

COURSE SYLLABUS SEMESTER

Name of Course	Geographic Information Systems 1.
Course Code	MSB126ANEP
Allotment of Hours per Week	0/0/4
Number of Credits	2
Program	Civil Engineer BSc
Evaluation	signature
Semester	3
Prerequisites	Geodesy 2.
Department	Department of Civil Engineering
Instructor	László ARADI, Béla GADÓ

INTRODUCTION, GENERAL COURSE DESCRIPTION

Process of modeling the world. Analog and digital modeling. Structure of raster and vector spatial information systems. Technological background of spatial information systems. Reference systems. Data acquisition procedures and data source.

To get acquainted with the operation and conceptual structure of spatial information systems, with special regard to the acquisition and systematization of geometric data.

LEARNING OBJECTIVES

Program (lecture):

Week 1 Development and basic elements of information systems. The concept and characteristics of spatial information systems.
Week 3 Characterization and modeling of the real world. Types and characteristics of data. Establishment of a database.
Week 5 Geometric data reference system.
Week 7 Data acquisition procedures and data sources.
Week 9 Autumn break
Week 11 Data structures of spatial information systems.
Week 13 Technological background of spatial information systems.
Week 15 Final TEST

Program (practice):

Week 2 QGIS basics, Coordinate Reference Systems, creating layers, digitizing basics
Week 4 Digitizing the study area, merging objects, understanding symbol layers
Week 6 Creating attribute-based and rule-based labels and complex symbology, 3D visualization
Week 8 Calculated fields. Generating Voronoi-polygons and joining attribute tables
Week 10 Simple spatial queries, generating buffer zones, creating layer intersections, select with filters
Week 12 Mind-term project: importing data, managing data, creating symbology
Week 14 Mind-term project: implementation of spatial queries on data, creating final visualization for the project

ATTENDANCE AND GRADING

Attendance:

Unexcused absences will adversely affect the grade, and in case of absence from more than 30% of the total number of lessons will be grounds for failing the class. To be in class at the beginning time and stay until the scheduled end of the lesson is required, tardiness of more than 20 minutes will be counted as an absence. In the case of an illness or family emergency, the student must present a valid excuse, such as a doctor's note.

Grading: 40% test, 60% mind-term project

Note: as proof of active labor class participation, the labor class project will be turned in as well. The labor class project must be turned in in an acceptable form, although it will not affect the final grade.

Offered exam grade:

Evaluation in percent	Numeric grade
85%-100%	5
70%-85%	4
55%-70	3
40%-55%	2
0-40%	1

READINGS AND REFERENCE MATERIALS

SCHEDULE

		SZORGALMI IDŐSZAK, OKTATÁSI HETEK															VIZSGAIDŐSZAK				
2019/2020. 2. FÉLÉV		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	1.	2.	3.	4.	5.
Lecture number		1		2		3		4				5		6							
Labor class number			1		2		3		4		5		6		7						
Final TEST																X	ret.				
Homework																					
Reports	Labor class materials																trn. in				
Other	Mind-term project measurements									X	X	X									
	Mind-term project												X		X		trn. in	sup trn. in			
Signature and evaluation of the semester																		X			
Final exam																					