

DESCRIPTION OF THE COURSE OF STUDY

Course code	0532.6.GEO1.B/C.SIG	
Name of the course in	Polish	<i>Systemy informacji geograficznej</i>
	English	<i>Geographic Information Systems</i>

1. LOCATION OF THE COURSE OF STUDY WITHIN THE SYSTEM OF STUDIES

1.1. Field of study	Geography
1.2. Mode of study	stationary / extramural
1.3. Level of study	First - Bachelor's Degree
1.4. Profile of study*	general academic
1.5. Person/s preparing the course description	Grzegorz Walek PhD
1.6. Contact	grzegorz.walek@ujk.edu.pl, tel. 41-349-64-09

2. GENERAL CHARACTERISTICS OF THE COURSE OF STUDY

2.1. Language of instruction	Polish
2.2. Prerequisites*	Basic computer skills

3. DETAILED CHARACTERISTICS OF THE COURSE OF STUDY

3.1. Form of classes	Lecture, laboratory
3.2. Place of classes	Classes in the classrooms of the Jan Kochanowski University
3.3. Form of assessment	Credit with grade
3.4. Teaching methods	Lecture, and with the use of a computer: blended learning (work with the software with the support of the teacher, tasks to be solved), demonstration, discussion.
3.5. Bibliography	Required reading
	Further reading
E-learning	https://zhig.ujk.edu.pl/sig/lab_e-learning/e-learning_lab1.pdf https://zhig.ujk.edu.pl/sig/lab_e-learning/e-learning_lab2.pdf https://zhig.ujk.edu.pl/sig/lab_e-learning/e-learning_lab3.pdf https://zhig.ujk.edu.pl/sig/lab_e-learning/e-learning_lab4.pdf https://zhig.ujk.edu.pl/sig/lab_e-learning/el_lab3_tabela_klasyfikacyjna.pdf http://www.codgik.gov.pl/index.php/darmowe-dane/bdo250gis.html http://www.codgik.gov.pl/index.php/darmowe-dane/nmt-100.html

4. OBJECTIVES, SYLLABUS CONTENT AND INTENDED LEARNING OUTCOMES

<p>4.1. Course objectives (including form of classes)</p> <p>C1. Gaining elementary knowledge about geographic information systems and the possibilities of their application.</p> <p>C2. Gaining knowledge about the sources of digital spatial data and methods of their acquisition.</p> <p>C3. Providing students with practical skills to conduct basic spatial analyzes with the use of GIS and digital spatial data sets.</p> <p>C4. Providing students with practical skills to make maps and other graphic presentations with the use of GIS and digital spatial data.</p>
<p>4.2. Detailed syllabus (including form of classes)</p> <p>Lectures:</p> <ol style="list-style-type: none"> 1. Geographic information systems - introduction 2. GIS data models 3. Sources of spatial data

4. Coordinate systems
5. Organization and management of spatial data
6. Attributes of spatial data
7. Spatial analyzes - overlay analysis (for vector models)
8. Spatial analysis - map algebra (concerning raster models)
9. Spatial analysis - geocoding and network analysis
10. Model builder - application and examples of complex analytical procedures
11. Digital cartography in GIS, WebGIS (including e-learning)

Lab:

1. Introduction to the QGIS program (2h)
2. Basic models of spatial data (2h)
3. Vector model - screen vectorization (2h)
4. Raster model - DTM, NMPT, density maps (2h)
5. Sources of spatial data (2h)
6. Selected data management tools (2h)
7. Attributes table (2h)
8. Field calculator (2h)
9. Spatial analyzes (2h)

E-learning:

1. Coordinate systems (2h)
https://zhig.ujk.edu.pl/sig/lab_e-learning/e-learning_lab1.pdf
2. Georeference (2h)
https://zhig.ujk.edu.pl/sig/lab_e-learning/e-learning_lab2.pdf
3. Symbolization of spatial data (4h)
https://zhig.ujk.edu.pl/sig/lab_e-learning/e-learning_lab3.pdf
<http://www.codgik.gov.pl/index.php/darmowe-dane/bdo250gis.html>
<http://www.codgik.gov.pl/index.php/darmowe-dane/nmt-100.html>
https://zhig.ujk.edu.pl/sig/lab_e-learning/el_lab3_tabela_klżacyjna.pdf
4. Composition of maps and visualization (4h)
https://zhig.ujk.edu.pl/sig/lab_e-learning/e-learning_lab4.pdf

4.3 Intended learning outcomes

Code	A student, who passed the course	Relation to learning outcomes
within the scope of KNOWLEDGE:		
W01	describes the essence of geographic information systems (GIS) and their use in particular geographic disciplines	GEO1A_W04
W02	describes the possibilities of GIS software in the field of acquiring and processing spatial information concerning individual components of the natural environment	GEO1A_W06
within the scope of ABILITIES:		
U01	uses selected GIS programs, including the use of appropriate input and verification procedures for input data, processes and edits spatial databases, performs spatial and attribute queries and analyzes of spatial data using map algebra and geoprocessing tools	GEO1A_U01
U02	uses available sources of information in the form of cartographic and statistical text and analyzes and visualizes them with the use of GIS	GEO1A_U03
within the scope of SOCIAL COMPETENCE:		
K01	recognizes the importance of geographic information systems as a tool of contemporary geography and critically evaluates spatial information from various sources	GEO1A_K03

4.4. Methods of assessment of the intended learning outcomes

Teaching outcomes (code)	Method of assessment (+/-)																				
	Exam oral/written*			Test*			Project*			Effort in class*			Self-study*			Group work*		Others* e.g. standardized test used in e-learning			
	Form of classes			Form of classes			Form of classes			Form of classes			Form of classes			Form of classes					
	L	C	...	L	C	...	L	C	...	L	C	E	L	C	E	L	C	...	L	C	..
W01				X										X							
W02				X							X										
U01				X				X		X	X		X	X							
U02				X				X		X	X		X	X							

Accepted for execution (date and legible signatures of the teachers running the course in the given academic year)

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