

Environmental and social effects of natural disasters

Educational subject description sheet

Basic information

Study programme Geohazards and Climate Change Speciality - Organizational unit Faculty of Geographical and Geological Sciences Study level Second-cycle programme Study form Full-time Education profile General academic		Didactic cycle 2023/24 Subject code 07GCCS.22P.02867.23 Lecture languages English Course type Elective Block Basic subjects
Subject coordinator	Marcin Słowik	
Lecturer	Marcin Słowik	
Period Semester 2	Activities and hours • Lecture: 15, Graded credit	Number of ECTS points 2

Goals

Code	Goal
C1	Providing students with knowledge in the field of types of natural disasters.
C2	Discussing the effects of the natural disasters on the evolution of environment (examples of changes taking place in fluvial, montane, aeolian and littoral environments).
C3	Presentation of the influence of natural disasters on economy and the standard of living. Showing examples of mitigating the effects of natural disasters.

Entry requirements

Basic knowledge regarding geology and geomorphology.

Subject learning outcomes

Code	Outcomes in terms of	Learning outcomes	Examination methods
Knowledge - Student:			
W1	knows the processes operating in the natural environment, their causes, mechanisms, consequences and associated geohazards;	GCC_K2_W01	Test
W2	understands and is able to explain complex socio-economic processes in the local, regional and global scale and their influence on the occurrence of extreme environmental events;	GCC_K2_W07	Test
W3	understands the influence of the climate change, extreme environmental events and geohazards on the socio-economic processes;	GCC_K2_W08	Test
W4	understands relationship between climate and environmental change and necessity of formulation of the adaptation strategies;	GCC_K2_W09	Test
W5	knows advanced vocabulary associated with climate change, natural environment and geohazards;	GCC_K2_W15	Test
W6	knows the literature in the field of climate change, geohazards as well as basic environmental and social research;	GCC_K2_W17	Test
W7	knows the most up to date trends in science and implementation of the newest scientific achievements in studies field.	GCC_K2_W18	Test
Skills - Student:			
U1	to an extended degree uses the scientific terminology and vocabulary, read the advanced scientific literature with understanding;	GCC_K2_U05	Test
U2	describes in an extended degree environmental components and their relationship.	GCC_K2_U14	Test
Social competences - Student:			
K1	is prepared to implement and to popularize actions serving the environmental protection;	GCC_K2_K01	Test
K2	is prepared 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_K02	Test
K3	is prepared to undertake the cooperation within the crisis management teams and solve the conflicts.	GCC_K2_K07	Test

Study content

No.	Course content	Subject learning outcomes	Activities
1.	Discussing the main types of natural disasters (earthquakes, tsunamis, floods, mass movements, droughts, hurricanes).	W1, W5, W6, W7, U1	Lecture
2.	The effects of natural disasters on the evolution of environment (examples of reactions of rivers and coasts to natural disasters, e.g. the formation of river avulsions, river bed incision as a reaction to series of intensive floods, coastal erosion as the effect of sea storms, sea level rise and sediment deficit).	W1, W5, W6, W7, U2	Lecture
3.	The effects of natural disasters on the evolution of environment – continued (examples of reactions of montane and aeolian environments to natural disasters, e.g. effects of increase in climate humidity on the intensity of mass movements in montane areas).	W1, W5, W6, W7, U2	Lecture
4.	The influence of natural disasters on economy of selected countries (examples of effects of earthquakes, floods and hurricanes on the economy of e.g. the Caribbean and Andean countries). Discussing examples of cities situated in areas of the occurrence of natural hazards (e.g. volcano eruption, sea level rise).	W2, W3, W5, W6, U1, K1, K2, K3	Lecture
5.	Mitigating the effects of natural disasters (examples of precautions and engineering solutions taken by cities and regions affected and/or endangered by the occurrence of e.g. earthquakes, floods, sea level rise).	W2, W3, W4, W5, W6, U1, K1, K2, K3	Lecture

Additional information

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

Activities	Credit conditions
Lecture	The final grade consists in 100% of the grade obtained during the 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. McCall G.J.H., Laming D.J.C., Scott S.C., 1992, Geohazards: natural and man-made. Chapman & Hall, London, pp. 227.

Optional

1. Berrebi C., Karlinsky A., Yonah H., 2020, Individual and community behavioral responses to natural disasters. Natural Hazards, 105, 1541-1569.

Calculation of ECTS points

Activities	Activity hours*
Lecture	15
Reading the indicated literature	10
Preparation for the assessment	30
Student workload	Hours 55
Number of ECTS points	ECTS 2

* academic hour = 45 minutes

Efekty uczenia się dla kierunku

Kod	Treść
GCC_K2_K01	The graduate is ready to implement and popularize actions serving the environmental protection
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_K07	The graduate is ready to undertake the cooperation within the crisis management teams and solve the conflicts
GCC_K2_U05	The graduate can an extended degree use the scientific terminology and vocabulary, read the advanced scientific literature with understanding
GCC_K2_U14	The graduate can describe in extended degree environmental components and their relationships
GCC_K2_W01	The graduate knows and understands thoroughly, the processes operating in the natural environment, their causes, mechanisms, consequences and associated geohazards
GCC_K2_W07	The graduate knows and understands thoroughly complex socio-economic processes in the local, regional and global scale and their influence on the occurrence of extreme environmental events
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_W15	The graduate knows and understands advanced vocabulary associated with climate change, natural environment and geohazards
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