



Environmental sciences: theory, field and laboratory workshop

Educational subject description sheet

Basic information

Study programme Geohazards and Climate Change	Didactic cycle 2023/24	
Speciality -	Subject code 07GCCS.22P.02863.23	
Organizational unit Faculty of Geographical and Geological Sciences	Lecture languages English	
Study level Second-cycle programme	Course type Obligatory	
Study form Full-time	Block Basic subjects	
Education profile General academic		
Subject coordinator	Karolina Leszczyńska	
Lecturer	Karolina Leszczyńska	
Period Semester 2	Activities and hours <ul style="list-style-type: none">• Lecture: 15, Exam• Conversatory classes: 5, Graded credit• Field classes: 15, Graded credit• Laboratories: 30, Graded credit• Seminar: 10, Graded credit	Number of ECTS points 6

Goals

Code	Goal
C1	The aim of this course is to familiarize Students with the whole research process, from the stage of desk based literature review and planning of the research project, through selection of appropriate field location, fieldwork, laboratory work, processing of the results, interpretation and discussion and writing up the report. This is hands on-course which includes all the stages of the typical Earth science project i.e. desk, field and laboratory based phases of the research. Student will be familiarized with all routines and pitfalls of the research process.

Subject learning outcomes

Code	Outcomes in terms of	Learning outcomes	Examination methods
Knowledge - Student:			
W1	understands the selected methodological foundations of the research process in Earth sciences.	GCC_K2_W15, GCC_K2_W16, GCC_K2_W17, GCC_K2_W18	Written exam, Project, Report
Skills - Student:			
U1	effectively plans the research process, from the phase of desk-based literature review, through the field and laboratory work to the stage of synthesis, interpretation and discussion;	GCC_K2_U04, GCC_K2_U17	Written exam, Project, Report
U2	organizes the fieldwork in compliance with health and safety regulations;	GCC_K2_U09, GCC_K2_U10	Written exam, Project, Report
U3	organizes the laboratory work in compliance with health and safety regulations;	GCC_K2_U08, GCC_K2_U10	Written exam, Project, Report
U4	synthesizes and writes up the research results in a form of a report, research article or other selected scientific form;	GCC_K2_U03, GCC_K2_U04, GCC_K2_U05, GCC_K2_U06, GCC_K2_U07, GCC_K2_U11, GCC_K2_U14, GCC_K2_U15, GCC_K2_U16	Written exam, Project, Report
U5	cooperates in a group and organizes the work of a group as a leader.	GCC_K2_U17	Written exam, Project, Report

Study content

No.	Course content	Subject learning outcomes	Activities
1.	How to start the research: literature review and hypothesis formulation.	W1, U4	Lecture, Seminar, Conservatory classes
2.	Effective ways of bibliography management: tools, techniques, pitfalls.	W1, U1	Lecture, Seminar, Conservatory classes
3.	Desk-based study before going to the field - selected methods and techniques.	W1, U1	Seminar, Conservatory classes
4.	Fieldwork: planing, selection of site, permissions, preparation, health and safety.	W1, U2, U5	Lecture, Seminar, Conservatory classes
5.	Fieldwork - selected methods and techniques.	W1, U2	Seminar, Field classes
6.	What is something goes wrong? Case study of successful and unsuccessful fieldwork campaigns. Fieldwork crisis management.	U2, U5	Seminar, Conservatory classes, Field classes
7.	Laboratory stage of the research - organization and health and safety. Selected methods and techniques.	W1, U3	Seminar, Laboratories
8.	Happy end - how to wrap-up and write up your research.	W1, U1, U4	Seminar, Conservatory classes

Additional information

Activities	Teaching and learning methods and activities
Lecture	Lecture with a multimedia presentation of selected issues, Conversation lecture
Conversatory classes	Conversation lecture, Project method
Field classes	Project method
Laboratories	Laboratory method
Seminar	Workshop method, Work in groups

Activities	Credit conditions
Lecture	The final grade is the result obtained from the exam in 100%. Grading scale: 1. very good (5.0) - from 90% of points, 2. good plus (4.5) - from 80% of points, 3. good (4.0) - from 70% of points, 4. sufficient plus (3.5) - from 60% of points, 5. satisfactory (3.0) - from 50% of points, 6. unsatisfactory (2.0) - below 50% of points.
Conversatory classes	The final grade is the result obtained from the written project in 70%. 30% of grade comes from active participation in classes and conversation. Grading scale: 1. very good (5.0) - from 90% of points, 2. good plus (4.5) - from 80% of points, 3. good (4.0) - from 70% of points, 4. sufficient plus (3.5) - from 60% of points, 5. satisfactory (3.0) - from 50% of points, 6. unsatisfactory (2.0) - below 50% of points.
Field classes	The final grade is the result obtained from the project in 100%. Grading scale: 1. very good (5.0) - from 90% of points, 2. good plus (4.5) - from 80% of points, 3. good (4.0) - from 70% of points, 4. sufficient plus (3.5) - from 60% of points, 5. satisfactory (3.0) - from 50% of points, 6. unsatisfactory (2.0) - below 50% of points.
Laboratories	The final grade is the result obtained from the written report in 100%. Grading scale: 1. very good (5.0) - from 90% of points, 2. good plus (4.5) - from 80% of points, 3. good (4.0) - from 70% of points, 4. sufficient plus (3.5) - from 60% of points, 5. satisfactory (3.0) - from 50% of points, 6. unsatisfactory (2.0) - below 50% of points.
Seminar	The final grade is the result obtained from the written report in 100%. Grading scale: 1. very good (5.0) - from 90% of points, 2. good plus (4.5) - from 80% of points, 3. good (4.0) - from 70% of points, 4. sufficient plus (3.5) - from 60% of points, 5. satisfactory (3.0) - from 50% of points, 6. unsatisfactory (2.0) - below 50% of points.

Literature

Obligatory

1. Schumm, S. A. 1998. To Interpret the Earth: Ten Ways to Be Wrong. 3rd edition, Cambridge University Press
2. Berglund, B. E. 1986. Handbook of Holocene palaeoecology and palaeohydrology. Wiley and Sons (selected fragments)

Optional

1. Tucker, F. & Horton. 2018. "The show must go on!" Fieldwork, mental health and wellbeing in Geography, Earth and Environmental Sciences. AREA Royal Geographical Society, DOI: 10.1111/area.12437
2. Tucker, M. E. 2011. Sedimentary rocks in the field. A practical guide. 4th edition, Wiley

Calculation of ECTS points

Activities	Activity hours*
Lecture	15
Conversatory classes	5
Field classes	15
Laboratories	30
Seminar	10
Reading the indicated literature	10
Preparation for the assessment	10
Preparation for classes	20
Preparation of a project	15
Report preparation	30
Student workload	Hours 160
Number of ECTS points	ECTS 6

* academic hour = 45 minutes

Efekty uczenia się dla kierunku

Kod	Treść
GCC_K2_U03	The graduate can conclude based on the data and information from various sources and geographical and environmental information
GCC_K2_U04	The graduate can formulate the research hypotheses and conduct environmental research: to plan, to manage and to document
GCC_K2_U05	The graduate can an extended degree use the scientific terminology and vocabulary, read the advanced scientific literature with understanding
GCC_K2_U06	The graduate can critically assess the sources of information on climate and environmental change and associated geohazards
GCC_K2_U07	The graduate can look for and select the necessary information from the scientific literature and other written sources and based on that learn and continuously update the knowledge throughout the life
GCC_K2_U08	The graduate can apply advanced laboratory methods and techniques used for environmental research
GCC_K2_U09	The graduate can apply advanced fieldwork methods and techniques used for environmental research
GCC_K2_U10	The graduate can apply health and safety rules and regulations in the office, in the laboratory and in the field
GCC_K2_U11	The graduate can apply mathematical and statistical methods for analysis, interpretation and visualization of the environmental data
GCC_K2_U14	The graduate can describe in extended degree environmental components and their relationships
GCC_K2_U15	The graduate can develop in writing scientific problem associated with the climate change and geohazards
GCC_K2_U16	The graduate can transparently and accessibly present the Earth and environmental sciences topics
GCC_K2_U17	The graduate can cooperate in the team, efficiently plan the work for her/himself and the research/task team
GCC_K2_W15	The graduate knows and understands advanced vocabulary associated with climate change, natural environment and geohazards
GCC_K2_W16	The graduate knows and understands thoroughly, the rules and regulations associated with protection of intellectual property and copyrights
GCC_K2_W17	The graduate knows and understands thoroughly, the literature in the field of climate change, geohazards as well as basic environmental and social research
GCC_K2_W18	The graduate knows and understands thoroughly, the most up to date trends in science and implementation of the newest scientific achievements in studies field