



Country BULGARIA	Institution Vasil Levski National Military University	Course Geographic information systems	ECTS 4.0
Service All Languages English, Bulgarian	Minimum Qualification for Lecturers <ul style="list-style-type: none"> • English: Common European Framework of Reference for Languages (CEFR) Level B1 or NATO STANAG 6001 Level 2. • Adequate pedagogical and psychological competences. • Computer engineer qualification diploma • Teaching is committed to creating a basic knowledge for Geographic Information Systems (GIS) and designing a 3D Geographic models. 		
Prerequisites for international participants: <ul style="list-style-type: none"> • English: Common European Framework of Reference for Languages (CEFR) Level B1 or NATO STANAG Level 2. • Basic knowledge of Operational Systems, design technologies and programing. 		Goal of the Course: <ul style="list-style-type: none"> • Learn the basic knowledge for designing simple 3D Geographic models. • Gain knowledge and skills for designing simple 3D Geographic models. • To become able to design, built, export and use simple 3D Geographic models. 	

Learning outcomes	Knowledge	<ul style="list-style-type: none"> • The integration of data and methods in a way that allows the maintenance of traditional forms of geographical analysis, with new forms of analysis and modeling, with the help of computer systems. • Basic concepts and terms in GIS. Organization of GIS data. • Modeling and analysis in GIS. Digital models of the terrain and the relief • Work in Arc GIS environment (Arc View). Application of the various software products for the preparation of projects in GIS environment. • The capabilities of GIS in searching for expert solutions, implementation of infrastructure projects, use of a database.
	Skills	<ul style="list-style-type: none"> • Be able to configure GIS to solve a specific type of task. • To solve practical computational problems related to geographic information systems. • To know the software products, as well as to create new projects in GIS. • To expand their knowledge of the theory and practice of information systems, computer graphics, database management systems, geography, geodesy, cartography and other sciences.
	Competences	<ul style="list-style-type: none"> • Describe and configure GIS to solve a specific type of task. • Capability to integrate and use different GIS projects. • Capability of maintaining and modifying GIS projects. • Capability to design, built, program and use simple GIS project with CAD and GIS software and digital photo and maps.



	<ul style="list-style-type: none"> • Able to provide the required level of knowledge for using GIS software.
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<p>Verification of learning outcomes</p> <ul style="list-style-type: none"> • Tests: At the end of each topic of the course students must complete specific practice quiz. • Project: Self design of 3D GIS project.

Course Details		
Main Topic	Recommended WH	Details
Modeling and analysis in GIS	15	<ul style="list-style-type: none"> • Digital model of an area. • Digital terrain model. • Basic concepts and terms in GIS. • Exercises
Working in Arc GIS (Arc View)	30	<ul style="list-style-type: none"> • Introduction to Arc GIS (Arc View). Arc GIS. Basic concepts. Georeferenced data. • Data processing in Arc GIS (Arc View). Geographic data in Arc GIS. Data formats. Access to additional tabular data. • Arc GIS application (Arc View). Create maps with Arc View. GIS - DB project. Editing. Data management. • Introduction to ArcView. Making a map and printing a map. Tools for working in ArcView. Labels. Identification of objects on the map. Card storage. Arrange topics in the view. Adding objects to the project. Zoom the view. Add topics to the view. Symbolize the topics. Redefining the topics for appropriate presentation. • Arc GIS application (Autodesk Map). Create maps with Autodesk Map. Development of a course project. Georeferencing. Create and manage layers. Data management. • Arc GIS application (Autodesk Map). Development of a course project. Creating and editing vector data. Add attributes. Store layers with different object types Work with arrays. • Arc GIS application. Development of a course project. Creating a GIS - DB project. Create and add topics to the project. • Arc GIS application. Development of a course project. 3D view and analysis. • Creating projects in GIS. Use of GIS for expert decisions. Examples and applications • Course project presentation. • Exercises.
Total	45	



Erasmus Course
Basic of Arduino microcontrollers
Description

Vasil Levski National Military University
Doc.: ES/2018/08
Date: 14-08-2018
Origin: BG VELIKO02
