



**Swansea University**  
**Prifysgol Abertawe**

**FACULTY OF SCIENCE AND  
ENGINEERING**

**UNDERGRADUATE STUDENT  
HANDBOOK**

**YEAR 3 (FHEQ LEVEL 6)**

**BSC ENVIRONMENTAL GEOSCIENCE  
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**



<b>Faculty of Science and Engineering</b>	
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
<b>School of Biosciences, Geography and Physics</b>	
Head of School	TBC
School Education Lead	Dr Wendy Harris and Dr Sarah Roberts
Head of Geography	Dr Kevin Rees
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](mailto: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 3 (FHEQ Level 6) 2023/24**  
**Environmental Geoscience**  
 BSc Environmental Geoscience[FF86]  
 BSc Environmental Geoscience with a Year Abroad[F768]  
 BSc Environmental Geoscience with a Year in Industry[F769]

**Total 120 Credits**

**Optional Modules**

Choose exactly 10 credits

<b>GEC332</b>	Cefnogaeth Traethawd Hir	Prof NJ Loader/Dr AL Pigott/Mr GR Whittaker/..	TB1+2	10
<b>GEG332</b>	Dissertation Support: Geography	Dr AL Pigott	TB1+2	10

**And**

Choose exactly 30 credits

<b>GEC331</b>	Traethawd Estynedig Daearyddiaeth	Prof NJ Loader/Dr OH Elias/Dr RH Meara/..	TB1+2	30
<b>GEG331</b>	Dissertation Report: Geography	Dr AL Pigott	TB1+2	30

**And**

Choose exactly 80 credits

Volcanology GEG363 - cap of 40 students on this scheme. Geoscience and Physical Geography students have priority.

Please note that BIO351 and BIO352 must be taken as co-requisites. They are not available as a singular module.

GEC333 is the welsh equivalent of GEG333

<b>BIO351</b>	Science Communication	Dr WE Harris/Dr RH Meara/Dr SG Roberts/..	TB2	10
<b>BIO352</b>	Science Communication (BIO351) Placement	Dr RH Meara/Dr WE Harris/Dr SG Roberts/..	TB2	10
<b>GEB301</b>	Interdisciplinary Field Course to the Indian Himalayas (Sikkim)	Prof LJ Roberts/Dr KJ Ficken/Prof G Proffitt/..	TB1	20
<b>GEC333</b>	Ffiniau Ymchwil Daearyddol	Dr CJT Ladd	TB2	20
<b>GEG333</b>	Geographical Research Frontiers	Dr CJT Ladd	TB2	20
<b>GEG337</b>	Wildfires	Prof SH Doerr	TB1	20
<b>GEG344</b>	The Cryosphere in a Changing Climate	Prof T Murray/Dr J Hiemstra/Prof B Kulesa/..	TB1	20
<b>GEG358</b>	Measuring Climate Change	Dr I Robertson/Prof MH Gagen	TB2	20
<b>GEG363</b>	Volcanology	Dr KJ Preece/Dr PG Albert	TB2	20



# BIO351 Science Communication

**Credits: 10 Session: 2023/24 January-June**

**Pre-requisite Modules:**

**Co-requisite Modules:**

**Lecturer(s):** Dr WE Harris, Dr RH Meara, Dr SG Roberts

**Format:** 10 weeks of 2 hour workshops (20 hours)

**Delivery Method:** In person lectures and workshops, including input from guest lecturers with special expertise.

**Module Aims:** Science communication is a key skill for scientists. Developing these skills allows students to really digest complicated, often abstract theories ideas and find ways to successfully presenting them to non experts. This improves student's own understanding as well as equipping them for the much wider world of science and business. Students will learn how to communicate complex science concepts to different audiences using a variety of techniques. Each session of the course will focus onto different modes of communication and will include theoretical and practical components.

**Module Content:** Week 1: Introduction

Week 2: Why is science communication important?

Written Communication

Week 3: Science papers, posters and press releases

Week 4: Communicating data

Spoken Communication

Week 5: Oral presentation and teaching

Week 6: Radio presentation and podcasts

Week 7: TV and social media

Week 8: Miscommunication

Week 9: Accessible communication

Week 10: Presentations

**Intended Learning Outcomes:** LO1. Identify the different ways that science can be communicated to a range of audiences

LO2. Define science communication theory and the rationale for using different communication methods

LO3. Communicate complex ideas via printed, audible and visual media

LO4. Communicate complex concepts to a wide range of audiences

LO5. Design and create engaging resources to disseminate information on a given topic

LO6. Evaluate and select appropriate methods for communicating data

LO7. Consider the sources and impacts of miscommunication

LO8. Evaluate and improve communication to increase accessibility

**Assessment:** Coursework 1 (30%)

Coursework 2 (30%)

Coursework 3 (40%)

**Assessment Description:** Assessment:

Coursework 1. Create an oral presentation or interactive teaching material on a topic of your choice.

Coursework 2. Create a blog and summarise relevant data as an infographic.

Coursework 3. Create a podcast or radio show as a group.

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

**Assessment Feedback:** Students will receive individual written summative feedback on all coursework components and will receive regular formative feedback on work completed during workshops

**Failure Redemption:** Alternative coursework in line with module outcomes would be provided

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

Available to visiting or exchange students.

# BIO352 Science Communication (BIO351) Placement

**Credits: 10 Session: 2023/24 January-June**

**Pre-requisite Modules:**

**Co-requisite Modules:** BIO351

**Lecturer(s):** Dr RH Meara, Dr WE Harris, Dr SG Roberts

**Format:** 20 hours  
3 x 1 hour lecture

**Delivery Method:** Introductory in-person lecture providing background information, assessment details and module overview.

Self-directed work placement to be arranged with lecturing team. Students will be supported in finding and securing a suitable placement.

An interim in-person workshop will evaluate progress and address any issues that may arise during the placement. This two-hour workshop will include a student presentation on their placement progress, skills gained, contributions made and any challenges encountered.

A final lecture will cap the placement module, allowing students to share their experience and introducing the final assessment report.

This module is also available in Welsh.

**Module Aims:** Partnered with BIO351 Science Communication module, this placement-based module allows students to undertake a communications-based placement to gain real-world experience of scientific communication.

**Module Content:** Introductory module briefing

Minimum of 2 x 30-minute supervision meetings with your academic and/or work-placement supervisor at mutually convenient times during the teaching block.

Oral presentation of placement progress (March)

The Work Placement project is initiated and designed by the student in collaboration with an outside organization and an academic supervisor. It is the student's responsibility to negotiate and secure an appropriate work placement and a work-placement supervisor. Academic staff will provide guidance, and, wherever possible, contacts.

The placement should complement the degree scheme being studied, and the programme of work must seek to enhance the set of subject-specific and transferable skills that the student has already acquired.

Students must inform the module coordinator of the precise details of their work placement (including the name and contact details of an appropriate work-placement supervisor) by the end of teaching week 2 in TB2. It is encouraged that placements are planned during TB1. Zoom meetings will be arranged to support this. By the end of week 2 in TB2, any diversions from this rule will be dealt with on a case by case basis.

**Intended Learning Outcomes:** During this module, students will:

LO1) Demonstrate an appreciation of the working environment in the context of their chosen field of study.

LO2) Apply their subject-specific knowledge to specific industrial activities or projects, individually and/or in teams.

LO3) Improve communication skills through a range of activities and variety of audiences

LO4) Develop an appreciation of ethical consideration, equality and diversity, representation, language, and health and safety in the workplace

**Assessment:** Coursework 1 (50%)  
Coursework 2 (50%)

**Assessment Description:** Coursework 1 - Placement update oral presentation

Coursework 2 - Final report - placement overview, location background, skills practiced and attained, timeline and executive summary.

<b>Moderation approach to main assessment:</b> Moderation by sampling of the cohort
<b>Assessment Feedback:</b> Written personal summative feedback via Canvas In person formative oral feedback
<b>Failure Redemption:</b> Arrangement of placement ensure continuous feedback and monitoring of progress, however, where required resubmission of assessments is possible and continuation of placement may be available in summer if needed.
<b>Additional Notes:</b> This module must be taken in conjunction with BIO351 Science Communication and is compulsory for Geography students taking BIO351

# GEB301 Interdisciplinary Field Course to the Indian Himalayas (Sikkim)

**Credits: 20 Session: 2023/24 September-January**

**Pre-requisite Modules:**

**Co-requisite Modules:**

**Lecturer(s):** Prof LJ Roberts, Dr KJ Ficken, Prof G Proffitt, Prof SV Shubin

**Format:** 92 hours contact in the field, 8 hours lectures/group meetings in advance of field trip and whilst in Sikkim

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.

Field course and preparatory lectures and group meetings.

**Module Aims:** This residential field course module explores the relationship between environment and society in the Himalayan state of Sikkim in NE India on the borders with China, Nepal, Tibet and West Bengal. The course is inter-disciplinary in approach and policy-oriented. Students work with members of University Staff in mixed groups of biologists, human geographers, physical geographers and zoologists. Through intensive inter-disciplinary group working, students utilise (and pass on) their specialist skills in the group exercises and projects that are undertaken.

**Module Content:** Teaching and learning will be centred on the two-week field-course to Sikkim, and supplemented by lectures and further study in Swansea before and after the field-course. Much of the learning will be undertaken in groups but, apart from where stated, the assessment will be your individual work.

Preparatory lectures will be delivered in Swansea before the field course:

The climate and Geography of Sikkim

The Biodiversity of Sikkim

Sikkim's Society

Biogeography of Sikkim

Agrobiodiversity / Organic Farming in Sikkim

Hydroelectricity

Religious identity in Sikkim

Workshops:

Developing your research questions

Planning your research

Assessment overview

Field trips when in Sikkim

Temi Tea Plantation

Old and New Rumtek Monastery

Tsomgo lake

Fambong Lah hike

Hydroelectric Dams and Power Stations

Agricultural developments

Lal Bazaar

Dzongu region

**Intended Learning Outcomes:** On completion of the module, students should be able to do most of the following:

- Explain anthropogenic effects on the environment, the complex interplay of physical factors (e.g. mountains, rivers and lakes), social factors (e.g. politics, migration, religion, education and commerce) and biological factors (e.g. agriculture and plant/animal interactions) in many of the issues applicable to the region and be capable of looking at complex issues in diverse ways
- Evaluate, where appropriate, the relevance of environmental concepts and theories to local case studies
- Identify the key issues facing developing countries such as Sikkim, assess the effectiveness of policy responses, and be able engage with political and policy debates about the future of the region (and other regions experiencing similar environmental, physical, social and economic challenges) particularly in relation to the growth of eco-tourism as a strategy for future development and conservation of resources
- Use varied field techniques for studying the designated field area and the relationship between the environment and society in Sikkim
- Understand and apply the benefits of inter-disciplinarity for better understanding the complex relationships between human/social, physical and biological features of any given location.

**Assessment:** Coursework 1 (20%)  
Coursework 2 (30%)  
Coursework 3 (30%)  
Coursework 4 (20%)

**Assessment Description:** 1 [20%] Presentations

2 [30%] Fieldwork notebook

3 [30%] Individual project report 3,000 words

4 [20%] Interdisciplinary Government POSTNote policy bulletin on group project (4000 words)

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

**Assessment Feedback:** Continual assessment feedback is given in writing on standard departmental feedback forms and electronically via Canvas. Students will receive formative feedback on their field note books and presentations during the field course

**Failure Redemption:** Resubmit failed continual assessment.

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

A maximum of 20 students are able to participate in this module. The students will be selected for the module on the basis of academic achievements at Level 1 and additional criteria including motivation, commitment to group-work and inter-disciplinary working and applied research. A student's participation on this field course is contingent upon successfully obtaining necessary documentation for travel to Sikkim, India. This module is NOT available to visiting and exchange students.

The module runs in September before the start of term. Students are expected to be available during this time.

# GEC331 Traethawd Estynedig Daearyddiaeth

**Credits: 30 Session: 2023/24 September-June**

**Pre-requisite Modules:** GEC277; GEC278; GEG277; GEG278

**Co-requisite Modules:**

**Lecturer(s):** Prof NJ Loader, Dr OH Elias, Dr RH Meara

**Format:** Cymorth unigol gan staff gan gynnwys allbwn ar adroddiadau paratoadol. Sesiwnau cefnogi (ar lein)

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

Newid y ffordd y cyflwynir modiwlau i gyflwyno cydamserol ar-lein. Gall y dewis pwnc ar gyfer Traethawd Estynedig gael ei gyfyngu oherwydd cyfyngiadau pandemig Covid-19 (h.y. dewis cyfyngedig o ran pwnc/dull, defnyddio data eilaidd ayyb.). Cyflwynir y traethawd estynedig cyfan yn electronig

Change in delivery of module to on-line synchronous. Choice of Dissertation topic may be limited by covid-19 restrictions (i.e. restricted choice of topic/method, use of secondary data etc.). Complete dissertation to be submitted electronically.

**Module Aims:** Mae'r traethawd estynedig yn adroddiad 10,000 o eiriau (mwyafswm) ar brosiect ymchwil gwreiddiol, sylweddol ac annibynol ar agwedd o Ddaearyddiaeth. Mae fel arfer yn seiliedig ar o amgylch 20-25 diwrnod o waith ymchwil sylfaenol (primary research) a sawl wythnos o waith analeiddio ac ysgrifennu. Mae'r traethawd estynedig yn cynnig y cyfle i chi i ddilyn eich diddordebau personol ac i arddangos eich galluoedd fel Daearyddwr. Yn ystod hynt y traethawd estynedig fe'ch cefnogir gan grwp cefnogaeth/trafodaeth sy'n cael ei arwain gan fyfyrwr, a byd ganddoch hefyd aelod o staff fel arolygydd. Byddwch yn cynnig beirniadaeth adeiladol i gyd-fyfyrwr sy'n ymgymryd a phrosiectau ymchwil cysylltiedig, gan ddysgu o'u profiadau, problemau a'u datrysiadau hwy. Mae'r gefnogaeth ac arolygaeth yma yn cael ei ddarparu drwy fodiwl "Dissertation Support" (GEG332) sydd yn fodiwl cyd-afnyddig.

**Module Content:** Mae'r traethawd estynedig yn adroddiad 10,000 o eiriau (mwyafswm) ar brosiect ymchwil gwreiddiol, sylweddol ac annibynol ar agwedd o Ddaearyddiaeth. Mae fel arfer yn seiliedig ar o amgylch 20-25 diwrnod o waith ymchwil sylfaenol (primary research) a sawl wythnos o waith analeiddio ac ysgrifennu. Mae'r traethawd estynedig yn cynnig y cyfle i chi i ddilyn eich diddordebau personol ac i arddangos eich galluoedd fel Daearyddwr. Yn ystod hynt y traethawd estynedig fe'ch cefnogir gan grwp cefnogaeth/trafodaeth sy'n cael ei arwain gan fyfyrwr, a byd ganddoch hefyd aelod o staff fel arolygydd. Byddwch yn cynnig beirniadaeth adeiladol i gyd-fyfyrwr sy'n ymgymryd a phrosiectau ymchwil cysylltiedig, gan ddysgu o'u profiadau, problemau a'u datrysiadau hwy. Mae'r gefnogaeth ac arolygaeth yma yn cael ei ddarparu drwy fodiwl "Dissertation Support" (GEG332) sydd yn fodiwl cyd-afnyddig.

**Intended Learning Outcomes:** Ar ddiwedd y modiwl yma, fe ddylai'r myfyriwr allu:

- Arolygu'r lenyddiaeth wyddonol, gan wneud defnydd o gonfeydd data electroneg lle'n berthnasol;
- Ymchwilio a deall oblygiadau rheolau priodol lechyd a Diogelwch;
- Cyflawni rhaglen ymchwil priodol yn ofalus;
- Cadw cofnodion ymchwil yn ystod gwaith maes, archifol, cyfrifiadurol, neu labordy;
- Integreiddio deunydd o'r llenyddiaeth gyda canlyniadau a'u crewyd drwy ymchwil;
- Gweithio yn annibynol i gwblhau adroddiad ymchwil sylweddol.

**Assessment:** Project (100%)

**Assessment Description:** Traethawd estynedig 10,000 o eiriau.

**Moderation approach to main assessment:** Universal Double Blind Marking of the whole cohort

**Assessment Feedback:** Rhoddir adborth ar elfennau paratoadol y traethawd estynedig, gan gynnwys adroddiad interim sylweddol a'i gyflwynir ar ddechrau mis Rhagfyr.

**Failure Redemption:** Ail-gyflwyno traethawd estynedig - naill ai ar y testun gwreiddiol neu un newydd - yn y cyfnod ail-eistedd.

**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 cyfnewid a rhai ar ymweliad. Competence in written and spoken Welsh is essential for this module.



## GEC332 Cefnogaeth Traethawd Hir

**Credits: 10 Session: 2023/24 September-June**

**Pre-requisite Modules:** GEC277; GEC278; GEG277; GEG278

**Co-requisite Modules:** gec331

**Lecturer(s):** Prof NJ Loader, Dr AL Pigott, Mr GR Whittaker

**Format:** Tiwtorialau grwp ac unigol

Group tutorials and one-to-one meetings. (Online delivery due to covid-19 restrictions). 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 campws/ar lein

On campus/online

**Module Aims:** Mae'r modiwl yma yn cynnig strwythur, trwy gefnogaeth grwp-cyfoedion dan arweiniad myfyrwyr a goruchwyllo gan staff academiaidd, i fyfyrwyr sy'n dilyn y modiwl 30 credid 'Traethawd Estynedig Daearyddiaeth'. Caiff y broses cefnogaeth a goruchwyllo yma ei hasesu trwy gyflwyniad crynodeb fideo yn (CD1), a chyflwyniad Amlinelliad y Traethawd hir (Dissertation Outline) yn CD2. Trwy weithio o fewn grwp-cyfoedion dan arweiniad, cewch gyfle i gynnig beirniadaeth gefnogol i fyfyrwyr eraill sy'n ymgymryd mewn prosiectau ymchwil perthnasol, a dysgu o'u profiadau ymchwil a strategaethau datrys nhw. Mae'r modiwl yma yn cyd-fynd a'r 'Traethawd Estynedig Daearyddiaeth' a rhaid cymryd y ddau fodiwl ar y cyd.

(This module provides structured, student-led peer-group support and academic staff group supervision for students undertaking the 30-credit 'Dissertation Report: Geography' module. This support and supervision is assessed through the submission of a Video abstract in TB1 and the submission in TB2 of a Dissertation Outline. Working within a supervised Student Peer Group, you will also have the opportunity to provide constructive criticism to fellow students undertaking related research projects, learning from their research problems and subsequent solutions. This module complements the 'Dissertation Report: Geography' module, which is a co-requisite.)

**Module Content:** Amlinelliad awgrymiadol o strwythur y gefnogaeth:

Wythnos 1: Sesiwn cyfarwyddol a chyflwyniad i'r modiwl  
Wythnos 2: Cyfarfod Grp Cyfoedion Traethawd estynedig  
Wythnos 3: Cyfarfod grp gyda goruchwyliwr  
Wythnos 5: Cyfarfod Grp Cyfoedion Traethawd estynedig  
Wythnos 6: Cyfarfod grp gyda goruchwyliwr  
Wythnos 8: Cyfarfod Grp Cyfoedion Traethawd estynedig  
Wythnos 9: Cyfarfod grp gyda goruchwyliwr, a derbyn adborth ar y poster.  
Wythnos 10 - cyflwyno amlinelliad o'r traethawd estynedig  
Wythnos 11: Cyfarfod unigol gyda goruchwyliwr  
Wythnos 12: Cyfarfod Grp Cyfoedion Traethawd estynedig  
Wythnos 13: Cyfarfod grp gyda goruchwyliwr  
Wythnos 15: Cyfarfod Grp Cyfoedion Traethawd estynedig  
Wythnos 16: Cyfarfod unigol gyda goruchwyliwr (trafod copi drafft o'r traethawd estynedig)  
Wythnos 18: Cyflwyno munudau a nodiadau'r cyfarfodydd cyfoedion a goruchwyliwr.  
Wythnos 21: Cyflwyniad poster PowerPoint

**DISGRIFIAD:**

Mae'r modiwl yma yn cynnig strwythur trwy gefnogaeth grwp-cyfoedion dan arweiniad myfyrwyr a goruchwyllo gan staff academiaidd, i fyfyrwyr sy'n dilyn y modiwl 30 credid 'Traethawd Estynedig Daearyddiaeth'. Caiff y broses cefnogaeth a goruchwyllo yma ei hasesu trwy gyflwyniad: CD1; Poster PowerPoint/Abstract-Fideo. CD2; Amlinelliad manwl o'r traethawd hir.

Trwy weithio o fewn grwp-cyfoedion dan arweiniad, cewch gyfle i gynnig beirniadaeth gefnogol i fyfyrwyr eraill sy'n ymgymryd mewn prosiectau ymchwil perthnasol, a dysgu o'u profiadau ymchwil a strategaethau datrys nhw. Mae'r modiwl yma yn cyd-fynd a'r 'Traethawd Estynedig Daearyddiaeth' a rhaid cymryd y ddau fodiwl ar y cyd.

(Indicative structure of support:

Week 1: Briefing  
Week 2: Dissertation Peer Group Meeting  
Week 3: Group meeting with supervisor  
Week 5: Dissertation Peer Group Meeting  
Group meeting with supervisor  
Week 7: PowerPoint poster submission  
Week 8: Dissertation Peer Group Meeting  
Week 9: Group meeting with supervisor, with feedback on posters  
Week 12: Dissertation Peer Group Meeting  
Week 13: Group meeting with supervisor  
Week 15: Dissertation Peer Group Meeting  
Week 18: Dissertation and peer and supervisor meeting minutes submission

**DESCRIPTION**

This module provides structured, student-led peer-group support and academic staff group supervision for students undertaking the 30-credit 'Dissertation Report: Geography' module. This support and supervision is assessed through the submission of:  
a Powerpoint Poster/Video abstract in TB1; Dissertation Outline in TB2.

The 'Dissertation Report: Geography' and 'Dissertation Support - Geography' modules are co-requisites.)

**Intended Learning Outcomes:** Erbyn diwedd y modiwl yma bydd y myfyriwr yn medru:

- Adolygu'r llenyddiaeth wyddonol, gan wneud defnydd o gronfeydd data digidol lle'n briodol.
- Ymchwilio a deall goblygiadau mesurau a deddfwriaeth iechyd a diogelwch addas
- Gweithredu rhaglen ymchwil ystyrlon
- Cyfuno deunydd o'r llenyddiaeth gyda chanlyniadau sy'n deillio o ymchwil
- Gweithio fel rhan o dîm sy'n cynnig cyngor beirniadol a chefnogol i fyfyrwyr eraill.

(At the end of this module the student should be able to:

- \* Survey the scientific literature, making use of electronic databases where appropriate
- \* Research and understand the implications of appropriate health and safety legislation
- \* Execute a careful research program
- \* Keep research records during field, computer or lab work
- \* Integrate material from the literature with results obtained from research
- \* Work in a team providing critical and supporting advice to other students)

**Assessment:** Assignment 1 (50%)  
Assignment 2 (50%)

**Assessment Description:** Cyflwynir tiwtorialau yn unol â'r amserlen, y tiwtor fydd yn penderfynu ar y dull cyflwyno.

Asesiad Semester 1. Cyflwyniad 5 munud ar ymchwil dylunio a dulliau trwy fideo/a recordiwyd

Asesiad Semester 2: Asesiad Ysgrifenedig – Amlinelliad o'r Traethawd Estynedig

Dylai amlinelliad y traethawd estynedig fod ar ffurf rhestr gynnwys sy'n cynnwys teitlau penodau ac is-benawdau penodau ynghyd â disgrifiad o'r hyn y bydd y traethawd estynedig yn ei gynnwys o dan bob is-adran. Dylid anelu at gynnwys canlyniadau a chasgliadau cychwynol.

Assessment Semester 1. 5 min. Video/recorded presentation on research design and methods

Assessment Semester 2: Written assessment – Dissertation Outline

The dissertation outline should take the form of a contents list comprising of chapter titles and chapter sub-headings with description of what the dissertation will include within each sub-section. It should aim to include at least preliminary results and conclusions.

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

**Assessment Feedback:** Feedback through online tutorial system and in written form via University feedback sheets.

**Failure Redemption:** Nid oes modd achub methiant ar Lefel 3. Failure is non redeemable at Level 3.

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

Dim ar gael i fyfyrwyr dethol o bynciau arall, myfyrwyr sy'n ymweld, na myfyrwyr ar gynllun cyfnewid.  
Not available to elective, visiting or exchange students

# GEC333 Ffiniau Ymchwil Daearyddol

**Credits: 20 Session: 2023/24 January-June**

**Pre-requisite Modules:**

**Co-requisite Modules:**

**Lecturer(s):** Dr CJT Ladd

**Format:** 2 awr o ddarlithoedd byw

5 awr o seminarau

2 awr o oriau swyddfa bob wythnos

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:**

Mae'r modiwl yma yn rhoi cyfle i fyfyrwyr i ddangos eu cymhwysedd fel Daearyddwyr drwy gyflawni dadansoddiad beirniadol o amrywiaeth o ffynonellau llenyddol. Er bod y traethawd hir fel arfer yn canolbwyntio ar ddylunio a chyflawni prosiect ymchwil sy'n seiliedig ar gasglu, dadnsoddi a dehongli data, mae'r modiwl yma yn canolbwyntio ar ymgysylltu a llenyddiaeth academiaidd ar y ffin o un agwedd o Ddaearyddiaeth. Gall myfyrwyr ddewis o ystod eang o ffiniau ymchwil o fewn Daearyddiaeth Dynol a Ffisegol sydd wedi eu dewis o flaen llaw gan staff academiaidd yr adran. Gan bod y modiwl yma yn ffocysu ar arddull o ddysgu "myfyriwr-canolog" (student centered), ni fydd y ffiniau wedi eu trafod mewn unrhyw fanylder o fmewn modiwlau blaenorol, er efallai bydd rhai modiwlau wedi cyflwyno'r ffiniau. Bydd yna gyflwyniad fyr i bob ffin ac rhestr fyr o gyfeiriadau pwysig ar Canvas.

Nodwch: rhaid i'r testun a ddewisir beidio a gorgyffwrdd gyda'r testun Traethawd Hir. Os oes unrhyw amheuaeth, yna rhaid i chi drafod gyda'ch Tiwtor Cefnogaeth Traethawd Hir ac bydd angen i chi dderbyn cytundeb ysgrifenedig.

This module provides students with the opportunity to demonstrate their competence as a Geographer by undertaking a critical analysis of a wide variety of literature-based sources in order to develop a cogent, substantial, and persuasive argument. While the Dissertation in Geography normally focuses on the design and execution of an evidenced-based research project that assesses the capacity of students to undertake effective data analysis and interpretation, the purpose of this module is to assess the extent to which students are capable of engaging with the academic literature at the frontier of a particular part of Geography. Students select from a wide range of research frontiers in Human and Physical Geography that have been identified by the academic staff within the Department. Given that this module emphasizes student-centred learning, none of the frontiers will have been covered in other modules, although in many cases modules will have taken students up to some of these frontiers. However, to orientate students and provide them with suitable points of departure and way-stations, there will be a brief introduction to each frontier and a short list of pivotal references disseminated via canvas. (Note: The topic selected by you must not overlap with the subject of your Dissertation. If there is any doubt about potential overlap, this must be discussed with your Dissertation Support Group supervisor and agreed in writing.)

**Module Content:** Cyflwyniad i ffiniau ymchwil ar draws Daearyddiaeth Dynol a Ffisegol.

Dewis ffin ymchwil, adnabod y llenyddiaeth priodol ac addas, asesu'r llenyddiaeth yma yn gritigol, datblygiad o ddadl synhwyrol mewn perthynas a'r ffin ymchwil a ddewiswyd, a gaiff ei gyflwyno ar arddull papur academiaidd.

Rhaid mynychu seminarau ymchwil yr adran (lleiafrif o 4). Rhaid cyflwyno mewn a mynychu seminarau myfyrwyr y modiwl (tua 4 awr).

[Nodwch: rhaid i'r testun a ddewisir beidio a gorgyffwrdd gyda'r testun Traethawd Hir. Os oes unrhyw amheuaeth, yna rhaid i chi drafod gyda'ch Tiwtor Cefnogaeth Traethawd Hir ac bydd angen i chi dderbyn cytundeb ysgrifenedig.]

Introduction to research frontiers across Human and Physical Geography.

Selection of a research frontier, identification of the appropriate literature, critical engagement with this literature, and the development of a cogent, sustained, and persuasive argument in relation to this frontier, which will be presented in the style of an academic paper.

Participation in Departmental Research seminar programme as appropriate (minimum of 4).  
Presentation at and participation in the module's student seminar series (approx. 4 hours).

[Note: The frontier selected by a student must not overlap with the subject of their Dissertation. If there is any doubt about potential overlap, this must be discussed with the Dissertation Support Group supervisor and agreed in writing.]

**Intended Learning Outcomes:** I gael marciau uchel yn y modiwl yma, bydd angen i chi ddangos gallu i:

- feddwl yn gritigol am y cynigion cychwynol yn y teitl a ddewiswyd a'r deunyddiau yr ydych yn eu defnyddio wrth ymchwilio'r teitl.
- Ymgysylltu ar lefel uchel gyda syniadau cymhleth a gwybodaeth perthnasol.
- Datblygu dadlaeon cryf a synhwyrol.

Bwriad y modiwl yw i fod yn uchel-bwynt o rhan profiad ysgrifennu academaidd eich gradd tair mlynedd. Ar ol cwblhau'r modiwl, dylech chi fod yn gallu:

- arddangos ymgysylltiad effeithiol gyda ffin ymchwil Daearyddol.
- Tystiolaeth o ddealltwriaeth manwl o un agwedd o Ddearyddiaeth sydd heb ei ddysgu yn eich modiwlau eraill.
- Arddangos sgiliau a chymhwysedd sy'n gysylltiedig ag archwilio cronfeydd data llyfryddol, ffynonellau ar y we, a chyfnodolion academaidd.
- Aseu deunyddiau ffynhonnell yn gritigol.
- Cynnal dadl academaidd a chyflwyno'r ddadl mewn arddull addas i gynulleidfa academaidd.

Gan fod hwn yn fodiwl 20 credit, mae disgwyl i chi gwblhau tua 200 awr o waith yn astudio, cynllunio ac ysgrifennu eich papur 5,000 o eiriau a pharatoi eich cyflwyniad fideo.

To achieve high marks in this module you will need to display a capacity to:

- think critically about the initial propositions advanced in the title you select and the material you encounter whilst researching that title
- engage at an advanced level with complex ideas and relevant information
- develop a convincing, carefully constructed argument

The module is intended as the 'capstone' writing experience of your three years of degree-level study. On its completion you should be able to:

- demonstrate your effective engagement with a research frontier in Geography
- evidence a detailed appreciation of an area of Geographic knowledge not taught in other modules
- demonstrate skills and competence associated with searching bibliographic data-bases, web-based sources, and academic journals
- critically assess source materials
- sustain an intellectual argument and present this argument in an appropriate style for an academic audience

Because this is a 20-credit module, you should expect to devote close to 200 hours of study-time to your research and to the planning and writing of your 6,000-word paper and preparation of your seminar.

**Assessment:** Coursework 1 (70%)  
Presentation (30%)

**Assessment Description:** Traethawd 6,000 o eiriau  
Cyflwyniad fideo

6000 word essay  
video presentation

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

**Assessment Feedback:** Bydd myfyrwyr yn cael adborth ar ol arholiadau os oes rhai yn digwydd ym mis Ionawr. Bydd adborth ar waith cwrs yn cael eu nodi ar ffurflenni adborth safonol yr adran.

Students will receive examination feedback after exams if taken in January. Continual assessment feedback is given in writing on standard departmental feedback forms.

**Failure Redemption:** Mae methiant yn ddi-adenilladwy yn lefel 3.

Failure is non-redeemable in level 3

**Reading List:** Gastel, Barbara, author., Day, Robert A., 1924-2021, author., How to write and publish a scientific paper, Greenwood, 2022.ISBN: 9781440878848

William Strunk 1869-1946 author., The elements of style / William Strunk, Jr., Place of publication not identified : Pandora's Box Classics, 2017.ISBN: 9897782443

Strunk, William,, White, E. B., The elements of style / William Strunk., Pearson Education,, 2010.ISBN: 9780321248619

Doel, Marcus A., Rewriting the Disaster: Body-Bagged Earthworks, Postmortem Landscapes, and the Description of Fukushima, Routledge, 2019-01-02.ISBN: 2373566X

AlexisMartin, Becky ; Davies, Thom, Towards nuclear geography: Zones, bodies, and communities, Wiley, 2017-09.ISBN: 17498198

Hecht, Gabrielle., The radiance of France nuclear power and national identity after World War II, MIT Press, 2009.ISBN: 1282694545

Pitkanen, Laura ; Farish, Matthew, Nuclear landscapes, SAGE Publications, 2018-12.ISBN: 03091325

NOEL CASTREE, The future of geography in English universities, Blackwell Publishing, 2011-12-01.ISBN: 00167398

Dorling, Danny, Kindness: A new kind of rigour for British Geographers, Elsevier Ltd, 2019-11.ISBN: 17554586

Castree, Noel, The Anthropocene and Geography III: Future Directions: The Anthropocene and Geography III, 2014-07.ISBN: 17498198

Sidaway, James D ; van Meeteren, Michiel ; Flint, Colin, Through troubled times: reflections on Ron Johnston's Geography and Geographers: Anglo-American Human Geography since 1945 (1979) and Peter Taylor's Political Geography: World Economy, National-State and Locality (1985), 2020-05-07.ISBN: 03432521

Cloke, Paul ; May, Jon ; Williams, Andrew, The geographies of food banks in the meantime, SAGE Publications, 2017-12.ISBN: 03091325

Horton, John, Anticipating service withdrawal: young people in spaces of neoliberalisation, austerity and economic crisis, Wiley Subscription Services, Inc, 2016-10.ISBN: 00202754

Lambie-Mumford, Hannah ; Green, Mark A, Austerity, welfare reform and the rising use of food banks by children in England and Wales: Austerity, welfare reform and use of food banks, 2017-09.ISBN: 00040894

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Alsos, Inger Greve ; Sjögren, Per ; Edwards, Mary E ; Landvik, Jon Y ; Gielly, Ludovic ; Forwick, Matthias ; Coissac, Eric ; Brown, Antony G ; Jakobsen, Leif V ; Føreid, Marie K ; Pedersen, Mikkel W, Sedimentary ancient DNA from Lake Skartjørna, Svalbard: Assessing the resilience of arctic flora to Holocene climate change, SAGE Publications, 2016-04.ISBN: 09596836

Rijal, Dilli P ; Heintzman, Peter D ; Lammers, Youri ; Yoccoz, Nigel G ; Lorberau, Kelsey E ; Pitelkova, Iva ; Goslar, Tomasz ; Murguzur, Francisco J.A ; Salonen, J. Sakari ; Helmens, Karin F ; Bakke, Jostein ; Edwards, Mary E ; Alm, Torbjørn ; Bråthen, Kari Anne ; Brown, Antony G ; Alsos, Inger G, Sedimentary ancient DNA shows terrestrial plant richness continuously increased over the Holocene in northern Fennoscandia, American Association for the Advancement of Science, 2021-07-01.ISBN: 23752548

Wang, Yucheng ; Pedersen, Mikkel Winther ; Alsos, Inger Greve ; De Sanctis, Bianca ; Racimo, Fernando ; Prohaska, Ana ; Coissac, Eric ; Owens, Hannah Lois ; Merkel, Marie Kristine Føreid ; Fernandez-Guerra, Antonio ; Rouillard, Alexandra ; Lammers, Youri ; Alberti, Adriana ; Denoeud, France ; Money, Daniel ; Ruter, Anthony H ; McColl, Hugh ; Larsen, Nicolaj Krog ; Cherezova, Anna A ; Edwards, Mary E ; Fedorov, Grigory B ; Haile, James ; Orlando, Ludovic ; Vinner, Lasse ; Korneliusen, Thorfinn Sand ; Beilman, David W ; Bjørk, Anders A ; Cao, Jialu ; Dockter, Christoph ; Esdale, Julie ; Gusarova, Galina ; Kjeldsen, Kristian K ; Mangerud, Jan ; Rasic, Jeffrey T ; Skadhauge, Birgitte ; Svendsen, John Inge ; Tikhonov, Alexei ; Wincker, Patrick ; Xing, Yingchun ; Zhang, Yubin ; Froese, Duane G ; Rahbek, Carsten ; Nogues, David



Bravo ; Holden, Philip B ; Edwards, Neil R ; Durbin, Richard ; Meltzer, David J ; Kjær, Kurt H ; Möller, Per ; Willerslev, Eske, Late Quaternary dynamics of Arctic biota from ancient environmental genomics, Nature Research, 2021-12-02.ISBN: 00280836

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Azpiroz-Zabala, Maria ; Cartigny, Matthieu J. B ; Talling, Peter J ; Parsons, Daniel R ; Sumner, Esther J ; Clare, Michael A ; Simmons, Stephen M ; Cooper, Cortis ; Pope, Ed L, Newly recognized turbidity current structure can explain prolonged flushing of submarine canyons, AMER ASSOC ADVANCEMENT SCIENCE, 2017.ISBN: 23752548

den Hond, Bas, Mud on the Move, 2019-05-21.ISBN: 23249250

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Storlazzi, Curt D ; Elias, Edwin P.L ; Berkowitz, Paul, Many Atolls May be Uninhabitable Within Decades Due to Climate Change, NATURE PUBLISHING GROUP, 2015-09-25.ISBN: 20452322

Ferrario, Filippo ; Beck, Michael W ; Storlazzi, Curt D ; Micheli, Fiorenza ; Shepard, Christine C ; Airoidi, Laura, The effectiveness of coral reefs for coastal hazard risk reduction and adaptation, NATURE PUBLISHING GROUP, 2014-05-13.ISBN: 20411723

Perry, Chris T ; Alvarez-Filip, Lorenzo ; Graham, Nicholas A. J ; Mumby, Peter J ; Wilson, Shaun K ; Kench, Paul S ; Manzello, Derek P ; Morgan, Kyle M ; Slangen, Aimee B. A ; Thomson, Damian P ; Januchowski-Hartley, Fraser ; Smithers, Scott G ; Steneck, Robert S ; Carlton, Renee ; Edinger, Evan N ; Enochs, Ian C ; Estrada-Saldívar, Nuria ; Haywood, Michael D. E ; Kolodziej, Graham ; Murphy, Gary N ; Pérez-Cervantes, Esmeralda ; Suchley, Adam ; Valentino, Lauren ; Boenish, Robert ; Wilson, Margaret ; MacDonald, Chancey, Loss of coral reef growth capacity to track future increases in sea level, Nature Publishing Group, 2018-06-21.ISBN: 00280836

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shows no volcanic winter in East Africa at 75 ka, National Academy of Sciences, 2013-05-14.ISBN: 00278424

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Swyngedouw, Erik, Apocalypse forever?: post-political populism and the spectre of climate change, Sage Publications, Inc, 2010-03-01.ISBN: 02632764

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Meder, Theo, Modern Exempla: Crop Circle Tales in the New Age Era, Walter de Gruyter GmbH & Co. KG, 2007-11.ISBN: 00146242

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Ruddiman, William F, Three flaws in defining a formal 'Anthropocene', SAGE Publications, 2018-08.ISBN: 03091333

Dalby, Simon, Framing the Anthropocene: The good, the bad and the ugly, SAGE Publications, 2016-04.ISBN: 20530196

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Esson, James ; Last, Angela, AntiRacist Learning and Teaching in British Geography, 2020-07-22.ISBN: 00040894

Noxolo, Pat ; Raghuram, Parvati ; Madge, Clare, 'Geography is Pregnant' and 'Geography's Milk is Flowing': Metaphors for a Postcolonial Discipline?, SAGE Publications, 2008-02.ISBN: 02637758

Noxolo, Patricia, Introduction: Decolonising geographical knowledge in a colonised and re-colonising postcolonial world, Wiley, 2017.ISBN: 00040894

UCL students, Why is my curriculum white?.

Ghassan Hage author., Is racism an environmental threat? / Ghassan Hage., Cambridge : Polity, 2017.ISBN: 9780745692265

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

Semester 1 neu 2

Nid yw hyn ar gael i fyfyrwyr sy'n ymweld a'r adran, myfyrwyr cyfnewid na myfyrwyr "elective".

Teaching block 1 OR 2

Not available to elective, visiting or exchange students.

# GEG331 Dissertation Report: Geography

**Credits: 30 Session: 2023/24 September-June**

**Pre-requisite Modules:**

**Co-requisite Modules:**

**Lecturer(s):** Dr AL Pigott

**Format:** Dissertation support - Geography  
Delivery subject to covid-19 restrictions).  
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

Synchronous online delivery / on campus - delivery mode subject to covid-19 restrictions.

**Module Aims:** The dissertation is an original, substantive and independent research project in an aspect of Geography. It is typically based on approximately 20 - 25 days of primary research and several weeks of analysis and write-up. The end result must be less than 7,500 words of text. The dissertation offers you the chance to follow your personal interests and to demonstrate your capabilities as a Geographer. During the course of your dissertation you will be supported by a student-led discussion group and a staff supervisor, and you will also provide constructive criticism to fellow students undertaking related research projects, learning from their research problems and subsequent solutions. This support and supervision is delivered through the 'Dissertation Support' module, which is a co-requisite.

**Module Content:** The dissertation is an original, substantive, and independent research project focused on an aspect of Geography that is supervised by one or more appropriate members of academic staff. The dissertation is presented as a 10,000 word (maximum) report and supported through peer and supervisor meetings provided through the 'Dissertation Support' module. These two modules are co-requisites.

**Intended Learning Outcomes:** At the end of this module the student should be able to:

- Survey the scientific literature, making use of electronic databases where appropriate
- Research and understand the implications of appropriate health and safety legislation
- Execute a careful research program
- Keep research records during field, computer or lab work
- Integrate material from the literature with results obtained from research
- Work independently producing substantial research report

**Assessment:** Project (100%)

**Assessment Description:** Submission of original dissertation, 10,000 words (max).

**Moderation approach to main assessment:** Universal Double Blind Marking of the whole cohort

**Assessment Feedback:** Continual assessment feedback in writing on standard department feedback forms

**Failure Redemption:** Failure is non-redeemable in level 3

**Additional Notes:** Not normally available to visiting and exchange students

# GEG332 Dissertation Support: Geography

**Credits: 10 Session: 2023/24 September-June**

**Pre-requisite Modules:**

**Co-requisite Modules:**

**Lecturer(s):** Dr AL Pigott

**Format:** 7 (online delivery subject to covid-19 restrictions)

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

Tutorials delivered as per timetable, method of delivery remains the choice of the tutor.

**Module Aims:** This module provides structured, student-led peer-group support and academic staff group supervision for students undertaking the 30-credit 'Dissertation Report: Geography' module. This support and supervision is assessed through the submission of a PowerPoint Poster in TB1 and the submission outline in TB2. Working within a supervised Student Peer Group, you will also have the opportunity to provide constructive criticism to fellow students undertaking related research projects, learning from their research problems and subsequent solutions. This module complements the 'Dissertation Report: Geography' module, which is a co-requisite.

**Module Content:** Indicative structure of support:

Week 1: Briefing

Week 2: Dissertation Peer Group Meeting

Week 3: Group meeting with supervisor

Week 5: Dissertation Peer Group Meeting

Group meeting with supervisor

Week 7: PowerPoint poster submission

Week 8: Dissertation Peer Group Meeting

Week 9: Group meeting with supervisor, with feedback on posters

Week 12: Dissertation Peer Group Meeting

Week 13: Group meeting with supervisor

Week 15: Dissertation Peer Group Meeting

Week 18: Dissertation and peer and supervisor meeting minutes submission

Attendance at all group meetings is compulsory.

## DESCRIPTION

This module provides structured, student-led peer-group support and academic staff group supervision for students undertaking the 30-credit 'Dissertation Report: Geography' module. This support and supervision is assessed through the submission of a PowerPoint Poster in TB1, and the submission in TB2 of a dissertation outline. The 'Dissertation Report: Geography' and 'Dissertation Support - Geography' modules are co-requisites.

**Intended Learning Outcomes:** At the end of this module the student should be able to:

- \* Survey the scientific literature, making use of electronic databases where appropriate
- \* Research and understand the implications of appropriate health and safety legislation
- \* Execute a careful research program
- \* Keep research records during field, computer or lab work
- \* Integrate material from the literature with results obtained from research
- \* Work in a team providing critical and supporting advice to other students

**Assessment:** Assignment 1 (50%)  
Assignment 2 (50%)

**Assessment Description:** Coursework comprises of two elements:

Assessment Semester 1. 5 min. Video/recorded presentation on research design and methods

Assessment Semester 2: Written assessment – Dissertation Outline

The dissertation outline should take the form of a contents list comprising of chapter titles and chapter sub-headings with description of what the dissertation will include within each sub-section. It should aim to include at least preliminary results and conclusions.

**Moderation approach to main assessment:** Universal Double Blind Marking of the whole cohort

**Assessment Feedback:** Continual assessment feedback in writing on standard department feedback forms

**Failure Redemption:** Failure is non-redeemable in level 3

**Additional Notes:** Not available to elective, visiting or exchange students.

# GEG333 Geographical Research Frontiers

**Credits: 20 Session: 2023/24 January-June**

**Pre-requisite Modules:**

**Co-requisite Modules:**

**Lecturer(s):** Dr CJT Ladd

**Format:** 2 hour live lectures  
5 hours seminars / interactive small group sessions  
2 hours office hours every week

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 provides students with the opportunity to demonstrate their competence as a Geographer by undertaking a critical analysis of a wide variety of literature-based sources in order to develop a cogent, substantial, and persuasive argument. While the Dissertation in Geography normally focuses on the design and execution of an evidenced-based research project that assesses the capacity of students to undertake effective data analysis and interpretation, the purpose of this module is to assess the extent to which students are capable of engaging with the academic literature at the frontier of a particular part of Geography. Students select from a wide range of research frontiers in Human and Physical Geography that have been identified by the academic staff within the Department. Given that this module emphasizes student-centred learning, none of the frontiers will have been covered in other modules, although in many cases modules will have taken students up to some of these frontiers. However, to orientate students and provide them with suitable points of departure and way-stations, there will be a brief introduction to each frontier and a short list of pivotal references disseminated via Canvas. (Note: The topic selected by you must not overlap with the subject of your Dissertation. If there is any doubt about potential overlap, this must be discussed with your Dissertation Support Group supervisor and agreed in writing.)

**Module Content:** Introduction to research frontiers across Human and Physical Geography.

Selection of a research frontier, identification of the appropriate literature, critical engagement with this literature, and the development of a cogent, sustained, and persuasive argument in relation to this frontier, which will be presented in the style of an academic paper.

[Note: The frontier selected by a student must not overlap with the subject of their Dissertation. If there is any doubt about potential overlap, this must be discussed with the Dissertation Support Group supervisor and agreed in writing.]



**Intended Learning Outcomes:** To achieve high marks in this module you will need to display a capacity to:

- think critically about the initial propositions advanced in the title you select and the material you encounter whilst researching that title
- engage at an advanced level with complex ideas and relevant information
- develop a convincing, carefully constructed argument

The module is intended as the 'capstone' writing experience of your three years of degree-level study. On its completion you should be able to:

- demonstrate your effective engagement with a research frontier in Geography
- evidence a detailed appreciation of an area of Geographic knowledge not taught in other modules
- demonstrate skills and competence associated with searching bibliographic data-bases, web-based sources, and academic journals
- critically assess source materials
- sustain an intellectual argument and present this argument in an appropriate style for an academic audience

Because this is a 20-credit module, you should expect to devote close to 200 hours of study-time to your research and to the planning and writing of your 6,000-word paper and preparation of your video presentation.

**Assessment:** Coursework 1 (70%)  
Presentation (30%)

**Assessment Description:** 6000 word essay  
video presentation

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

**Assessment Feedback:** Students will receive examination feedback after exams if taken in January. Continual assessment feedback is given in writing on standard departmental feedback forms.

**Failure Redemption:** Failure is non-redeemable in level 3

**Reading List:** Gastel, Barbara, author., Day, Robert A., 1924-2021, author., How to write and publish a scientific paper, Greenwood, 2022.ISBN: 9781440878848

William Strunk 1869-1946 author., The elements of style / William Strunk, Jr., Place of publication not identified : Pandora's Box Classics, 2017.ISBN: 9897782443

Strunk, William,, White, E. B., The elements of style / William Strunk., Pearson Education,, 2010.ISBN: 9780321248619

Doel, Marcus A., Rewriting the Disaster: Body-Bagged Earthworks, Postmortem Landscapes, and the Description of Fukushima, Routledge, 2019-01-02.ISBN: 2373566X

AlexisMartin, Becky ; Davies, Thom, Towards nuclear geography: Zones, bodies, and communities, Wiley, 2017-09.ISBN: 17498198

Hecht, Gabrielle., The radiance of France nuclear power and national identity after World War II, MIT Press, 2009.ISBN: 1282694545

Pitkanen, Laura ; Farish, Matthew, Nuclear landscapes, SAGE Publications, 2018-12.ISBN: 03091325

NOEL CASTREE, The future of geography in English universities, Blackwell Publishing, 2011-12-01.ISBN: 00167398

Dorling, Danny, Kindness: A new kind of rigour for British Geographers, Elsevier Ltd, 2019-11.ISBN: 17554586

Castree, Noel, The Anthropocene and Geography III: Future Directions: The Anthropocene and Geography III, 2014-07.ISBN: 17498198

Sidaway, James D ; van Meeteren, Michiel ; Flint, Colin, Through troubled times: reflections on Ron Johnston's Geography and Geographers: Anglo-American Human Geography since 1945 (1979) and Peter Taylor's Political Geography: World Economy, National-State and Locality (1985), 2020-05-07.ISBN: 03432521

Cloke, Paul ; May, Jon ; Williams, Andrew, The geographies of food banks in the meantime, SAGE Publications, 2017-12.ISBN: 03091325

Horton, John, Anticipating service withdrawal: young people in spaces of neoliberalisation, austerity and economic crisis, Wiley Subscription Services, Inc, 2016-10.ISBN: 00202754

Lambie-Mumford, Hannah ; Green, Mark A, Austerity, welfare reform and the rising use of food banks by children in England and Wales: Austerity, welfare reform and use of food banks, 2017-09.ISBN: 00040894

Lindenbaum, John, Countermovement, Neoliberal Platoon, or Re-Gifting Depot? Understanding Decommodification in US Food Banks: Countermovement, Neoliberal Platoon, or Re-Gifting Depot?, 2016-03.ISBN: 00664812

Willerslev, Eske ; Davison, John ; Moora, Mari ; Zobel, Martin ; Coissac, Eric ; Edwards, Mary E ; Lorenzen, Eline D ; Vestergård, Mette ; Gussarova, Galina ; Haile, James ; Craine, Joseph ; Gielly, Ludovic ; Boessenkool, Sanne ; Epp, Laura S ; Pearman, Peter B ; Cheddadi, Rachid ; Murray, David ; Bråthen, Kari Anne ; Yoccoz, Nigel ; Binney, Heather ; Cruaud, Corinne ; Wincker, Patrick ; Goslar, Tomasz ; Alsos, Inger Greve ; Bellemain, Eva ; Brysting, Anne Krag ; Elven, Reidar ; Sønstebo, Jørn Henrik ; Murton, Julian ; Sher, Andrei ; Rasmussen, Morten ; Rønn, Regin ; Mourier, Tobias ; Cooper, Alan ; Austin, Jeremy ; Möller, Per ; Froese, Duane ; Zazula, Grant ; Pompanon, François ; Rioux, Delphine ; Niderkorn, Vincent ; Tikhonov, Alexei ; Savvinov, Grigoriy ; Roberts, Richard G ; Macphee, Ross D. E ; Gilbert, M. Thomas P ; Kjær, Kurt H ; Orlando, Ludovic ; Brochmann, Christian ; Taberlet, Pierre, Fifty thousand years of Arctic vegetation and megafaunal diet, NATURE PUBLISHING GROUP, 2014.ISBN: 00280836

Alsos, Inger Greve ; Sjögren, Per ; Edwards, Mary E ; Landvik, Jon Y ; Gielly, Ludovic ; Forwick, Matthias ; Coissac, Eric ; Brown, Antony G ; Jakobsen, Leif V ; Føreid, Marie K ; Pedersen, Mikkel W, Sedimentary ancient DNA from Lake Skartjørna, Svalbard: Assessing the resilience of arctic flora to Holocene climate change, SAGE Publications, 2016-04.ISBN: 09596836

Rijal, Dilli P ; Heintzman, Peter D ; Lammers, Youri ; Yoccoz, Nigel G ; Lorberau, Kelsey E ; Pitelkova, Iva ; Goslar, Tomasz ; Murguzur, Francisco J.A ; Salonen, J. Sakari ; Helmens, Karin F ; Bakke, Jostein ; Edwards, Mary E ; Alm, Torbjørn ; Bråthen, Kari Anne ; Brown, Antony G ; Alsos, Inger G, Sedimentary ancient DNA shows terrestrial plant richness continuously increased over the Holocene in northern Fennoscandia, American Association for the Advancement of Science, 2021-07-01.ISBN: 23752548

Wang, Yucheng ; Pedersen, Mikkel Winther ; Alsos, Inger Greve ; De Sanctis, Bianca ; Racimo, Fernando ; Prohaska, Ana ; Coissac, Eric ; Owens, Hannah Lois ; Merkel, Marie Kristine Føreid ; Fernandez-Guerra, Antonio ; Rouillard, Alexandra ; Lammers, Youri ; Alberti, Adriana ; Denoëud, France ; Money, Daniel ; Ruter, Anthony H ; McColl, Hugh ; Larsen, Nicolaj Krog ; Cherezova, Anna A ; Edwards, Mary E ; Fedorov, Grigory B ; Haile, James ; Orlando, Ludovic ; Vinner, Lasse ; Korneliusson, Thorfinn Sand ; Beilman, David W ; Bjørk, Anders A ; Cao, Jialu ; Dockter, Christoph ; Esdale, Julie ; Gusarova, Galina ; Kjeldsen, Kristian K ; Mangerud, Jan ; Rasic, Jeffrey T ; Skadhauge, Birgitte ; Svendsen, John Inge ; Tikhonov, Alexei ; Wincker, Patrick ; Xing, Yingchun ; Zhang, Yubin ; Froese, Duane G ; Rahbek, Carsten ; Nogues, David

Bravo ; Holden, Philip B ; Edwards, Neil R ; Durbin, Richard ; Meltzer, David J ; Kjær, Kurt H ; Möller, Per ; Willerslev, Eske, Late Quaternary dynamics of Arctic biota from ancient environmental genomics, Nature Research, 2021-12-02.ISBN: 00280836

Stevenson, Christopher John ; Feldens, Peter ; Georgiopoulou, Aggeliki ; Schönke, Mischa ; Krastel, Sebastian ; Piper, David J. W ; Lindhorst, Katja ; Mosher, David, Reconstructing the sediment concentration of a giant submarine gravity flow, Nature Portfolio, 2018-12-01.ISBN: 20411723

Bailey, Lewis P ; Clare, Michael A ; Rosenberger, Kurt J ; Cartigny, Matthieu J.B ; Talling, Peter J ; Paull, Charles K ; Gwiazda, Roberto ; Parsons, Daniel R ; Simmons, Stephen M ; Xu, Jingping ; Haigh, Ivan D ; Maier, Katherine L ; McGann, Mary ; Lundsten, Eve, Preconditioning by sediment accumulation can produce powerful turbidity currents without major external triggers, Elsevier B.V, 2021-05-15.ISBN: 0012821X

Azpiroz-Zabala, Maria ; Cartigny, Matthieu J. B ; Talling, Peter J ; Parsons, Daniel R ; Sumner, Esther J ; Clare, Michael A ; Simmons, Stephen M ; Cooper, Cortis ; Pope, Ed L, Newly recognized turbidity current structure can explain prolonged flushing of submarine canyons, AMER ASSOC ADVANCEMENT SCIENCE, 2017.ISBN: 23752548

den Hond, Bas, Mud on the Move, 2019-05-21.ISBN: 23249250

Kench, Paul S ; Ford, Murray R ; Owen, Susan D, Patterns of island change and persistence offer alternate adaptation pathways for atoll nations, Nature Portfolio, 2018-02-09.ISBN: 20411723

Storlazzi, Curt D ; Elias, Edwin P.L ; Berkowitz, Paul, Many Atolls May be Uninhabitable Within Decades Due to Climate Change, NATURE PUBLISHING GROUP, 2015-09-25.ISBN: 20452322

Ferrario, Filippo ; Beck, Michael W ; Storlazzi, Curt D ; Micheli, Fiorenza ; Shepard, Christine C ; Airoidi, Laura, The effectiveness of coral reefs for coastal hazard risk reduction and adaptation, NATURE PUBLISHING GROUP, 2014-05-13.ISBN: 20411723

Perry, Chris T ; Alvarez-Filip, Lorenzo ; Graham, Nicholas A. J ; Mumby, Peter J ; Wilson, Shaun K ; Kench, Paul S ; Manzello, Derek P ; Morgan, Kyle M ; Slangen, Aimee B. A ; Thomson, Damian P ; Januchowski-Hartley, Fraser ; Smithers, Scott G ; Steneck, Robert S ; Carlton, Renee ; Edinger, Evan N ; Enochs, Ian C ; Estrada-Saldívar, Nuria ; Haywood, Michael D. E ; Kolodziej, Graham ; Murphy, Gary N ; Pérez-Cervantes, Esmeralda ; Suchley, Adam ; Valentino, Lauren ; Boenish, Robert ; Wilson, Margaret ; MacDonald, Chancey, Loss of coral reef growth capacity to track future increases in sea level, Nature Publishing Group, 2018-06-21.ISBN: 00280836

Mellars, Paul ; Gori, Kevin C ; Carr, Martin ; Soares, Pedro A ; Richards, Martin B, Genetic and archaeological perspectives on the initial modern human colonization of southern Asia, National Academy of Sciences, 2013-06-25.ISBN: 00278424

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UCL students, Why is my curriculum white?.

Ghassan Hage author., Is racism an environmental threat? / Ghassan Hage., Cambridge : Polity, 2017.ISBN: 9780745692265

**Additional Notes:** Live in person teaching on campus only.

# GEG337 Wildfires

**Credits: 20 Session: 2023/24 September-January**

**Pre-requisite Modules:**

**Co-requisite Modules:**

**Lecturer(s):** Prof SH Doerr

**Format:** As lectures, seminars and Q&A sessions (face to face or online, as appropriate) with the potential of a half-day field trip (subject to any future CV-19 restrictions)

**Delivery Method:** The module will be delivered through a blend of activities, and may include, for example, lectures, seminars, practical sessions and Academic Mentoring sessions (face to face or online, as appropriate) with the potential of a half day field trip (subject to any future CV-19 restrictions)

**Module Aims:** Wildfires are a natural phenomenon in the Earth System that has shaped the landscapes and ecology of a wide range of Earth's biomes for many millions of years. They currently burn 3–5 million km<sup>2</sup> of the Earth's surface annually (around 12-20 x the size of the UK). Wildfires (i.e. uncontrolled fires) and managed vegetation fires emit around 8 billion tonnes of CO<sub>2</sub> to the atmosphere on average each year, with some of these emissions contributing to climate change, but most of them being sequestered again during vegetation recovery. Many fires are an essential driver of maintaining ecosystems whether ignited naturally by lightning or humans as land management tool, and do not present an immediate risk to society or the environment. However, some fires lead to loss of life or infrastructures and can also threaten ecosystems that are not adapted to fire or in which fire regimes are altered by human influence. Fire impacts on society extend beyond direct destruction, such as accelerated soil erosion and water contamination, or exposure to smoke contributing to over 300,000 premature deaths per year. Major fire outbreaks in recent years have received extensive media attention and fuelled concern that climate change is increasing fire activity, threatening human livelihood, destroying ecosystems and accelerating climate change. These conflicting roles of fire pose a huge challenge: how do we balance the natural role of vegetation fires on Earth with the need to protect life and infrastructure?

This module will provide an multifaceted overview of vegetation fires and its role in maintaining ecosystems, how fire is ignited, how climate change, land management, weather and fuel types interact to determine the nature and behaviour of fire, how fire directly and indirectly impacts the natural environment and societies, how the media and societies perceive fire, and how we can manage and co-exist with fire in our changing world.

Given the multidisciplinary nature of fire science, ranging from physical principles to ecology and socio-economic and political dimensions, no textbook exists that covers all these comprehensively. The module thus will use a few textbooks, but also requires engaging critically with the latest scientific literature. It particularly suited to students who focus on physical geography, but it also offers insights and skills relevant to cultural, social and economic geography, and other disciplines.

**Module Content:** • Fire principles (combustion and fire behaviour)

- Fire as a factor shaping ecosystems through the Earth's history
- Fire in the tropics
- Fire in temperate and Mediterranean regions
- Fire in boreal and arctic regions
- Fire in the UK
- Direct environmental and social impacts of fire
- Indirect environmental and social impacts of fire
- Fire feedbacks with global climate change
- Temporal and regional trends in fire activities and their drivers
- Social 'fire': perceptions versus realities and the role of media
- Fire management, insurance, and policies
- Coexisting with fire: rethinking resilience to wildfire

The reading list field below does not work, hence reading list added here:

Fire on Earth – An Introduction, Andrew Scott et al. Wiley & Sons, 2014

Fire – A Very Short Introduction, Andrew Scott Oxford University Press, 2020

Most reading will be based on journal articles

<p><b>Intended Learning Outcomes:</b> 1. Understanding the principles of fire, its ignition and behavior  2. Understanding the co-evolution of fire with ecosystems and their adaption to fire (pyromes).  3. Knowledge of the causes, temporal trends and impacts of fires in the Earth's major biomes.  4. Understanding the complex interactions between climate, land use and societies in fire occurrence and behavior  5. Skills in mapping and assessing the impacts of fires using commonly used modelling tools  6. Understanding of the tools and associated benefits and drawbacks of modern fire suppression approaches  7. Insights into the complexities of managing fire for conflicting purposes and in deriving fire policies  8. Understanding of how science, media, policy and major industries affect perceptions and management of fire in the UK and a selection of major fire affected countries across the world</p>	
<b>Assessment:</b>	Class Test 1 - Coursework (15%) Assignment 1 (25%) Briefing Paper (60%)
<b>Assessment Description:</b>	Assessment 1 (online problem-based test) 15% Seminar presentation on modelling exercise 25% End of module report (policy briefing document) 60%
<b>Moderation approach to main assessment:</b>	Moderation by sampling of the cohort
<b>Assessment Feedback:</b>	Students will receive feedback immediately after the online tests and individual written comments on coursework within 3 weeks of the submission deadline
<b>Failure Redemption:</b>	Failure is non-redeemable in level 3
<b>Reading List:</b>	Scott, Andrew C., Bowman, D. M. J. S.; Bond, William J., 1948-; Pyne, Stephen J., 1949-; Alexander, Martin E., Fire on earth : an introduction, Wiley Blackwell, 2014.ISBN: 9781119953562 Belcher, Claire M., editor of compilation., Fire phenomena and the Earth system : an interdisciplinary guide to fire science, Wiley-Blackwell, 2013.ISBN: 9780470657485
<b>Additional Notes:</b>	Delivery of both teaching and assessment will be blended including live and self-directed activities online and on-campus.
<p>Normally available to elective, visiting or exchange students. Please note that any failures are redeemed during the August resit period, so you must ensure your availability.</p>	



<b>GEG344 The Cryosphere in a Changing Climate</b>	
<b>Credits: 20 Session: 2023/24 September-January</b>	
<b>Pre-requisite Modules:</b>	
<b>Co-requisite Modules:</b>	
<b>Lecturer(s):</b> Prof T Murray, Dr J Hiemstra, Prof B Kulesa, Prof AJ Luckman	
<b>Format:</b>	32 (25 lecture + 7 presentation & discussion) 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.
<b>Delivery Method:</b> Delivery of teaching will be blended - most will be face-face on campus but seminars are online.	
<b>Module Aims:</b> This module will provide you with the scientific basis to understand the physical behaviour of glacier ice in our changing climate. We will look at spatial scales ranging from individual ice crystals to continental-scale glaciation. The module core topics will include glacier mass balance, transformation of snow to ice, glacier hydrology, glacier dynamics, ice crystal structure and deformation, glacier sliding, deformation of glacial sediments, glacier flow instabilities and glacier surging. We will introduce example topics of current research interest. The module is assessed through examination, as well as group presentation on a seminar and a short individual report.	
<b>Module Content:</b> 1) Fundamentals of Glaciology, including mass balance, glacial dynamics, glacial hydrology and sedimentology, glacial geomorphology, Antarctic and Greenland ice sheets. 2) Approaches and Techniques in Glaciology, such as remote sensing, and geophysics.	
<b>Intended Learning Outcomes:</b> At the end of this module you will have knowledge and understanding of: <ol style="list-style-type: none"> <li>1. The physical processes controlling the behaviour of glaciers and ice sheets.</li> <li>2. How glaciers and ice sheets interact with the landscape.</li> <li>3. The 'practice of Glaciology': techniques used to investigate glacial systems.</li> </ol> <p>At the end of this module you will be able to:</p> <ol style="list-style-type: none"> <li>1. Discuss the key concepts of glacier and ice sheet behaviour</li> <li>2. Evaluate state-of-the-science hypotheses in Glaciology</li> <li>3. Appraise the usefulness of different approaches to problems in Glaciology</li> </ol>	
<b>Assessment:</b>	Examination 1 (70%) Coursework 1 (15%) Group Work - Presentation (15%)
<b>Assessment Description:</b> Examination 70% Group work - Presentation 15% Coursework 1 - individual 15%	
<b>Moderation approach to main assessment:</b> Moderation by sampling of the cohort	
<b>Assessment Feedback:</b> Students will receive examination feedback after exams if taken in January. Continual assessment feedback is given in writing on standard departmental feedback forms.	
<b>Failure Redemption:</b> Failure is non-redeemable in level 3	

**Reading List:** Benn, Douglas I., Evans, David J. A., *Glaciers & glaciation* / Douglas I. Benn and David J. A. Evans., Hodder Arnold., 2008.ISBN: 9780340905791  
K. M. Cuffey (Kurt M.) author., W. S. B Paterson, *The physics of glaciers* / K.M. Cuffey, W.S.B. Paterson., Burlington, MA : Butterworth-Heinemann is an imprint of Elsevier, 2010.ISBN: 9780080919126  
Paterson, W. S. B., *The physics of glaciers* / W.S.B. Paterson., Butterworth/Heinemann., 1998.ISBN: 9780750647427  
Knight, Peter., *Glacier science and environmental change* / edited by Peter G. Knight., Wiley-Blackwell., 2009.ISBN: 9781405196536  
Ralf. Greve, Heinz Blatter, *Dynamics of ice sheets and glaciers* / Ralf Greve, Heinz Blatter., Springer, 2009.ISBN: 9783642034152  
John Menzies, *Modern and past glacial environments* editor, John Menzies., Butterworth-Heinemann, 2002.ISBN: 128101320X  
M. Tedesco 1971- editor., *Remote sensing of the cryosphere* / edited by M. Tedesco., Hoboken, New Jersey : John Wiley & Sons, Inc., 2015.ISBN: 1118368908  
Richard S Williams; Jane G Ferrigno; Anker Weidick; Geological Survey (U.S.), *Satellite image atlas of glaciers of the world. C. Greenland* / by Anker Weidick; edited by Richard S. Williams and Jane G. Ferrigno. ;with a section on Landsat images of Greenland by Richard S. Williams and Jane G. Ferrigno., U.S. G.P.O., 1995.ISBN: 0607714549  
Richard S Williams; Jane G Ferrigno; Geological Survey (U.S.), *Satellite image atlas of glaciers of the world. E. Glaciers of Europe* / edited by Richard S. Williams and Jane G. Ferrigno., U.S. G.P.O., 1993.ISBN: 0607714557

**Additional Notes:** Delivery of teaching will be blended - most will be face-face on campus but seminars are online.

This module has no pre- or co- requisites

# GEG358 Measuring Climate Change

**Credits: 20 Session: 2023/24 January-June**

**Pre-requisite Modules:**

**Co-requisite Modules:**

**Lecturer(s):** Dr I Robertson, Prof MH Gagen

**Format:** Lectures 20; Workshops 6. Contact Hours will be delivered through lectures and workshops." Remove online activities.

**Delivery Method:** The module will be delivered through lectures and workshops.

**Module Aims:** The aim of this module is to provide the participants with the relevant skills to place the widely reported anthropogenic influences upon climate into the perspective of a naturally changing climatic system. The module focuses upon the techniques used to reconstruct changes in climate over the last 1000 years and presents reconstructions at differing temporal scales. The module is directed towards students with a basic scientific and mathematical background.

**Module Content:** Description

The aim of this module is to provide the participants with the relevant skills to place the widely reported anthropogenic influences upon climate into the perspective of a naturally changing climatic system. The module focuses upon the techniques used to reconstruct changes in climate over the last 1000 years and presents reconstructions at differing temporal scales. There is an emphasis upon dendrochronology reflecting the relative importance of this topic within the literature. The mathematical techniques used to reconstruct past climates are discussed briefly. The module is directed towards students with a basic scientific and mathematical background.

**Intended Learning Outcomes:** - Develop a knowledge and understanding of the physical basis, application and limitations of the main techniques used in reconstructing the climate of the last 1000 years  
- Synthesize the existing information on the climate of the last 1000 years  
- Critically evaluate the published literature on the climate of the last 1000 year  
- Assess the techniques used to obtain climatic information from proxy data.  
- Discuss the key concepts involved in standardizing proxy indices to remove non-climatic trends  
- Place the widely-reported anthropogenic trends in recent climate into the perspective of a naturally changing climatic system

**Assessment:** Coursework 1 (30%)  
Coursework 2 (20%)  
Examination 1 (50%)

**Assessment Description:** Outline of typical lecture topics:

- 1) Climate past, present – Prof. Mary Gagen
- 2) Climate future – Prof. Mary Gagen
- 3) Introduction to tree-ring proxies - Dr I Robertson
- 4) Stable isotopes in tree-rings – Dr I Robertson
- 5) Dating archives – Dr I Robertson
- 6) Peat - Dr I Robertson
- 7) Collapse of civilisations – Dr I Robertson
- 8) Sea-level changes - Dr I Robertson
- 9) Laminated sediments – Dr I Robertson
- 10) Ice cores – Dr I Robertson
- 11) Tephrochronology – Dr I Robertson
- 12) Methods of Climatic Reconstruction – Dr I Robertson
- 13) Documentary and historical records - Dr I Robertson
- 14) Summary – Dr I Robertson

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

**Assessment Feedback:** Continual assessment feedback is provided online using standard departmental feedback forms.

**Failure Redemption:** Failure is non-redeemable in level 3

**Reading List:** Fritts, Harold C., Tree rings and climate / H.C. Fritts., Blackburn Press,, 2001.ISBN: 9781930665392

H. Fritts, Tree Rings and Climate., Elsevier Science, 2012.ISBN: 9780323145282

W. F. Ruddiman (William F.), 1943- author., Earth's climate : past and future / William F. Ruddiman., New York : W.H. Freeman and Company, 2014.ISBN: 9781429255257

John Houghton (John Theodore), author., Global warming : the complete briefing / Sir John Houghton., Cambridge : Cambridge University Press, 2015.ISBN: 9781107091672

Stocker, Thomas,, Climate change 2013 : the physical science basis : Working Group I contribution to the Fifth assessment report of the Intergovernmental Panel on Climate Change / edited by Thomas F. Stocker, Working Group I co-chair, University of Bern [and nine others]., Cambridge University Press,, [2014].ISBN: 9781107661820

J. J. Lowe (Joseph John), 1946- author., Mike Walker author., Reconstructing quaternary environments / John Lowe and Mike Walker., Abingdon, Oxon : Routledge is an imprint of the Taylor & Francis Group, an informa business, 2015.ISBN: 9781317753704

Diamond, Jared M., Collapse : how societies choose to fail or survive, Penguin Books, 2011.ISBN: 9780241958681

**Additional Notes:** The module is taught in Semester 2 usually with an introductory lecture in Semester 1.

Normally available to elective, exchange and visiting students.

<b>GEG363 Volcanology</b>	
<b>Credits: 20 Session: 2023/24 January-June</b>	
<b>Pre-requisite Modules:</b>	
<b>Co-requisite Modules:</b>	
<b>Lecturer(s):</b> Dr KJ Preece, Dr PG Albert	
<b>Format:</b>	5 full days in the field (40 hours) 5 hour session on campus before and after trip (5 hours)
<b>Delivery Method:</b> On campus lectures and field course	
<b>Module Aims:</b> In this module, students will study magmatic and volcanic processes, from source to surface. We will follow the journey of magma, from its production inside the Earth, to eruption at the surface through volcanoes, and injection of volcanic ash and gases into the atmosphere. The module will cover magma generation, storage and evolution, ascent and eruption. Students will gain an understanding of processes underpinning eruptive styles and interpretation of these processes from the volcanic products. The module also explores how volcanism affects our planet's climate and society.	
<p>Delivery of the module will include a combination of on-campus sessions and a field course to the Eifel Volcanic Field (Germany). The field course will enable in-situ study of diverse volcanic landforms and products, formed via a wide range of eruptive styles, including effusive and explosive eruptions. During the field course, students will study various aspects of volcanic geology, including learning how to observe, measure and interpret volcanic rocks and deposits.</p> <p>The module has a strong geological focus, and therefore a keen interest in geology and some previous knowledge of geology is highly recommended.</p>	
<b>Module Content:</b> The module syllabus will include the following topics:	
<ul style="list-style-type: none"> <li>• Volcanoes and their tectonic setting</li> <li>• Magma generation and evolution</li> <li>• Physical properties of magma</li> <li>• Effusive volcanism and lava</li> <li>• Explosive volcanism and pyroclastic deposits</li> <li>• Tephrochronology – principles and applications</li> <li>• Volcanoes, the atmosphere and climate</li> </ul>	
<b>Intended Learning Outcomes:</b> With successful completion of this module, students should be able to:	
<ul style="list-style-type: none"> <li>• Describe, evaluate and interpret volcanic phenomena and processes operating on the journey of magma from source to surface.</li> <li>• Distinguish different volcanic products and determine from their characteristics the processes involved in their formation.</li> <li>• Analyze and interpret volcanological datasets.</li> <li>• Communicate scientific ideas and arguments in a coherent and concise manner.</li> </ul>	
<b>Assessment:</b>	Coursework 1 (25%) Coursework 2 (50%) Coursework 3 (25%)
<b>Assessment Description:</b> Pre-field course coursework (Assessment 1) Field course exercises (Assessment 2) Post- field course coursework (Assessment 3)	
<b>Moderation approach to main assessment:</b> Moderation by sampling of the cohort	
<b>Assessment Feedback:</b> Students will receive individual feedback for all assessments in writing on standard departmental feedback forms and electronically via Canvas	
<b>Failure Redemption:</b> Resubmit failed assessment components. Alternative and/or supplementary assessment.	

**Reading List:** Sigurdsson, Haraldur, editor., The encyclopedia of volcanoes, Academic Press, 2015 - 2015. ISBN: 0123859395

Cas, R. A. F. (Ray A. F.), Wright, J. V. (John V.), Volcanic successions : modern and ancient ; a geological approach to processes, products and successions, Allen & Unwin, 1987. ISBN: 0045520224

Coe, Angela L., Geological field techniques, Wiley-Blackwell, 2010. ISBN: 9781444330625

Marti, Joan, editor.; Ernst, Gerald, 1968- editor., Volcanoes and the environment, Cambridge University Press, 2005 - 2005. ISBN: 9780511331343

Marshall, Lauren R. ; Maters, Elena C. ; Schmidt, Anja ; Timmreck, Claudia ; Robock, Alan ; Toohey, Matthew, Volcanic effects on climate: recent advances and future avenues, Springer Berlin Heidelberg, 2022-05-01. ISBN: 14320819

Sigl, M. ; Winstrup, M. ; McConnell, J.R. ; Welten, K.C. ; Plunkett, G. ; Ludlow, F. ; Büntgen, U. ; Caffee, M. ; Chellman, N. ; Dahl-Jensen, D. ; Fischer, H. ; Kipfstuhl, S. ; Kostick, C. ; Maselli, O.J. ; Mekhaldi, F. ; Mulvaney, R. ; Muscheler, R. ; Pasteris, D.R. ; Pilcher, J.R. ; Salzer, M. ; Schüpbach, S. ; Steffensen, J.P. ; Vinther, B.M. ; Woodruff, T.E., Timing and climate forcing of volcanic eruptions for the past 2,500 years, Springer Nature, 2015-07-30. ISBN: 00280836

Sigl, Michael ; Toohey, Matthew ; McConnell, Joseph R ; Cole-Dai, Jihong ; Severi, Mirko, Volcanic stratospheric sulfur injections and aerosol optical depth during the Holocene (past 11500 years) from a bipolar ice-core array, Copernicus GmbH, 2022-07-12. ISBN: 18663516

McConnell, Joseph R. ; Sigl, Michael ; Plunkett, Gill ; Burke, Andrea ; Kim, Woon Mi ; Raible, Christoph C. ; Wilson, Andrew I. ; Manning, Joseph G. ; Ludlow, Francis ; Chellman, Nathan J. ; Innes, Helen M. ; Yang, Zhen ; Larsen, Jessica F. ; Schaefer, Janet R. ; Kipfstuhl, Sepp ; Mojtabavi, Seyedhamidreza ; Wilhelms, Frank ; Opel, Thomas ; Meyer, Hanno ; Steffensen, Jørgen Peder, Extreme climate after massive eruption of Alaska's Okmok volcano in 43 BCE and effects on the late Roman Republic and Ptolemaic Kingdom, National Academy of Sciences, 2020-07-07. ISBN: 00278424

Stefan Brönnimann, Tambora and the "Year Without a Summer" of 1816.

Carn, S.A. ; Clarisse, L. ; Prata, A.J., Multi-decadal satellite measurements of global volcanic degassing, Elsevier B.V, 2016-02-01. ISBN: 03770273

Witze, Alexandra, Why the Tongan eruption will go down in the history of volcanology, England, 2022-02-17. ISBN: 00280836

Miller, Gifford H. ; Geirsdóttir, Áslaug ; Zhong, Yafang ; Larsen, Darren J. ; Otto-Bliesner, Bette L. ; Holland, Marika M. ; Bailey, David A. ; Refsnider, Kurt A. ; Lehman, Scott J. ; Southon, John R. ; Anderson, Chance ; Björnsson, Helgi ; Thordarson, Thorvaldur, Abrupt onset of the Little Ice Age triggered by volcanism and sustained by sea-ice/ocean feedbacks, Blackwell Publishing Ltd, 2012-01. ISBN: 00948276

Niemeier, Ulrike ; Riede, Felix ; Timmreck, Claudia, Simulation of ash clouds after a Laacher See-type eruption, Copernicus GmbH, 2021-03-11. ISBN: 18149324

Baldini, James U. L. ; Brown, Richard J. ; Mawdsley, Natasha, Evaluating the link between the sulfur-rich Laacher See volcanic eruption and the Younger Dryas climate anomaly, Copernicus GmbH, 2018-07-04. ISBN: 18149324

Reinig, Frederick ; Wacker, Lukas ; Jöris, Olaf ; Oppenheimer, Clive ; Guidobaldi, Giulia ; Nievergelt, Daniel ; Adolphi, Florian ; Cherubini, Paolo ; Engels, Stefan ; Esper, Jan ; Land, Alexander ; Lane, Christine ; Pfanz, Hardy ; Remmele, Sabine ; Sigl, Michael ; Sookdeo, Adam ; Büntgen, Ulf, Precise date for the Laacher See eruption synchronizes the Younger Dryas, Nature Publishing Group, 2021-07-01. ISBN: 00280836

Aubry, Thomas J. ; Farquharson, Jamie I. ; Rowell, Colin R. ; Watt, Sebastian F. L. ; Pinel, Virginie ; Beckett, Frances ; Fasullo, John ; Hopcroft, Peter O. ; Pyle, David M. ; Schmidt, Anja ; Sykes, John Staunton, Impact of climate change on volcanic processes: current understanding and future challenges, Springer Berlin Heidelberg, 2022-06-01. ISBN: 14320819

Lowe, David J., Tephrochronology and its application: A review, Elsevier B.V, 2011. ISBN: 18711014

**Additional Notes:** The module will be capped at 40 participants. Initial priority will go to students enrolled on Environmental Geoscience and Physical Geography degree programmes. If capacity allows, students enrolled on BSc and BA Geography pathways may enrol based on a random allocation.

Not available to visiting and exchange students.

Fieldtrip dates to be confirmed. There will be a charge associated with the trip to cover travel and accommodation costs.