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Student Handbook Annex – TRACEE Master ST5

Study Track 5: Environmental Geoscience

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1 The study track 5: Environmental Geoscience

1.1 The vision of the study track

This study track is part of an 'umbrella' international programme, the Transdisciplinary Master in Climate, Environment and Energy, an allied initiative between 11 partner universities within Europe and Africa. The programme consists of four semesters; the first semester will be spent at the University of Stockholm (Sweden), the second at the University of Glasgow (UK), the third at the Aix-Marseille University (France). In the fourth semester students will complete a thesis at any of the three Universities mentioned above.

As a whole, the Transdisciplinary master is a framework for education about climate, environment and energy, with a strong focus on trans-disciplinarity that permeates the entire programme, from the first semester to the dissertation design. The programme in Environmental Geoscience combines the study of the fundamentals and applied aspects of geoscience to develop skills required to implement sustainable environmental solutions to global challenges. Using a variety of pedagogical approaches, all driven by the most up to date research in the field of environmental sustainability, the programme will provide students with a command of the relevant scientific knowledge, digital tolls and innovative technologies to empower them to develop solutions to environmental challenges.

The programme include core and optional courses to provide the students with the opportunity to tailor their studies to their specific needs and aspiration, including an in-depth knowledge of techniques, including numerical modelling, used to investigate, monitor and predict environmental hazards and risks. This programme is particularly suitable for students that are interested in the most up to date science and technology to solve geo-environmental problems for their future career and/or for further studies.

The main aims of this programme are to:

- Develop an informed ability to understand the interconnectivity of all aspects of our environment, by combining a solid in-depth scientific base within a wider framework, to understand the complex interaction of all aspect of environmental changes.
- Formulate and enhance adaptive strategies to mitigate and adapt to the effect of environmental changes and support community for a just transition.
- Apply a systematic approach to transdisciplinary research, supporting students to identify the mechanisms through which environmental issues drive social and economic impact and vice versa.
- Acquire a series of technological skills to approach research in environmental geoscience

1.2 Target group of students: Entry requirements

Normally a first or upper second-class Honours degree in a relevant area or equivalent professional experience

1.3 Intended Learning outcomes of the study track

By the end of this programme, students will be able to:

- Describe and evaluate the urgent threats to humanity, including health, climate and environmental change.
- Explain the environmental challenges faced by our planet and critically evaluate the interactions between the different components of the physical environment.
- Demonstrate a familiarity with models applied to climatology and environmental challenges using the most up to date practises in academia and industry.
- Solve a wide range of problems relating to the capture, processing, management, modelling and interpretation and presentation of data, related to the transdisciplinary approach to environmental geoscience.

- Create and resource an independent transdisciplinary research project.
- Present, for both a specialist and non-technical audience, advanced geo-environmental and research concepts in range of formats, including, but not limited to reports, posters and social platforms.
- Engage with diverse perspectives and work in groups/teams respectfully and ethically.
- Think, learn and work independently (including time management).

2 Structure overview of the study track 5

The study track is divided in 4 semesters of 30 ECTS each for a total of 120 ECTS.

The study track takes place at Stockholm University, Sweden (SU), the University of Glasgow, Scotland (UofG) and Aix-Marseille University, France (AMU).

- The first semester corresponds to the programme common core. It takes place in Stockholm (SU) in autumn and is described in the Student Handbook.
  [Start date and end dates to be decided]
- The second semester is the first part of the study track specialisation in Environmental Geoscience. It takes place during the spring semester in Glasgow (UofG)
  [Start date and end dates to be decided]
- The third semester is the second part of the study track specialisation in Environmental Geoscience. It takes place during the autumn semester of the second year in Marseille (AMU).
  [Start date and end dates to be decided]
- The fourth and last semester is dedicated to the final degree project, the Master thesis. It takes place during the spring semester at SU, UofG or AMU.
  [Start date and end dates to be decided]

<table>
<tr><th>Study track</th><th>Semester 1</th><th>Semester 2</th><th>Semester 3</th><th>Semester 4</th></tr>
<tr><td>ST5: Environmental Geoscience</td><td>SU</td><td>UofG</td><td>AMU</td><td>SU or UofG or AMU</td></tr>
<tr><td></td><td>Common Core</td><td colspan="2">Study Track</td><td>Master Thesis</td></tr>
<tr><td></td><td colspan="4">Transdisciplinary stream</td></tr>
</table>

3 Study track content overview

The study track overview by study progress is presented below:

University	Code	Module Title	ECTS per Semester				Total ECTS
			S1	S2	S3	S4	
SU	Mandatory	Climate, Energy and Environment – A Transdisciplinary Perspective • Systems Thinking (3 ECTS) • Climate, Environment and Energy – A Natural Science Perspectives (9 ECTS) • Climate, Environment and Energy – A Social Science Perspectives (9 ECTS) • Climate, Environment and Energy – A Humanities Perspective (6 ECTS) • Creating Knowledge Through Transdisciplinary Methods (3 ECTS)	30				30
UofG	Mandatory	Topographic Modelling and Landscape Monitoring		5			30
	Mandatory	Modelling of Landscape Evolution		5			
	Mandatory	Machine Learning Applications for Earth System Problems		5			
	Mandatory	GNSS and Geodesy		5			

	Conditionally Elective	Specialization (1 among 2 specialization, 10 ECTS)
		• Water Monitoring and Modelling
		  ○ Modelling Water Environments (5 ECTS)
		  ○ Monitoring Water Environments (5 ECTS)
		• Specialization in Computational Geoscience
		  ○ Numerical Modelling of Solid Earth Dynamics (5 ECTS)
		  ○ Analytical Methods in Geoscience (5 ECTS)
				10			

AMU	Mandatory	Debates in Geosciences			2		30
	Mandatory	APP3 Project driven learning (modelling in geosciences)			4		
	Mandatory	Field trip			6		
	Mandatory	Advanced topics in geosciences			9		
	Mandatory	Quaternary geochronology			3		
	Mandatory	Remote sensing of Earth and Planetary Surfaces (3 ECTS)			3		
	Conditionally Elective	Select 1 course in the list provided: • Climate-Carbon Cycle-Carbonates (3 ECTS) • Faults From the Outcrop to the Plate Boundary (3 ECTS)			3		
SU / PLUS / UB	Mandatory	Master Thesis				30	30
			30	**30**	**30**	**30**	**120**

4 Your Semester at the University of Glasgow

4.1 Arrival and welcome activities

The University of Glasgow (UofG) has very detailed webpages which can be accessed to find out lots of different information about Glasgow. There are three main webpages that you should look at for advice and information about life and studying at the University of Glasgow.

These are:

- The general pages for students
- The pages for international students
- The pages of the Student Representative Council. This is an independent, student-led organisation, recognised as the representative body for students registered at UofG.

For example, you can find a checklist to help you prepare for your arrival in Glasgow on the general website for students. Please see here: www.gla.ac.uk/myglasgow/students/new/checklist/

Information about welcome weeks for international students take place in September and January. The information about the Welcome Weeks can be found through the webpages for international students. Please see here: www.gla.ac.uk/international/support/welcomeeventschedule/

Your first point of contact regarding any practical issues relating to your time as a student at UofG is the **Student Services Enquiry Team** (SSET) based in the Fraser Building. The SSET can help you with issues such as:

- Campus cards (expired, lost, damaged)
- Certifying Letters and Student Status forms
- Council tax Exemption
- Degree Verification
- Personal Information Updates
- Transcripts or Higher Education Achievement Record (HEAR)
- Financial Issues
- Advice on other services to contact within the Schools and Colleges
- General advice

The SSET also has a specific team called the Registration and Enrolment Support Team (REST). Theis team operates in September and October and can help with any enrolment issues.

There is also a specific team that can help with International Student Support (ISS). This team can help with:

- **Visa and Immigration Advice**: The ranges from practical advice for applying for a visa or a visa extension as well as advice on more complex immigration queries related to dependents or asylum. This team works closely with the Visa Compliance Team on these issues.
- **Practical Advice**: for international students, please be aware of frauds and scams such as arriving at Glasgow airport or opening a bank account.
- **Helping students adjust** it can feel strange being in a different country and culture. The ISS team can help you with finding relevant societies, cultural, or spiritual group in Glasgow.
- **Variety of Events:** The ISS team advertise various events for international students.

4.2 Housing

All the most up-to-date information about University accommodation can be found here: https://www.gla.ac.uk/postgraduate/accommodation/fees/

It is possible to look for private accommodation in the city, but please make sure that you rent from a landlord with the correct licenses. In particular, your landlord should have an HMO License for multiple occupancy use.

More information about private accommodation can be found here:

https://www.gla.ac.uk/postgraduate/accommodation/privateaccommodation/

4.3 Living expenses

It is estimated that you should budget from around £1,100 to £1,700 per month to live and study in Glasgow. Costs could be slightly higher or lower depending on your accommodation costs. More information can be found here:
https://www.gla.ac.uk/study/studentlife/costofliving/#:~:text=It's%20also%20a%20good%20idea,lifestyle%20(published%20October%202024).

If you run into financial difficulties while studying at UofG, please reach out, either to the **Student Representative Council** through its Advice Centre or the **Student Support Officers** at your College or School. Contact details can be found here:
https://www.gla.ac.uk/myglasgow/students/supportofficers/

4.4 Bank

You may need a UK bank account while staying in Glasgow. For example, you may need to pay your rent via bank transfer or may need to provide evidence of your finances for immigration purposes. UofG cannot recommend any particular banks, but high-street banks are easily accessible as well as online bank accounts. If you will be in the UK for less than six months, then please see here:

https://www.gla.ac.uk/international/support/practicalinformationinternationalstudents/banking/#studentsoncoursesoflessthan6months

4.5 Public transport

Glasgow has a bus, train, and subway network. Google Maps generally provides accurate information for travelling across the city. But you can also use Traveline, Scotland's national public transport information service provider. The buses in Glasgow are generally operated by either First Bus or McGill, although other companies also operate in Glasgow and throughout Scotland. Trains are provided by Scotrail. The subway network is provided by SPT

Tickets for First Bus can be paid for using their 'tap on, tap off' system. This allows you to tap your card or phone against the card readers when you enter the bus and then tap again as you leave. You will need a UK bank account to access this service. Otherwise, a ticket can be purchased from the driver. You will need to let the driver know what bus stop you plan to get off at unless you buy a day pass.

Tickets for McGill buses are purchased from the driver when you enter the bus. You will need to let the driver know what bus stop you plan to get off at unless you buy a day pass.

Tickets for Scotrail can be purchased via the website or the Scotrail app. You can also purchase tickets in stations that either have a ticket office or a ticket machine. If these do not exist at the station you are travelling from, then you can buy your ticket from the conductor who will walk through the train as it travels. If no conductor comes, you may need to buy a ticket at the station if electronic barriers are in operation. In stations with electronic barriers, there will be a possibility to buy a ticket at the barriers.

Tickets for the subway can be purchased at stations. The subway consists of an Inner Circle and an Outer circle. The subways come every few minutes or so. Because it is circular, if you get on the wrong line, you just have to wait longer for your stop to come back round! A full circuit takes around 24 minutes.

4.6 Navigating campus

The **UofG LIFE app** is your one stop shop for getting around campus. You can download this via the Apple Store or Google Play or use the web version. Please see here for details: https://www.gla.ac.uk/myglasgow/uofglife/

The app has a wayfinding feature to help you search for buildings and to get directions from where you are. The '**Near Me**' function will help you locate facilities across the campus such as:

- Bike racks
- Accessible parking
- Accessible toilets
- ATMs
- Baby changing facilities
- Bike racks
- Defibrillators
- Food outlets
- Places to find period products
- Spaces for prayer and reflection
- Retail outlets
- Student support officers
- Showers
- Toilets
- Viewpoints and attractions
- Water fountains

The app can also help you locate study spaces on campus and find out about the occupancy levels at the library. As well as this, you can use the app to keep track of your timetable and library books on loan. It also has a feature that will take you straight to help and advice about student support and wellbeing.

4.7 Student Health

4.7.1 Health Care

The National Health Service (NHS) has developed a student health hub with information about using the NHS while staying in Glasgow.

You **must absolutely make sure** that you have access to your insurance policy, purchased by Stockholm University, before you travel to the UK. Please familiarise yourself with the terms of this policy and take into consideration the specific situations it applies to and consider if you need to buy any extra insurance for any trips that are not covered by that insurance policy.

In Scotland, doctors outside of hospitals are referred to as 'General Practitioners' abbreviated to 'GP'. The GP is usually the first point of contact relating to your health needs. Although some limited help can be provided at some pharmacies. If necessary, a GP can refer you to a specialist. On arrival in Scotland you should register with your local GP. For emergency situations, requiring police, ambulance, or fire brigade you can call 999. This number is only for serious emergencies. You can also call 111 which can provide advice on the phone regarding symptoms and advice on which service you should contact.

For all the information and guidance about accessing health care in the Glasgow, including dentists, please see: https://www.gla.ac.uk/international/support/practicalinformationinternationalstudents/nhs-health-services/

4.7.2 Wellbeing

There are several services available at UofG to help with wellbeing. The below provides an overview of each service and what it offers. Please visit the relevant webpages to find out more.

4.7.2.1 Student Support Officers

Each College at UofG has appointed Student Support Officers. These are staff who are based in the different Schools and Colleges, as well as centrally, and are there to provide a frontline service to students who need support. Please visit https://www.gla.ac.uk/myglasgow/students/supportofficers/ to find out the relevant Student Support Officer to contact in your School or College. The Student Support Officers can help signpost you to other services as well as helping students to resolve short-term issues and difficulties. The range of issues the Student Support Officers can help with are:

- Mental Health and Wellbeing
- Finances
- Accommodation
- Settling in
- Future and career prospects
- University processes
- Study support

4.7.2.2 Counselling and Wellbeing Services

If you are struggling with your mental health, UofG also offers Counselling Services. These comprise of various services. More can be found out about them here:
https://www.gla.ac.uk/myglasgow/counselling/

For anything relating to a **crisis situation** such as a but not limited to:

- Student death
- A student being hospitalized due to a serious illness/mental health crisis
- Student at risk of suicide/in mental health crisis
- Student subject to crime
- Student appears to be missing

Please contact 999 (for police, ambulance, fire brigade) then call campus security via the SafeZone app. Using the SafeZone app will put you in touch with the student crisis team who can assist with enquiries, first aid, or an emergency worldwide. For more information, please visit:
https://www.gla.ac.uk/myglasgow/staff/emergencyandcrisissupport/

The **Peer Wellbeing Support Service** is a peer-to-peer listening service. The service is run by student volunteers who have been trained by three practicing Counsellors. The kinds of issues this service deals with are:

- Loneliness
- Worries about family
- Academic stress
- Reflecting on world issues.

You can access this service here: https://www.gla.ac.uk/myglasgow/studentlisteners/

The UofG **Counselling Service** offers a range of services designed to help those with mild to moderate needs. The service does not diagnose or prescribe and is not a crisis service. You should contact your GP if you require more serious medical assistance and the situation is not critical. The Counselling Service can help with:

- Short term, focused blocks of therapy, subject to assessment
- Wellbeing consultations

- Psychoeducation and group work
- Self-help resources

The kinds of issues the Service deals with are, but not limited to:

- Anxiety and panic
- Ongoing difficulties resulting from bereavement and other types of loss
- Relationship difficulties
- Mild to moderate depression
- Significant life changes
- Self-confidence and self-esteem

More information about the Counselling Service can be found here: https://www.gla.ac.uk/myglasgow/counselling/about%20us/

4.8 Disability Services

UofG offers a wide range of services to help students adapt. In Scotland you have the right to have reasonable adjustments made to enable you to carry out your studies. This could range from services such as help with access on campus, help with assistive technology while studying, and help with exam arrangements. The disability services have an equipment loan bank which can be used to help international disabled students.

To access disability services, you can register to speak with a Disability Officer. The Disability Office provide both online and in-person appointments. It is advised you make an appointment with the Disability Office prior to arriving in Glasgow as this will ensure you can be supported from your arrival on campus.

For information about disability services please see: https://www.gla.ac.uk/myglasgow/disability/

4.9 Safety Off and On Campus

UofG uses the SafeZone app which is a free university run app that is monitored 24 hours a day 7 days a week by the Campus Security team. The app can be used when you are on campus, at your accommodation, or when out in the city. The app has three core buttons that you can trigger. These are:

- The blue button for general enquiries
- The red button for emergencies
- The green button for first aid

There is also a yellow button that will allow you to access wellbeing resources. By triggering one of these services you will be put in touch with someone from the campus security team immediately who will be able to advise. For more information about the SafeZone app and to download it, please visit https://safezoneapp.com/

For more general information on safety, please visit https://www.gla.ac.uk/myglasgow/students/safetyhealth/

4.10 Student organisations

The SRC provides detailed resources for finding out about student organisations while you are in Glasgow. There are currently 300+ SRC affiliated organisations ranging from cultural interests, world events, sports to even groups celebrating Scottish actor David Tennant! For a full list of organisations, please see https://www.glasgowunisrc.org/clubs-socs/find/

While you are study at UofG, you can make the most of a membership at the UofG gym and sporting activities. UofG Sport offers classes, gym access, swimming pool access, and team sports. For more information, please visit https://www.gla.ac.uk/myglasgow/sport/

4.11 Language courses

Lectures at the University of Glasgow are all in English. The University offers 10-weeks language courses University of Glasgow - Study - Short courses - Short language courses in, at least 12 languages. The Student Representative Council (SRC) also organizes 'Conversation Cafe'' (Conversation Café); these are spaces run by student volunteers to help International students to make new friends and brush on their language (English) skills; these meetings are free of charge.

5 Your Semester at Aix-Marseille University (AMU)

5.1 Arrival and welcome activities

AMU organize free integration activities every semester:

https://www.univ-amu.fr/en/public/integration-week

According to status and nationality the student must take care of French government formalities: https://www.univ-amu.fr/en/public/consular-procedures

https://administration-etrangers-en-france.interieur.gouv.fr/particuliers/#/

5.2 Housing

AMU holds a contingent of rooms with CROUS, a state-run public operator. This enables to every exchange students to benefit from accommodation at very competitive rates. AMU's handbook pages 21 et 23:

https://www.univ-amu.fr/en/public/exchange-student-accommodation

5.3 Living expenses

If you need to obtain a visa or a residence permit to continue your studies at AMU, you must be able to prove that you have sufficient resources to support yourself in France. For non-EU students the amount officially required by the French authorities is 615 € per month. This amount will not be enough to cover all of your expenses while you are in France, so we can help you anticipate future expenses : https://www.univ-amu.fr/en/public/cost-living-france

5.4 Student health

AMU's Health Center gives students access, by appointment, to medical consultations, whether for general medicine or gynecology, with no advance payment thanks to full third-party payment. Handbook p.27 et 29

https://www.univ-amu.fr/en/public/consultations-au-centre-de-sante-universitaire (SSE)

https://etudiant-etranger.ameli.fr/# (CPAM)

5.5 Special needs and disability support

Universities are by its very nature, an open, universal institution dedicated to equal rights and opportunities. As a public institution, its mission is to promote the integration and success of every student. In line with these values, it is vital to take on board the issue of disability. Aix-Marseille University is deeply attached to this issue, and is committed to promoting disability.

5.6 Life on Campus

Essential on campus, the Student Life Offices (BVE) welcome and support students from their arrival and throughout their studies. Depending on their needs (financial aid, scholarships, health,

social services, culture, sports…), they provide information and guidance, directing students to various university services or external organizations.

https://www.univ-amu.fr/en/node/10392

AMU is a partner of Jobbaviz, a job search platform, and also offers internal student job opportunities within the university. Handbook p.37 https://www.univ-amu.fr/en/public/student-jobs (SUIO)

5.7 Student organisations

AMU is aware of the interest and importance of student associations, encourages and supports its student associations. Student organisations:

https://www.univ-amu.fr/en/public/student-associations (DVEC)

6 The Master Thesis

You have the possibility to register your Master thesis as a course either at SU, UofG or AMU for the final semester of the programme that take place during the spring semester 2028. The procedure of registration, assessment method and examination follow the local regulations of the university responsible.

6.1 The master thesis at Stockholm University

Students at Stockholm University would register to the course: "Transdisciplinary Studies of Climate, Environment and Energy, Independent Project".

The independent project is 30 ECTS and aims to provide experience and advanced knowledge in scientific and transdisciplinary work within the fields of climate, environment, and/or energy. Key elements include planning, execution, and reporting. Additionally, students will practice literature review, writing a scientific report, and presenting research results orally in seminars.

The course is divided into two parts:

- Part 1: Planning (5 ECTS). Assessment is based on a written report
- Part 2: Implementation (25 ECTS). Assessment is based on an oral and written presentation of the independent project

More information is available in the syllabus of the course.

6.2 The Master's Project at University of Glasgow

Students at University of Glasgow would register for the course: GES (Geographical and Earth Sciences) MSc Project. The Project is 60 credits (30 ECTS)

The aims of the project are:

- To integrate knowledge gained during the programme by applying it to a substantial and intensive project;
- To give experience in preparing a project proposal, including pre-recorded oral presentation.
- To allow students to pursue one particular topic to significantly more depth than possible during the taught part of the course;
- To encourage investigative study and the application of this to a particular task;
- To develop an awareness and experience of a range of quantitative and qualitative research methods and their applicability in different research settings, if appropriate to project
- To give experience in preparing a substantial report on an extended project.

- To give experience is preparing data and products for archiving

Projects may be of three basic types:

- a theoretical / research-oriented project in which some problem is investigated by experimentation or collection of primary data or analysis of a substantial secondary data set;
- an assessment project, in which the suitability or comparability of equipment, software or methodology to a defined task is investigated;
- an application-oriented project in which the client and/or end user's requirements are considered and satisfied by appropriate products.

Assessment:

- Written project proposal 10%; pre-recorded oral proposal presentation 5%
- A major project report covering the aims and outcomes, background, methodology, outcomes and evaluation of the project - 80%.
- Collation of digital data associated with the project, including appropriate metadata - 5%.

6.3 The Master's Project at Aix-Marseille University (AMU)

At Aix Marseille University, the master thesis consists in an independent project in which students develop and apply their knowledge and skills in the professional environment provided by an academic laboratory from Aix Marseille University as well as non-academic partners.

Students complete a 5 to 6-month internship, accounting for 30 ECTS, leading to the writing of a Master thesis and an oral defense. The internship is based on a project proposed by one of the research teams, and should bear a strong transdisciplinary perspective related to Earth sciences and climate, energy and/or environment. To do so, students will be supervised by one or more Faculty members. At the end of the internship, the oral defense will take place in front of a jury composed by the pedagogical team of the Master and volunteers' researchers/lecturers from the laboratory. The final grade will be the combination of the thesis manuscript evaluation and the oral presentation, and will be provided on 20 points grading scale. Finally, the graduation grade takes into account the average (credit-weighted) marks obtained in the examinations of the previous semesters, as well as of the thesis defense.

More information is available at https://masters.osupytheas.fr/formations/master-stpe/

Contact us

Do you have any questions?
Please do not hesitate to contact us!

Responsible office/contact person:
Department of Environmental Science, SU
Email address: tracee@aces.su.se
Telephone number: +46 8 08-16 20 00