



Syllabus « GIS in cadastral systems»

Educational-qualification level - Master
Specialty 193. Geodesy and Land Management
Educational program «Geodesy and Land management»
Year of study 2, **semester** 3
Mode of study: full
ECTS hours – 4,0
Language: English

Instructor

Contacts

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eLearn webpage

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Course Overview:

Discipline «GIS in cadastral systems» provides the ability to use program-technical complex in land cadaster and land management for automated, storage, display, analysis and modeling of spatial information.

Aim of the discipline is learning and gaining students the necessary theoretical knowledge and practical skills in the use of GIS in the establishment of cadastral systems and build knowledge about the development of the automated systems of Ukraine and the world, the contribution of Ukrainian and foreign scientists.

Tasks of discipline is forming the specialist and subsequent practical use of technologies of GIS in land management and land cadaster to take stock of land resources and land owners predicting the state land fund, monitor the use and protection of soil, registration and protection of the rights of citizens and businesses and more.

The discipline provides the formation of a number of competencies:

- general competencies:

GC06 - Ability to use information and communication technologies.

- special competencies:

SC03. Ability to apply regulations, regulatory and technical documents, reference materials in professional activities.

SC04. Ability to select and use effective methods, technologies and equipment for professional activities in the field of geodesy and land management.

SC05. Ability to use modern information, technical and technological support to solve complex issues of geodesy and land management.

SC07. Ability to collect, update, process, critically evaluate, interpret, store, publish and use geospatial data and metadata on objects of natural and man-made origin.

learning results:

LR4. To know and apply in professional activity normative-legal acts, normative-technical documents, reference materials in the field of geodesy and land management and related branches.

LR5. Apply conceptual knowledge of natural and socio-economic sciences in performing tasks of geodesy and land management.

LR9. Collect, evaluate, interpret and use geospatial data, metadata on objects of natural and man-made origin, apply statistical methods of their analysis to solve specialized problems in the field of geodesy and land management.

LR14. Plan complex professional activities, develop and implement projects in the field of geodesy and land management under resource and other constraints.

The course Program and Structure

Topic	Hrs (lectures /laboratory/ individual)	Education result	Tasks	Grade
3 semestr				
SEMANTIC MODULE I. Experience of cadastral projects regional and national level by using GIS technology				
Theme 1. GIS - technology in land cadaster. Automated land cadaster in Ukraine.	0/6/28	Know information technology in cadastral systems Understand the possibilities of organization cadastral Information in a GIS Recognize differences between GIS technology in the land cadaster, Land management and land monitoring	Submitting in eLearn Laboratory work: Using GIS tools to calculate the monetary evaluation of individual plots Individual work: Professional terminology for GIS in cadastral systems. GIS - technology in land cadaster. Automated land cadaster in Ukraine. Experience in cadastral projects regional and national levels using GIS technology	35
Theme 2. Features of cadastral systems in foreign countries	0/8/18	Know The development of cadaster system Be able to ArcGIS-ArcMap tools for Analysis zones around objects with special regulations	Submitting in eLearn Laboratory work: Construction of sanitary and coastal protection zones around objects with special regulations. Analysis zones around objects with special regulations Individual work: Features cadastral systems in foreign countries. World experiences to build and use cadaster and registry	35
Module control			Test	30
Total module 1	0/14/46			100
SEMANTIC MODULE II. Object Model of cadastral database				
Theme 3. Concepts of cadastral database	0/4/14	Know basic concepts cadastral database Be able to ArcGIS-ArcMap tools for select information from the geodatabase by location and by attributes Use Basic requirements for cadastral database	Submitting in eLearn Laboratory work: The selection of information from the geodatabase by location and by attributes Individual works: Concepts of cadastral database. Models of cadastral databases	20

Theme 4. Data on the land fund and its displaying	0/6/15	Know basic stages of Spatial analysis of cadastral systems Be able to ArcGIS-ArcMap tools for analyze land fund Analyze sources of information and their quality	Submitting in eLearn Laboratory work: Data analysis using ArcGIS tools. Individual works: Data on the land fund and its displaying. Use of GIS in various industries	25
Theme 5. Server GIS	0/6/15	Know specifications for the inventory system Be able to ArcGIS-ArcMap online tools for analyze land fund Recognize differences between ArcSDE, ArcIMS, ArcGIS Server	Submitting in eLearn Laboratory work: Data analysis using ArcGIS Online tools. Individual works: Server GIS. Comparison of database models architecture used in cadastral systems	25
Module control			Test	30
Total module 2	0/16/44			100
Total 3 semester				70
Final test			Final exam	30
Total course				100

THE COURSE POLICY

<i>Deadline and rearrangement policy:</i>	Deadlines are defined in e-learn course. Works being submitted after deadlines without a reason are evaluated at a lower grade. Rearrangement of module tests takes place with the permission of the lecturer in case of a specific reasons (for example, illness).
<i>Policy of Academic Plagiarism:</i>	Copying other materials during individual works, tests and final test (including the use of mobile devices) are forbidden. Abstracts must have correct text references to the literature used.
<i>Policy of Attendance:</i>	Attendance of lessons is mandatory. According to objective reasons (for instance, illness, international internship) training can take place individually (in distance form (on-line) by agreement with the dean of the faculty)

STUDENT'S RATING SCALE

Student's rating points	The Ukrainian National Grades	
	exams	final tests
90-100	“Excellent”	passed
74-89	“Good”	
60-73	“Satisfactory”	
0-59	“Unsatisfactory”	fail