



MODULE DESCRIPTION

Module code	full-time studies:	Z-ZIP1-E-702b
	part-time studies:	Z-ZIPN1-E-702b
Module name	Spatial Information Systems	
Module name in Polish	Systemy informacji przestrzennej	
Valid from academic year	2019/2020	

MODULE PLACEMENT IN THE SYLLABUS

Field of study	MANAGEMENT AND PRODUCTION ENGINEERING
Level of education	1st degree
Studies profile	General
Form and method of conducting classes	Full-time and Part-time
Specialisation	All
Unit conducting the module	Department of Production Engineering
Module co-ordinator	Małgorzata Sokała, PhD
Approved by:	Dariusz Bojczuk, PhD, DSc

MODULE OVERVIEW

Type of subject / group of subjects	Major
Module status	Non-compulsory
Language of conducting classes	English
Module placement in the syllabus - semester	Semester VII
Initial requirements	No requirements
Examination (YES/NO)	NO
Number of ECTS credit points	1

Method of conducting classes		Lecture	Classes	Laboratory	Project	Other
Per semester	full-time studies:	15				
	part-time studies:	9				

TEACHING RESULTS AND THE METHODS OF ASSESSING TEACHING RESULTS

Category	Symbol	Learning outcomes	Assignations to the directional learning outcomes
Knowledge	W01	A student has knowledge of the basics of spatial information systems, their classification, functions and features.	ZIP1_W01 ZIP1_W05
	W02	Has knowledge of various data models, their geometric properties, coordinate systems, time characteristics, topological relationships, and descriptive attributes that identify and define basic data properties.	ZIP1_W01 ZIP1_W05
	W03	Has knowledge of data sources within the spatial information infrastructure and methods of their acquisition.	ZIP1_W08
	W04	He knows the selected methods of exploration and analysis of spatial data necessary to solve problems in the field of economics and management.	ZIP1_W01 ZIP1_W05

TEACHING CONTENTS

Method of conducting classes	Teaching contents
Lecture	<p>Introduction to spatial information systems - basic definitions, classifications, functions and features of the systems.</p> <p>Models of systems. Relational system, object-oriented system, object-relational system.</p> <p>Models of spatial data. Visualization of spatial data.</p> <p>Sources and methods of acquiring spatial data. Quality of spatial data.</p> <p>Infrastructure of spatial information systems. INSPIRE directive. Standards for the exchange of geoinformation data. Metadata. National system of spatial information.</p> <p>Regional spatial information systems.</p> <p>Selected methods of exploration and analysis of spatial data.</p>

METHODS OF ASSESSING TEACHING RESULTS

Symbol	Methods of checking the learning outcomes (select X)					
	Oral exam	Written exam	Test	Project	Statement	Other
W01			X			
W02			X			
W03			X			
W04			X			

FORM AND CONDITIONS OF PASSING

Form of classes	Form of credit	Passing conditions
Lecture	Credit with grade	Obtaining at least 50% of the points in the colloquium in the form of a test.

STUDENT WORKLOAD

Balance of ECTS points												
No.	Type of student's activity	Student's workload										Unit
		full-time					part-time					
		Lc	C	Lb	P	O	Lc	C	Lb	P	O	
1.	Participation in the activities	15					9					h
2.	Other (consultation, exam)	2					2					h
3.	Number of hours of a student's as- sisted work	17					11					h
4.	Number of ECTS credit points which are allocated for assisted work	0,7					0,4					ECTS
5.	Number of hours of a student's un- assisted work	8					14					h
6.	Number of ECTS credit points which a student receives for unassisted work	0,3					0,6					ECTS
7.	Work input connected with practical classes	0					0					h
8.	Number of ECTS credit points which a student receives for practical classes	0,0					0,0					ECTS
9.	Total number of hours of a stu- dent's work	25					25					h
10.	Punkty ECTS za modul <i>1 ECTS=25 hours</i>	1										ECTS

LITERATURE

1. https://unstats.un.org/unsd/publication/SeriesF/SeriesF_79E.pdf
2. https://www.academia.edu/42329737/Geographic_Information_System_GIS_Definition_Development_Applications_and_Components
3. <https://www.spatialanalysisonline.com/HTML/index.html>
4. <https://qgis.org/en/site/>
5. <https://www.earthdata.nasa.gov/esds>
6. <https://www.spatialanalysisonline.com/>
7. <https://www.geoportal.gov.pl/en/>