Geohazards assessment
Educational subject description sheet

Basic information

Study programme Geohazards and Climate Change	**Didactic cycle** 2023/24
Speciality -	**Subject code** 07GCCS.24P.03747.23
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	Witold Szczuciński

Lecturer	Witold Szczuciński, Krzysztof Pleskot, Karolina Leszczyńska

Period	Activities and hours	Number of ECTS points
Semester 3	• Lecture: 15, Exam • Laboratories: 15, Graded credit	4

Goals

Code	Goal
C1	To introduce the fundamental concepts of hazard assessment.
C2	To present various techniques of geohazards assessment based on geological, historical and modeling data as well as on monitoring.
C3	To show applications of geohazard assessment - limitations and application problems.

Entry requirements

Fundamental knowlede on geohazards and Earth system processes.

Subject learning outcomes

Code	Outcomes in terms of	Learning outcomes	Examination methods
Knowledge – Student:			
W1	knows the fundamental concepts of hazard assessment and the basic definitions;	GCC_K2_W03, GCC_K2_W05, GCC_K2_W08, GCC_K2_W10, GCC_K2_W15	Written exam
W2	understands the methodology of geohazard assessment using various types of input data.	GCC_K2_W05, GCC_K2_W08, GCC_K2_W09	Written exam, Test
Skills – Student:			
U1	recognizes the limitations of geohazard assessment related to various methodologies and geohazards.	GCC_K2_U03, GCC_K2_U06, GCC_K2_U12, GCC_K2_U13	Written exam, Test
Social competences – Student:			
K1	is prepared to educate non-academic audience on socioeconomic importance of the geohazards assessment and is willing to share the knowledge with society.	GCC_K2_K02, GCC_K2_K03	Written exam, Test

Study content

No.	Course content	Subject learning outcomes	Activities
1.	Presentation of basic concepts and definitions related to hazard assessment.	W1	Lecture
2.	Explanation of various methodologies in geohazard assessment, depending to various input data sources (geological, historical, modeling) and type of geohazard.	W2, K1	Lecture, Laboratories
3.	Description of adavtages and limitations of various hazard assessment approaches and their implementation problems.	W2, U1, K1	Lecture, Laboratories

Additional information

Activities	Teaching and learning methods and activities
Lecture	Lecture with a multimedia presentation of selected issues, Case study, Problem-based learning
Laboratories	Discussion, Case study, Problem-based learning

Activities	Credit conditions
Lecture	The final grade is the result obtained from the written exam. 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 test. 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. Crawley F., 2020. A Guide to Hazard Identification Methods. Elsevier, ISBN 978-0-12-819543-7.

Optional

1. Edward Keller, Duane DeVecchio, 2019. Natural Hazards. Earth's Processes as Hazards, Disasters, and Catastrophes. Routledge, 5th Edition, 664 p., ISBN 9781138057227.

Calculation of ECTS points

Activities	Activity hours*
Lecture	15
Laboratories	15
Preparation for classes	10
Reading the indicated literature	10
Preparation for the assessment	20
Preparation for the exam	40
Student workload	**Hours** 110
Number of ECTS points	**ECTS** 4

* academic hour = 45 minutes

Efekty uczenia się dla kierunku

Kod	Treść
GCC_K2_K02	The graduate is ready to identify the influence of environmental processes onto the socio-economic processes, and also influence of anthropogenic activities onto the various components of the natural environment in various timescales
GCC_K2_K03	The graduate is ready to communicate, discuss and argue burning issues, hazards and problems associated with the climate, climate and environment changes for wider, non-scientific audience
GCC_K2_U03	The graduate can conclude based on the data and information from various sources and geographical and environmental information
GCC_K2_U06	The graduate can critically assess the sources of information on climate and environmental change and associated geohazards
GCC_K2_U12	The graduate can apply qualitative methods for solving the human-environment conflicts
GCC_K2_U13	The graduate can use in practice the environmental management principles leading to improvement of quality of life
GCC_K2_W03	The graduate knows and understands thoroughly, endogenic processes, anthropogenic influence on endogenic processes and following from them geohazards
GCC_K2_W05	The graduate knows and understands thoroughly, the causes and the evolution of extreme hydro-meteorological events in global, regional and local scale and their influence on the socio-economical processes
GCC_K2_W08	The graduate knows and understands thoroughly, the influence of the climate change, extreme environmental events and geohazards on the socio-economic processes
GCC_K2_W09	The graduate knows and understands thoroughly, relationship between climate and environmental change and necessity of formulation of the adaptation strategies
GCC_K2_W10	The graduate knows and understands thoroughly, the statistical and mathematical tools and methods necessary for the description and interpretation of environmental processes and forecasting environmental changes
GCC_K2_W15	The graduate knows and understands advanced vocabulary associated with climate change, natural environment and geohazards