Course Overview:

The course "Digital Plans and Maps" introduces students the basics of digital mapping and the possibilities of GIS application in creating of digital cartographic products. The course covers issues related to the requirements for digital plans and maps, and the ways to displaying objects, determining the quality of digital cartographic data, as well as spatial data formats, technologies of designing digital plans and maps, and encoding cartographic information.

The course provides obtaining the capabilities in creating and filling basic cartographic layers, making plans based on vector models, editing spatial and attribute data, designing cartographic materials with the formation of a set of topographic symbols in ArcGIS-ArcMap and cartographic signs for individual thematic layers.

Aim of the: The course "Digital plans and maps» provides obtaining skills of GIS cartographic modeling for land management and land cadaster.

The aim of the discipline: To learn main principle, methods and means of geoinformation mapping to use in land management and land cadaster.

Tasks of the discipline: formation theoretical knowledge in the area of GIS mapping and obtaining practical skills in GIS applications in designing digital plans and maps.

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
6 semestr				
SEMANTIC MODULE I. CARTOGRAPHY AND GEOINFORMATICS				
Theme 1. Terminology in digital mapping	2/2/5	**Know** the requirements for digital maps and plans **Understand** the possibilities of using digital plans and maps in their professional activities **Recognize differences between** digital and electronic maps	Submitting in eLearn **Laboratory work:** Work with layers of basic map **Individual work:** Professional terminology of digital maps and plans	12
Theme 2. Methods of displaying objects	2/12/5	**Know** the objects used in digital plans and maps **Be able to** form of a set of topographic symbols in ArcGIS-ArcMap and signs for individual thematic layers (including agricultural lands) **Apply** displaying and designing tools **Use** GIS to display objects on digital plans and maps	Submitting in eLearn **Laboratory works:** Designing digital symbols (points, lines, polygons) for maps of various scales **Individual work:** Cartographic symbols. Representation of relief	35
Theme 3. Standardization of geographic information	2/8/5	**Know** data formats and be able to use them correctly **Apply** ArcGIS-ArcMap tools for displaying numeric and text data	Submitting in eLearn **Laboratory works:** Data coding. Map composition **Individual work:** Geoinformation mapping data formats	23
Module control			Test	30
Total module 1	6/24/15			100
SEMANTIC MODULE II. TECHNOLOGIES OF DIGITAL MAPPING				
Theme 4. Sources for digital mapping	2/6/5	**Know** the sources of information for creating maps	Submitting in eLearn **Laboratory work:**	21

and map design		**Be able to** create basic cartographic layers **Analyze** sources of information and their quality to create digital maps	Creating digital map by variant Editing digital map by variant **Individual work:** Data sources for creating digital maps and plans	
Theme 5. Technology of designing digital maps and plans	4/8/5	**Know** the technologies of geographic information mapping **Be able to** model and implement components of geographic information mapping **Highlight** the stages of construction of digital maps and plans **Apply** ArcGIS-ArcMap tools for editing vector data	Submitting in eLearn **Laboratory work:** Filling the knowledge base of digital maps by variant. Creating digital map by variant in ArcGIS Online **Individual work:** Analysis of the use of digital maps and plans in various sectors (according to scientific articles and publications)	28
Theme 6. Classification of electronic map	3/7/5	**Know** the purpose of classifiers and codifiers **Be able to** fill the knowledge base of the digital map **Use** ArcGIS-ArcMap in displaying and designing digital plans	Submitting on eLearn **Laboratory work:** Editing digital map by variant in ArcGIS Online. Map composition in ArcGIS Online **Individual work:** The knowledge base of digital maps	21
Module control			Test	30
Total module 2	9/21/15			100
Total 6 semester				70
Final test			Final test	30
Total course				100

THE COURSE POLICY

Deadline and rearrangement policy:	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).
Policy of Academic Plagiarism:	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.
Policy of Attendance:	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