UNIWERSYTET IM. ADAMA MICKIEWICZA W POZNANIU

Changes in plant cover in the Holocene

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** 2024/25 **Subject code** 07GCCS.22P.05180.24 **Lecture languages** English **Course type** Elective **Block** Basic subjects

Subject coordinator	Krystyna Milecka
Lecturer	Krystyna Milecka

Period	**Activities and hours**	**Number of ECTS points**
Semester 2	• Lecture: 15, Graded credit	2

Goals

Code	Goal
C1	The aim of the course is to teach Student how to holisticaly understand natural and anthropogenic processes in biosphere.
C2	Another aim of the course is to teach to understand the hitorical, natural and anthropogenic factors influencing contemporary changes in nature.

Subject learning outcomes

Code	Outcomes in terms of	Learning outcomes	Examination methods
Knowledge – Student:			
W1	knows possibilities of palaeoecological methods, their meaning in paleogeographical, geological, historical and archeological researches, special significance of pollen analysis, its advantages, limitations and fundamentals of interpretation;	GCC_K2_W01, GCC_K2_W06	Oral colloquium
W2	knows basic rules of other paleoecological methods, e.g. plant macrofossils, diatoms, Cladocera, their complementary use;	GCC_K2_W01, GCC_K2_W06, GCC_K2_W11, GCC_K2_W12, GCC_K2_W14	Oral colloquium
W3	knows methods of dating: radiometric (C14), laminated sediments, dendrochronology;	GCC_K2_W11	Oral colloquium
W4	knows vegetation history of the late glacial and Holocene succession in Central Europe.	GCC_K2_W01, GCC_K2_W06, GCC_K2_W15, GCC_K2_W17, GCC_K2_W18	Oral colloquium
Skills – Student:			
U1	describes and interprets pollen diagram, use bioindicative value of particular taxa to discuss vegetation changes and their reasons, climatic and habitat factors, human activity and its influence on plant communities.	GCC_K2_U02, GCC_K2_U03, GCC_K2_U08, GCC_K2_U09, GCC_K2_U10, GCC_K2_U14	Oral colloquium

Study content

No.	Course content	Subject learning outcomes	Activities
1.	The subject of paleoecological research. What for we do it?	W1, W2	Lecture
2.	Pollen analysis – the basic method of the reconstruction of paleoenvironmental conditions and ecosystems.	W1, W2, W3, U1	Lecture
3.	Other paleoecological methods, features, limits and advantages.	W1, W2, W3, U1	Lecture
4.	Chronological methods in relation to vegetation succession.	W3	Lecture
5.	Vegetation history during the late glacial and Holocene based on some exemplary sites.	W4, U1	Lecture
6.	Detailed interpretation of pollen diagram: vegetation succession, regional and local differences, human impact, significance of bioindicators.	W1, W4, U1	Lecture

Additional information

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

Activities	Credit conditions
Lecture	The final grade is in 100% based on oral colloqium at the end of the course. Students will obtain the list of possible questions. During the oral colloquium they will be obliged to answer 3 of them, each question for 6 points. Grading scale: 1. very good (5.0) - 17-18 points, at least 89%, 2. good plus (4.5) - 16 of points, above 84% 3. good (4.0) - 14-15 points, above 72% 4. sufficient plus (3.5) - 13 points, above 67% 5. satisfactory (3.0) - 11-12 points, above 55% 6. unsatisfactory (2.0) - below 11 points, 55%.

Literature

Obligatory

1. Ralska-Jasiewiczowa, M., Goslar, T., Madeyska, T., Starkel, L. (eds). 1998. "Lake Gościąż Central Poland. A monographic study. W. Szafer Institute of Botany, Polish Academy of Science.
2. Ralska-Jasiewiczowa, M (ed). 2004. "Late Glacial and Holocene history of vegetation in Poland based on isopollen maps." W. Szafer Institute of Botany, Polish Academy of Science.

Calculation of ECTS points

Activities	Activity hours*
Lecture	15
Reading the indicated literature	10
Preparation for the assessment	20
Preparation for classes	10
Student workload	**Hours** 55
Number of ECTS points	**ECTS** 2

* academic hour = 45 minutes

Efekty uczenia się dla kierunku

Kod	Treść
GCC_K2_U02	The graduate can critically assess future climate change scenarios and associated environmental changes and geohazards
GCC_K2_U03	The graduate can conclude based on the data and information from various sources and geographical and environmental information
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_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_W06	The graduate knows and understands thoroughly climatic changeability in various time-scales (yearly, decadal, centennial and millennial) and its causes
GCC_K2_W11	The graduate knows and understands advanced laboratory methods and techniques used in the research on the elements of the environment and the environmental processes
GCC_K2_W12	The graduate knows and understands advanced field methods and techniques used in environmental studies
GCC_K2_W14	The graduate knows and understands thoroughly, laboratory and field health and safety rules and regulations
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