UNIVERSITY OF WARMIA AND MAZURY IN OLSZTYN

Faculty of Geoengineering

Course title: INFORMATION TECHNOLOGIES IN LAND MANAGEMENT

ECTS credit allocation (and other scores): 3

Semester: autumn

Level of study: ISCED-7 - second-cycle programmes (EQF-7)

Branch of science: Social sciences

Language: English

Number of hours per semester: 30

Course coordinator/ Department and e-mail: mgr inż. Mateusz Ciski/ Institute of Geography and Land Management; mateusz.ciski@uwm.edu.pl

Type of classes: classes

Substantive content

CLASSES: Ability to work in the cloud, edit text, work in a spreadsheet program, work in MsPublisher, create a website and multimedia presentations. The ability to create maps in ArcGis and MapInfo using various symbolization techniques. Content in the form of computer classes: conversion of models and formats of vector and raster data, work in various spatial reference systems; methods of transformation and its accuracy, database design, spatial analysis using spatial statistics methods

LECTURES: The lectures cover issues related to the use of modern information technologies in spatial management. Geographical data models - data structure, spatial reference, file formats in GIS, databases – types, GeoDBMS. SQL language; logical structure of geographical databases, advantages and limitations of spatial analysis methods; basics of spatial statistics, geocoding, geographic data infrastructure - concepts, problems, implementation; accepted technological, organizational and legal solutions; geographical information system in Poland; organizational and functional structure, examples of applications; legal aspects as well as the use of Microsoft Office and programming languages to develop a website.

Learning purpose: The purpose of the classes is to familiarize the student with selected methods and tools used in spatial management and real estate management. The main purpose of this part of the course is to develop the ability to properly use the ArcGIS program options to solve specific tasks and problems.

On completion of the study programme the graduate will gain:

Knowledge: The student knows the most important sources of geographical information as well as models and formats for spatial data. The student has knowledge about information technologies and legal regulations in force in the European Union regarding their implementation in the form of spatial data infrastructure

Skills: The student knows the selected methods and description tools, including data acquisition techniques and systemic modeling of social structures in spatial and real estate management, the student is able to use basic tools, research methods and information technologies to describe phenomena and processes in spatial management and real estate economy in a systemic approach

Social Competencies: The student demonstrates an active attitude to implement specific tasks, is aware of the complexity and interdisciplinary issues of spatial management and understands the non-technical effects of engineering activities, including its impact on the economy, the environment and society

Basic literature: 1) Longley P. A., Goodchild M. F., Maguire D. J., Rhind D. W., Teoria i praktyka w GIS , wyd. PWN, Warszawa, 2006 , s. 2000; 2) Urbański J., Zrozumieć GIS. Analiza informacji przestrzennej , wyd. PWN, Warszawa,

1997

Supplementary literature: 1) Czyżowski B, Praktyczny przewodnik po GIS. ArcView 3.3, wyd. PWN, Warszawa, 2006 , s. 200; 2) Ogryzek M. , Interdyscyplinarny charakter technologii GIS, wyd. Tesxter Warszawa, 2015

The allocated number of ECTS points consists of:

Contact hours with an academic teacher: 1

Student's independent work: 2