with flows of energy and moisture and their role in controlling climate over both space and time. The hydrosphere section focuses on the concepts of the hydrological cycle and the main processes associated with the water fluxes.

In addition, the main properties and functions of soil, and the formation of different soil types worldwide are introduced. At the end of the module the changes in climate in the past, current and future, proxies of climate change are included.

Module Content: 1 Introduction - Interactions between Earth's systems

- 2 Atmosphere - Structure, energy budget
- 3 Atmosphere - GHG effect, clouds
- 4 Atmosphere - General circulation and world climate
- 5 Atmosphere - Weather, fronts, storms
- 6 Hydrosphere - Water cycle
- 7 Hydrosphere - Precipitation
- 8 Hydrosphere - Evapotranspiration
- 9 Hydrosphere - Hillslope runoff
- 10 Hydrosphere - Catchments and rivers
- 11 Hydrosphere - Groundwater
- 12 Pedosphere - Soil formation
- 13 Pedosphere - Soil function and services
- 14 Pedosphere - Soil & Climate change
- 15 Biosphere - Photosynthesis
- 16 Biosphere - Vegetation zones
- 17 Biosphere - C cycle
- 18 Biosphere - N cycle
- 19 Biosphere - Biogeochemical cycles
- 20 Biosphere - Biogeography
- 21 Geosphere - Earth origin
- 22 Geosphere - Rock formation
- 23 Geosphere - Weathering
- 24 Geosphere - Erosion
- 25 Geosphere - Karst
- 26 Geosphere - Glacial
- 27 Geosphere - Coastal Environments
- 28 Climate change in the past
- 29 Climate proxies
- 30 Climate change present and future

Intended Learning Outcomes: By the end of the module you should be able to:

1. Explain the origin of the Earth, including rock formation, and give examples of specific landforms produced by Earth's surface processes
2. Describe and explain variations in topography, weathering and erosion across the Earth's surface
3. Explain the relationship between atmospheric chemistry, atmospheric circulation and world climate; Describe the evolution of common weather events
4. Describe the main features of the hydrological cycle, main hydrological processes, their controls and variation across the Earth's surface; explain the dynamics of sea ice and permafrost on global ocean dynamics and sea level fluctuations.
5. Explain how energy and nutrients flow through Earth's ecosystems.
6. Describe the interactions between reservoirs and fluxes in the primary biogeochemical cycles

Assessment: Online Class Test (20%)
Online Class Test (20%)
Exam - Multiple choice questions (60%)

Assessment Description: Two online tests completed in students' own time (2x20%)
Exam - online test with MCQ and short answer questions (60%).

Moderation approach to main assessment: Partial moderation

Assessment Feedback: Students will receive feedback on their online tests within 3 weeks after their submission.

Failure Redemption: Resit
Exam online test with MCQ and short answer questions

Reading List: Peter Smithson author, Kenneth Addison author; K Atkinson (Kenneth), 1940- author, Fundamentals of the physical environment / Peter Smithson, Ken Addison and Ken Atkinson., Routledge, 2008. ISBN: 041539516X
Joseph Holden Prof, author., An introduction to physical geography and the environment / Joseph Holden., Harlow : Pearson Education Limited, 2017. ISBN: 9781292083612
Joseph Holden 1975-, An introduction to physical geography and the environment / edited by Joseph Holden., Pearson, 2012. ISBN: 9780273740698

Additional Notes: Delivery of both teaching and assessment will be blended including live and self-directed activities online and on-campus.

Normally available to elective visiting or exchange students.

GEG133 Natural Hazards and Society

Credits: 20 Session: 2023/24 January-June

Pre-requisite Modules:

Co-requisite Modules:

Lecturer(s): Dr RH Meara, Prof MA Doel, Prof SH Doerr, Dr NJ Felstead, Dr J Hiemstra, Dr JR Jordan, Dr KJ Preece

Format: Online lecture content
10 x 2 hour synchronous sessions
20 hours enquiry-based field course
5 x 1 hour long disaster scenarios

Contact Hours will be delivered through a blend of live activities online and on-campus, and may include, for example, lectures, seminars, practical sessions and Academic Mentoring sessions.

Delivery Method: All Programmes will employ a live and self-directed on-campus activities each week. Students may also have the opportunity to engage with online versions of sessions delivered on-campus

On Campus

Module Aims: This module investigates hazardous aspects of Earth's natural environment and how society relates to them. Introductory principles include the definition of natural hazard, disaster, risk and loss, and approaches to reducing risk and managing disasters. Major types of natural hazard are studied in order to understand how they operate, where, and how frequently they are likely to occur. Hazardous consequences are explored, as well as how society can respond to hazardous events. Key aspects include discussion of primary and secondary hazards, prediction, forecasting and monitoring of hazards, and understanding how their harmful effects can be minimised.

Natural hazards considered during this module include volcanic eruptions, earthquakes, tsunamis, wildfires, landslides, extreme weather events, flooding, avalanches and Mega Hazards. Lecture material considers general principles as well as case studies. The module is compulsory for students taking BSc Environmental Geoscience.

Module Content: Introduction to hazards and disasters

Natural hazards - the processes and consequences of volcanic eruptions, earthquakes, tsunamis, wildfires, landslides, extreme weather events, flooding, avalanches and mega hazards

Thematic aspects - the geological record of catastrophic events as an indicator of their likely future occurrence;

monitoring hazards, global change and natural hazards; living with natural hazards.

Topics include:

Introduction to natural hazards and disasters

Volcanic hazards

Wildfires

Seismic hazards

Slope-related hazards

Megahazards

Hurricane hazards

Future environmental change & hazards

Flood hazards & hydrological hazards

Tsunamis

Risk society and resilience

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|---|--|
| <p>Intended Learning Outcomes: By the end of this module you should be able to:</p> <ul style="list-style-type: none"> • define natural hazards, disasters, losses and risk; • explain how natural processes can adversely affect people, their property and the environment; • explain the physical processes that cause volcanic eruptions, earthquakes, slope failures, tsunamis, avalanches, weather, flooding, megahazards and wildfires; • assess the evidence for and risk from high-magnitude-low-frequency events; • describe the distribution in space and time of catastrophic natural events; • show how the effects of hazardous events depend on actions taken by society before and during the events and explain the roles of mitigation, monitoring, forecasting and warning in reducing the risk from natural hazards; | |
| <p>Assessment:</p> | <p>Examination 1 (50%) Coursework 1 (10%) Coursework 2 (10%) Coursework 3 (30%)</p> |
| <p>Resit Assessment:</p> | <p>Examination (Resit instrument) (100%)</p> |
| <p>Assessment Description: Coursework 1 - Archive practical (10%) Coursework 2 - Volcanic hazard map (10%) Coursework 3 - Report based on disaster simulations (30%) Exam - Multiple Choice Exam (50%)</p> | |
| <p>Moderation approach to main assessment: Moderation by sampling of the cohort</p> | |
| <p>Assessment Feedback: Individual marks and feedback will be given for the archives exercise, hazard map exercise and write up of disaster scenario. Individual marks for examination answers.</p> | |
| <p>Failure Redemption: Resit examination</p> | |

Reading List: Fearnley, Carina J. editor.; Bird, Deanne K. editor.; Haynes, Katharine. editor.; McGuire, William J. editor.; Jolly, Gill. editor., *Observing the Volcano World Volcano Crisis Communication*, Springer International Publishing, 2018.ISBN: 3319440977

Smith, Keith, 1938-, *Environmental hazards : assessing risk and reducing disaster*, Routledge, 2013.ISBN: 9780415681063

Smith, Keith, 1938-, Petley, David N., *Environmental hazards : assessing risk and reducing disaster*, Routledge, 2009.ISBN: 9780415428651

Keith Smith 1938-, *Environmental hazards assessing risk and reducing disaster / Keith Smith.*, Routledge, 2013.ISBN: 0203805305

David Alexander (David E.), *Confronting catastrophe : new perspectives on natural disasters / David Alexander.*, Terra, 2000.ISBN: 9781903544013

Bill McGuire 1954-, Ian Mason (Ian M.); Christopher R. J Kilburn, *Natural hazards and environmental change / Bill McGuire, Ian Mason, Christopher Kilburn.*, Arnold, 2002.ISBN: 0340742208

Edward A. Keller 1942- author., Duane E DeVecchio (Duane Edward), 1970- author., *Natural hazards : earth's processes as hazards, disasters, and catastrophes / Edward A. Keller and Duane E. DeVecchio ; with assistance from Robert H. Blodgett.*, New York : Routledge, 2019.ISBN: 9781138058415

Haraldur Sigurdsson editor., *The encyclopedia of volcanoes / editor-in-Chief Haraldur Sigurdsson [and four others].*, London, England : Academic Press, 2015.ISBN: 0123859395

Fearnley et al (eds), *Observing the Volcano World*, Springer.

Guimarães Nobre, Gabriela ; Muis, Sanne ; Veldkamp, Ted I.E ; Ward, Philip J, *Achieving the reduction of disaster risk by better predicting impacts of El Niño and La Niña*, Elsevier, 2019-07.ISBN: 25900617

John Abraham, *Global warming is intensifying El Niño weather.*

Fasullo, J. T ; OttoBliesner, B. L ; Stevenson, S, *ENSO's Changing Influence on Temperature, Precipitation, and Wildfire in a Warming Climate*, American Geophysical Union (AGU), 2018-09-16.ISBN: 00948276

Cattiaux, J ; Vautard, R ; Cassou, C ; Yiou, P ; Masson-Delmotte, V ; Codron, F, *Winter 2010 in Europe: A cold extreme in a warming climate: COLD WINTER 2010 IN EUROPE*, 2010-10.ISBN: 00948276

Scaife, A. A ; Arribas, A ; Blockley, E ; Brookshaw, A ; Clark, R. T ; Dunstone, N ; Eade, R ; Fereday, D ; Folland, C. K ; Gordon, M ; Hermanson, L ; Knight, J. R ; Lea, D. J ; MacLachlan, C ; Maidens, A ; Martin, M ; Peterson, A. K ; Smith, D ; Vellinga, M ; Wallace, E ; Waters, J ; Williams, A, *Skillful longrange prediction of European and North American winters*, 2014-04-16.ISBN: 00948276

Met Office, *North Atlantic Oscillation.*

Caesar, L ; McCarthy, G. D ; Thornalley, D. J. R ; Cahill, N ; Rahmstorf, S, *Current Atlantic Meridional Overturning Circulation weakest in last millennium*, 2021-02-25.ISBN: 17520894

Stott, Peter A ; Christidis, Nikolaos ; Otto, Friederike E. L ; Sun, Ying ; Vanderlinden, JeanPaul ; van Oldenborgh, Geert Jan ; Vautard, Robert ; von Storch, Hans ; Walton, Peter ; Yiou, Pascal ; Zwiers, Francis W, *Attribution of extreme weather and climaterelated events*, John Wiley & Sons, Inc, 2016-01.ISBN: 17577780

IPCC, *Climate Change 2014 Impacts Adaptation and Vulnerability.*

IPCC, *Global Warming of 1.5 deg C.*

Stimpson, Ian, *Japan's Tohoku Earthquake and Tsunami*, Blackwell Publishing Ltd, 2011-05.ISBN: 02666979

Lacassin, Robin ; Lavelle, Sylvain, *The crisis of a paradigm. A methodological interpretation of Tohoku and Fukushima catastrophe*, Elsevier B.V, 2016-04.ISBN: 00128252

Jose C. Borrero, *Field Data and Satellite Imagery of Tsunami Effects in Banda Aceh*, American Association for the Advancement of Science, 2005-06-10.ISBN: 00368075

Gaillard, Jean-Christophe ; Clavé, Elsa ; Vibert, Océane ; Azhari ; Dedi ; Denain, Jean-Charles ; Efendi, Yusuf ; Grancher, Delphine ; Liamzon, Catherine C ; Sari, Desy Rosnita ; Setiawan, Ryo, *Ethnic groups' response to the 26 December 2004 earthquake and tsunami in Aceh, Indonesia*, Springer Netherlands, 2008-10.ISBN: 0921030X

Lauterjung, J ; Münch, U ; Rudloff, A, *The challenge of installing a tsunami early warning system in the vicinity of the Sunda Arc, Indonesia*, Copernicus GmbH, 2010-04-06.ISBN: 16849981

Waltham, Tony, *The Asian Tsunami disaster, December 2004*, Blackwell Publishing Ltd, 2005-01.ISBN: 02666979

Bondevik, Stein, *Earth science The sands of tsunami time*, 2008-10-30.ISBN: 00280836

Chagué-Goff, Catherine ; Schneider, Jean-Luc ; Goff, James R ; Dominey-Howes, Dale ; Strotz, Luke, *Expanding the proxy toolkit to help identify past events — Lessons from the 2004 Indian Ocean Tsunami and the 2009 South Pacific Tsunami*, Elsevier B.V, 2011-07.ISBN: 00128252

Costa, Pedro J.M ; Dawson, Sue ; Ramalho, Ricardo S ; Engel, Max ; Dourado, Francisco ; Bosnic, Ivana ;

Andrade, César, A review on onshore tsunami deposits along the Atlantic coasts, Elsevier B.V, 2021-01.ISBN: 00128252

Bondevik, Stein ; Løvholt, Finn ; Harbitz, Carl ; Mangerud, Jan ; Dawson, Alastair ; Inge Svendsen, John, The Storegga Slide tsunami—comparing field observations with numerical simulations, Elsevier Ltd, 2005.ISBN: 02648172

JANKAEW, Kruawun ; ATWATER, Brian F ; SAWAI, Yuki ; CHOOWONG, Montri ; CHAROENTITIRAT, Thasinee ; MARTIN, Maria E ; PRENDERGAST, Amy, Medieval forewarning of the 2004 Indian Ocean tsunami in Thailand, Nature Publishing Group, 2008.ISBN: 00280836

Dall'Osso, F ; Dominey-Howes, D, Public assessment of the usefulness of "draft" tsunami evacuation maps from Sydney, Australia – implications for the establishment of formal evacuation plans, Copernicus GmbH, 2010-08-25.ISBN: 16849981

Additional Notes: This module is compulsory for students enrolled for the BSc Environmental Geoscience degree scheme.

This module is not available to visiting or exchange students.

GEG135 Sustainability and the Climate Emergency

Credits: 20 Session: 2023/24 September-January

Pre-requisite Modules:

Co-requisite Modules:

Lecturer(s): Dr KH Halfacree, Dr KJ Ficken, Prof PRJ North, Dr AM Singleton

Format: 36 contact hours - on-campus lectures.

Delivery Method: All Programmes will employ a blended approach to delivery using the Canvas Digital Learning Platform for live and self-directed online activity, with live and self-directed on-campus activities each week. Students may also have the opportunity to engage with online versions of sessions delivered on-campus

On Campus

Module Aims: This module is an introduction to global environmental change and explores aspects of the issue of sustainability as it affects everyday lives. The challenge of sustainability is significant and the lectures will provide you with the information needed to engage with the UN's Sustainable Development Goals.

Module Content: Introducing GEG135: Human-Earth Interaction

Challenging Sustainability

A Climate Emergency?

Civilisations & Climate

Introduction to Coursework 1

Satellite Monitoring of Environmental Change

Climate Change - Evidence from Recent Data

Politics of Climate Change

Climate Diplomacy, Sustainable Development & the UNSDGs

Environmental Degradation

Forests & Deforestation

Tropical Deforestation & Impacts

Forest Management & Sustainability

Introduction & the Land Question in Scotland

Land Rights in Brazil

The Chiapas Rebellion & the Land Question in Mexico

Introduction to Deserts & Drylands

Theories & Evidence for Desertification

Dryland Ecology, Management & Sustainability

Challenges in the Urban Environment

Poverty & Poor Development

Housing Problems

Urban Design for Sustainable Living

Towards Urban Neighbourhood Communities

Sustainably Transporting an Automobile Society

An Introduction to the Cryosphere

The Cryosphere: Snow, Permafrost & Sea Ice

The Cryosphere: Glaciers, Ice Caps, Ice Sheets & Ice Shelves

Sea Level Change

Geomorphology in a Warmer World

The Little Ice Age

Towards the Sustainable University

Conclusion & Exam Information'

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| Intended Learning Outcomes: By the end of this module you should be able to: | |
| <ol style="list-style-type: none"> 1. Understand key concepts of global environmental change. 2. Analyse the relative importance of human and physical factors in causing environmental change. 3. Recognise that 'sustainability' has cultural, economic, social, political and physical dimensions. 4. Evaluate aspects of 'sustainability' within a range of geographical contexts. 5. Describe recent methods to monitor and model global environmental change. 6. Critically review the evidence of the consequences of global environmental change and the challenge facing sustainable development. | |
| Assessment: | Coursework 1 (30%) Examination 1 (40%) Coursework 2 (30%) |
| Assessment Description: | Blog 500 words Multiple choice examination Critique of ChatGPT output |
| Moderation approach to main assessment: | Partial moderation |
| Assessment Feedback: | Students will receive individual and overall online feedback for coursework. Students will receive overall examination feedback |
| Failure Redemption: | Resit examination and/or resubmit coursework |

Reading List: Introducing Human Geographies, Arnold, 2005.ISBN: 9780340882764

Daniels, P., Bradshaw, M., Shaw, D., Sidaway, J. & Hall, T (eds.), An Introduction to Human Geography, Pearson Education Limited, 2016.ISBN: 9781292082950

Frente Nacional Anti-Minero, We are of the Earth - a manifesto, Verso, 2022.

Goudie, Andrew., The nature of the environment, Blackwell Publishers, 2001.ISBN: 9781444312348

Malm, A., How to Blow Up a Pipeline: Learning to Fight in a World on Fire, Verso, 2021.ISBN: 1839760257

Potter, R., Geographies of Development: an Introduction to Development Studies, Routledge, 2018.ISBN: 9781138794290

Smithson, P., Addison, K. & Atkinson, K., Fundamentals of the Physical Environment, Routledge, 2008.ISBN: 041539516X

Whitehead, Mark, 1975-, Spaces of sustainability, Routledge, 2006.ISBN: 1134246374

Chatterton, Paul, 1972- author., Unlocking sustainable cities : a manifesto for real change, Pluto Press, 2019 - 2019.ISBN: 9781786803634

Introducing Human Geographies, Routledge, 2014.ISBN: 9780203529225

Hicks, D., Why we still need a geography of hope, Taylor & Francis Ltd, 2018.ISBN: 00167487

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Westlake, S., Climate change: yes, your individual action does make a difference, April 11th, 2019.

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Paul J Cloke; Phil Crang 1964-; Mark Goodwin (Mark A.), Introducing human geographies / edited by Paul Cloke, Philip Crang and Mark Goodwin., Routledge, 2014.ISBN: 9780203529225

Paul J Cloke; Phil Crang 1964-; Mark Goodwin (Mark A.), Introducing human geographies / edited by Paul Cloke, Philip Crang and Mark Goodwin., Routledge, 2014.ISBN: 9780203529225

Paul J Cloke; Phil Crang 1964-; Mark Goodwin (Mark A.), Introducing human geographies / edited by Paul Cloke, Philip Crang and Mark Goodwin., Routledge, 2014.ISBN: 9780203529225

Rocheleau, Dianne E, Political ecology in the key of policy: From chains of explanation to webs of relation, Elsevier BV, 2008.ISBN: 00167185

Blaikie, Piers, Explanation and policy in land degradation and rehabilitation for developing countries, John Wiley & Sons, Ltd, 1989-07.ISBN: 10853278

Martinez-Alier, Joan, The environmentalism of the poor, Elsevier Ltd, 2014-07.ISBN: 00167185

Pigott, A., Imagining socioecological transformation: An analysis of the Welsh Government's policy innovations and orientations to the future, BioOne, 2018.ISBN: 23251026

Kristian S. Nielsen, Cameron Brick, Wilhelm Hofmann, Tina Joanes, Florian Lange & Wencke Gwozdz, The motivation–impact gap in pro-environmental clothing consumption.

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Martinez-Alier, J., The environmentalism of the poor, Elsevier BV, 2014.ISBN: 00167185

Williams, J., The environmentalism of the poor, 2014.

Combe, M., Land reform in Scotland: what lies ahead, 2016.

Balfour, V., Accessing land for sustainable farming, 2016.

Community Land Scotland, Homepage.

Mackenzie, F., A working land: crofting communities, place and the politics of the possible in post-Land Reform Scotland, Blackwell Publishing, 2006.ISBN: 00202754

MST - Landless Movement of Rural Workers of Brazil, MST - Landless Movement of Rural Workers of Brazil.

Dolce, J., Popular Agrarian Reform and the Struggle for Land in Brazil, 2020.

Hammond, J. & Rossi, F., Landless Workers Movement (MST) Brazil.

Hoffmann, E. & Fox, M., Food Sovereignty, One Occupation at a Time, Taylor & Francis Ltd, 2017.ISBN: 10714839

Kingsnorth, P., One No, Many Yeses: a Journey to the Heart of the Global Resistance Movement, Free Press, 2003.ISBN: 0743220269

Vergara-Camus, L., The MST and the EZLN Struggle for Land: New Forms of Peasant Rebellions, Blackwell Publishing Ltd, 2009.ISBN: 14710358

Kingsnorth, P., One No, Many Yeses: a Journey to the Heart of the Global Resistance Movement, Free Press, 2003.ISBN: 0743220269

Kingsnorth, P., Opening a crack in history, The Resurgence Trust, 2003.ISBN: 02613131

Carlsen, L., Zapatistas at twenty, 2014.

Contreras, K., Pérez, R., Pickard, M., Rivera, A. & Zunino, M., Sustainable rural cities, dispossession and counterinsurgency in Chiapas, 2015.

Rosset, P. & Cunningham, S., Understanding the Chiapas revolt in Mexico.

Vidal, J., Mexico's Zapatista rebels, 24 years on and defiant in mountain strongholds, 2018.

Klein, H., A spark of hope: the ongoing lessons of the Zapatista Revolution 25 years on, NACLA January 18th 2019.

Cloke, Paul J.; Crang, Phil, 1964-; Goodwin, Mark (Mark A.), *Introducing human geographies*, Routledge, 2014. ISBN: 9780203529225

Potter, Robert B., author., *Geographies of development : an introduction to development studies*, Routledge, 2018 - 2018. ISBN: 9781138794290

Pacione, M, *Models of Urban Land Use Structure in Cities of the Developed World*, Geographical Association, 2001-04-01. ISBN: 00167487

Drakakis-Smith, D. W., author., *Drakakis-Smith, D. W., Third world cities*, Routledge, 2000. ISBN: 1134639074

Birkbeck, Chris, *Self-employed Proletarians in an informal factory: The case of Cali's garbage dump*, Elsevier Ltd, 1978. ISBN: 0305750X

Lehmann, S., Zaman, A., Devlin, J. & Holyoak, N., *Supporting urban planning of low-carbon precincts: Integrated demand forecasting*, MDPI, 2013. ISBN: 20711050

Wackernagel, M., Onisto, L., Bello, P., Callejas Linares, A., Susana López Falfán, I., Méndez Garca, J., Isabel Suárez Guerrero, A. & Guadalupe Suárez Guerrero, M., *National natural capital accounting with the ecological footprint concept*, Elsevier B.V, 1999. ISBN: 09218009

Girardet, Herbert., *Surviving the century: facing climate chaos and other global challenges*, Earthscan, 2007. ISBN: 113655615X

Haughton, G., *Environmental Justice and the Sustainable City*, Sage Publications, 1999. ISBN: 0739456X

Mouratidis, K., *Is compact city livable? The impact of compact versus sprawled neighbourhoods on neighbourhood satisfaction*, SAGE Publications, 2018. ISBN: 00420980

Mouratidis, K., *Compact city, urban sprawl, and subjective well-being*, Elsevier Ltd, 2019. ISBN: 02642751

Naess, P., *Urban Planning and Sustainable Development*, Taylor & Francis Group, 2001. ISBN: 09654313

Newman, P. & Jennings, I., *Cities as sustainable ecosystems : principles and practices*, Island Press, 2008. ISBN: 9781597261883

Dempsey, N., Bramley, G., Power, S. & Brown, C., *The social dimension of sustainable development: defining urban social sustainability*, John Wiley & Sons, Ltd, 2011. ISBN: 09680802

Greening of Detroit.

Mok, H., Williamson, V., Grove, J., Burry, K., Barker, S. & Hamilton, A., *Strawberry fields forever? Urban agriculture in developed countries: a review*, Springer Paris, 2014. ISBN: 17740746

BBC, *Thames Gateway: explained*, 2014.

Guardian, *Q&A: communities plan*, 2003.

Jarvis, H., *Saving space, sharing time: integrated infrastructures of daily life in cohousing*, SAGE Publications, 2011. ISBN: 0308518X

Bradshaw, C., *How one family kicked the car habit*, 1999.

Gill, T., *World through a windscreen?*, 2011.

Gosling, S., *Urban transport transitions: Copenhagen, city of cyclists*, ELSEVIER SCI LTD, 2013. ISBN: 09666923

Living Streets.

LSE Cities, *Towards New Urban Mobility. The case of London & Berlin*, 2015.

Newman, P. & Jennings, I., *Cities as Sustainable Ecosystems: Principles & Practices*, Island Press, 2008. ISBN: 9781597261883

Urry, J., *Sociology Beyond Societies: Mobilities for the 21st Century*, Routledge, 2000. ISBN: 9786610354269

Sustrans School Streets.

Porritt, J., *Universities must lead the way on the sustainability agenda*, 2012.

Castree, N., *'Out there'? 'In here'? Domesticating critical geography*, Blackwell Publishing Ltd, 1999. ISBN: 00040894

Lozano, R., Lukman, R., Lozano, F., Huisingh, D. & Lambrechts, W., *Declarations for sustainability in higher education: becoming better leaders, through addressing the university system*, Elsevier Ltd, 2013. ISBN: 09596526

Nordling, L., *Virtuous reality*, 2005.

Shi, H. & Lai, E., *An alternative university sustainability rating framework with a structured criteria tree*, Elsevier Ltd, 2013. ISBN: 09596526

Tatum, M., *'We deserve to be taught about it': why students want climate crisis classes*, 2020.

Welsh Government, *Wales & the Sustainable Development Goals*, Welsh Government, 2019.

Additional Notes: Delivery of both teaching and assessment will be blended including live and self-directed activities online and on-campus.

Normally available to elective visiting or exchange students. There are no pre- or co-requisites for this module.

GEG140P Project and Methods (Physical Geography)

Credits: 20 Session: 2023/24 January-June

Pre-requisite Modules:

Co-requisite Modules:

Lecturer(s): Prof T Murray, Dr JAB Rosette, Dr RG Smith

Format: 23 hrs of either a human geography or physical geography project and 11 hrs environmental survey and modelling project work for all students

Delivery Method: Lectures, Practicals (on campus) and Fieldwork (local, Gower, Swansea City Centre)

Module Aims: This module involves training in fieldwork and GIS skills for both human and physical geographers. In part 1, students can choose from a physical or human geography project option:

Part 1: Physical Geography

In the physical geography component we will look at sea-level change and its impacts on communities and ecosystems. During classroom sessions we will consider the causes of sea-level change and how it is measured. We use the technique of Stakeholder Analysis to look at the economic and social impacts of sea-level change in different regions. We will then undergo local visits to explore the potential impacts of sea level to our locality and on our coastal university. We'll look at both urban and rural environments and different mitigation policies that may be used.

Part 1: Human Geography

The human geography project focusses on Cities and Photography. Students will investigate the use of photography through three Visual Methodologies: Photo-Documentation, Photo-Elicitation, and Photo-Essays. Students will take part in a photo documentation workshop and group photography fieldwork in Swansea City Centre. They will also complete a photo essay aided by group discussion to select concept, theme, whether analytical or evocative photographs (or both), and discussion of the links between practice and visual methodologies literature.

Part 2: Field data collection and critical analysis skills.

During part 2 of this module, students will expand on the knowledge gained previously. This will combine investigations of our world in three dimensions, for which students will use photographs captured themselves to construct a 3D model. Students will learn about and apply other 3D analysis techniques to estimate environmental parameters that they will compare with their field data. They will also contribute to a citizen science initiative using a mobile app for coastal transition zones at risk from sea level change at our University campuses. Using these data collected and analysed during the semester, students will gain insight into sources of uncertainty among datasets, enabling them to critically examine the concept of ground 'truth'.

Module Content: 1) Physical Geography Project

Introduction lecture
Gower Fieldtrips
PC practical workshops

2) Human Geography Project

Lectures

Cities and Photography

Making Photographs as a part of a research project: Three Visual Methodologies: Photo-Documentation, Photo-Elicitation, and Photo-Essays

Photo Documentation Workshop 1

Photo Documentation of the Built Environment

Urban Decline, Decay, Ruins, Regeneration

Development of Swansea City Centre Shooting Script

Group Photography Fieldwork in Swansea City Centre

Photo Documentation Workshop 2

Group Discussion/Image Selection/Narrative Writing Ideas/Link to Literature

Photo Essay Workshop 1

Urban Photo Essay

Group Discussion to select concept, theme, whether analytical or evocative photographs (or both), etc.
Understanding of links to literature.

3) Field data collection and critical data analysis

Field data collection

Lecture and PC practical: analysing the world in 3D

Lecture and PC Practical: data uncertainty

Intended Learning Outcomes: By the end of this module, students will have demonstrated the ability to:

- Collect, manipulate, analyse and present geographical data;
- Demonstrate competence in fundamental techniques that are used in the field for description, measurement and

inference in Quaternary studies OR visual analysis of photography in human geography;

- Show key skills in Mapping, Spatial Data and environmental surveys
- Discuss how maps and spatial analysis can help us to understand and monitor our world.

Assessment: Coursework 1 (50%)
Exam - Multiple choice questions (50%)

Assessment Description: 1 x fieldwork report or photo documentation task / photo essay (50%)
1 x canvas quiz exam (50%)

Moderation approach to main assessment: Moderation by sampling of the cohort

Assessment Feedback: Students will be able to view the results of their MCQ exam after the exam period, where the correct answer will be identified.

Failure Redemption: Resit all failed elements

Additional Notes: Delivery of both teaching and assessment will be blended including live and self-directed activities online and on-campus.

GEL121 Introduction to Geology

Credits: 20 Session: 2023/24 January-June

Pre-requisite Modules:

Co-requisite Modules:

Lecturer(s): Dr KJ Ficken, Dr KJ Preece

Format: 18 hours lectures; 15 hours practical classes; 9 hours fieldwork teaching
Contact hours will be delivered through on campus lectures, practical sessions, field sessions and academic mentoring sessions

Delivery Method: All Programmes will employ a blended approach to delivery using the Canvas Digital Learning Platform for live and self-directed online activity, with live and self-directed on-campus activities each week. Students may also have the opportunity to engage with online versions of sessions delivered on-campus

18 x 1-hour lecture sessions

1 x revision sessions

5 x 3-hour practical sessions

2 x afternoon field classes

Module Aims: Geology is the study of the composition and history of planet Earth and the processes that operate within the planet and on its surface. This module provides an overview of geology, with a strong emphasis on practical and fieldwork. By the end of the module you will be able to identify minerals and rocks, and know how to interpret them to understand the behaviour of volcanoes and earthquakes, and the formation of mountain belts. Teaching through lectures is supplemented by regular practical classes and five half-day field classes. Taking this module alongside Year One Geography modules will complete your credit requirements at Year One. The module is recommended if you have an interest in physical geography, although it is accessible to all students. No previous experience of geology is needed.

Module Content: Introduction to geology;
Minerals, their properties and identification;
Plate tectonics as the foundation of geology;
Igneous rocks and their significance;
Metamorphic rocks and their origins;
Sedimentary rocks and past environments;
Deformation
Revision;
2 Field classes
3 Multiple choice tests
Class-test: practical questions;
Final exam: essay questions.

Intended Learning Outcomes: By the end of this module students should be able to:

- demonstrate awareness of geological time and the distinction between relative and absolute dating.
- relate major features of the Earth's land surfaces and ocean floors, and aspects of tectonic activity experienced at the Earth's surface, to the major processes of plate tectonics.
- distinguish between minerals, rocks and fossils, and between igneous, sedimentary and metamorphic rocks.
- relate the physical properties of minerals to their internal structure.
- classify igneous rocks and relate different types of igneous rocks to specific types of igneous activity.
- identify the main types of metamorphic rocks and explain how they form.
- use evidence from sedimentary rocks to interpret past environmental conditions on the Earth's surface.
- understand how layered rocks become deformed and the types of structures that result.
- understand the significance and main subdivisions of geophysics.
- draw up orderly, illustrated field notes, sketch maps and graphic logs based on careful observations of relevant data and interpret field relationships between groups of rocks.
- draw a simple geological map from field evidence and interpret a geological map in terms of sub-surface structure.

Assessment: In class test (Invigilated on campus) (30%)
Coursework 1 (30%)
Examination 1 (40%)

Assessment Description: IT1E In-class test 30%
001 Coursework 30% - includes 3x on-line quizzes (5% each) and field class (15%)
002 Blind exam in exam period 40% - summer exam period

Moderation approach to main assessment: Partial moderation

Assessment Feedback: Written comments and generic feedback on field notes.

Oral feedback on in-class test in April

Examination of June scripts in tutorials at start of Level 2.

Failure Redemption: Supplementary examinations (one written) for 100% that is exam-based.

Field classes cannot be redeemed.

Reading List: Grotzinger, John P., author., Jordan, Thomas H. (Thomas Hilman), 1948- author., Understanding Earth, Macmillan Learning, 2020.ISBN: 1319325424
Marshak, Stephen, 1955- author., Earth : portrait of a planet, W.W. Norton & Company, Inc., 2019.ISBN: 9780393617511
Stephen Marshak 1955- author., Earth : portrait of a planet / Stephen Marshak., New York : W.W. Norton & Company, 2015.ISBN: 9780393937503
Marshak, Stephen, 1955-, Earth : portrait of a planet, W. W. Norton, 2012.ISBN: 9780393935189
Coe, Angela L., Geological field techniques / edited by Angela L. Coe ; authors, Angela L. Coe ... [et al.], Wiley-Blackwell ;, 2010.ISBN: 9781444330625

Additional Notes: Delivery of both teaching and assessment will be on-campus.

Available to visiting and exchange students and as an optional module for students from other disciplines. Students must be available for all examinations.