
Course title: INFORMATION TECHNOLOGIES IN LAND MANAGEMENT

ECTS credit allocation (and other scores): 3

Semester: autumn

Level of study: ISCED-6 - first-cycle programmes (EQF-6)

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;
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Type of classes: classes

Substantive content

CLASSES: Ability to work in the cloud, editing text in Microsoft Word, working in a Microsoft Excel spreadsheet, creating a website, and a multimedia presentation in Microsoft PowerPoint. The ability to create maps in ArcGIS software 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; georeferencing.

LECTURES: The lectures covers issues related to the use of modern information technologies in spatial management. Content provided in the form of lectures: geographic data models - data structure, formats of spatial reference system in GIS, databases, SQL language; logical structure of geographical databases, advantages and limitations of spatial analysis methods; basics of spatial statistics, geographic data infrastructure - concepts, problems, implementation; accepted technological, organizational and legal solutions; geographical information system in Poland; examples of applications of Microsoft Office.

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 classes is to develop the skills of proper use of ArcGIS software and Microsoft Office to solve specific tasks and problems.

On completion of the study programme the graduate will gain:

Knowledge: student knows the basic methods, techniques, tools and materials used to solve simple engineering tasks in the field of spatial planning and engineering

Skills: student is able to assess the usefulness of basic methods and tools to solve practical engineering tasks, and choose and apply appropriate methods and tools to mitigate the effects of spatial conflicts

Social Competencies: student is aware of the importance and understands the non-technical aspects and effects of engineering activities, including its impact on space and the natural environment, and the associated responsibility for their decisions

Basic literature: 1) Longley P. A., Goodchild M. F., Maguire D. J., Rhind D. W., 1) Longley P. A., Goodchild M. F., Maguire D. J., Rhind D. W., 2006 r., "GIS. Teoria i praktyka", wyd. PWN, Warszawa, s. 200, 2) Urbański J., 1997 r., "Zrozumieć GIS. Analiza informacji przestrzennej", wyd. PWN, Warszawa, s. 200, 3) Czyżowski B., 2006 r., "Praktyczny przewodnik po GIS. ArcView 3.3", wyd. PWN, Warszawa, s. 200, 4) Ogryzek M., Kosiński K., Sowiński P., Solanowska-Ratajczak E., Jakubczak M., Szubski M., Cichulska A., 2015 r., "Technologia GIS w gospodarowaniu i analizach przestrzennych", wyd. Texter, Warszawa, s. 117., wyd. PWN, Warszawa,, 2006 ; 5) Urbański J., Zrozumieć GIS. Analiza



informacji przestrzennej, wyd. PWN, Warszawa, 1997 ; 6) Czyżowski B., Praktyczny przewodnik po GIS. ArcView 3.3, wyd. PWN, Warszawa, 2006 ; 7) Ogryzek M. i inni, Technologia GIS w gospodarowaniu i analizach przestrzennych, wyd. Texter, Warszawa, 2015.

Supplementary literature: 1) Gotlib D., Iwaniak A., Olszewski R., GIS obszary zastosowań, wyd. PWN, 2007 , s. 160; 2) Litwin L., Myrda G., Systemy Informacji Geograficznej. Zarządzanie danymi przestrzennymi w GIS, SIP, SIT, wyd. Helion, 2008 , s. 200.

The allocated number of ECTS points consists of:

Contact hours with an academic teacher: 2

Student's independent work: 1