

**School of Fine Arts Design and Architecture / Architecture (English)**

**2023 - 2024 Academic Year**

**GEOGRAPHIC INFORMATION SYSTEMS**

**Syllabus**

<b>Course Description</b>					
<b>Name</b>	<b>Code</b>	<b>Semester</b>	<b>T+A Hour</b>	<b>Credit</b>	<b>ECTS</b>
GEOGRAPHIC INFORMATION SYSTEMS	ARC3215255	Spring Semester	2+1	2,5	4
<b>Prerequisites Courses</b>					
<b>Recommended Elective Courses</b>					
<b>Language of Instruction</b>	English				
<b>Course Level</b>	First Cycle (Bachelor's Degree)				
<b>Course Type</b>	Elective				
<b>Course Coordinator</b>	Assist.Prof. Mustafa ERDEM				
<b>Name of Lecturer(s)</b>					
<b>Assistant(s)</b>					
<b>Aim</b>	This lecture includes theory and implementations of Geographic Informations Systems (GIS); aims at increasing students' abilities to govern GIS concept in optimum way within their professional lives and let them develop GIS based products.				
<b>Course Content</b>	This course contains; week 1 General information about course content and GIS,week 2 What is geography and why is it important? What is the role of geography in disciplines such as Architecture/Spatial Planning?,week 3 What is GIS and what does it do? What are the uses of GIS in disciplines such as Architecture/Spatial Planning?, week 4 World Coordinate Geometry Three Dimensional Systems Plane Coordinate Systems Map Projections and their relationship with GIS Projection Surfaces,week 5 Vector Data, Cellular Data, Data entry using existing graphics or images Digitization process Data Management, Database types, Database features, Relational Database Management Systems (DBMS), Data types,week 6 Midterm ,week 7 QGIS software and general usage,week 8 ArcGIS software and general usage ,week 9 Cartographic techniques, data visualization and map production ,week 10 Correction/Classification/Generalization, Measurements Overlay Analyzes Neighborhood Analysis ,week 11 Modeling of Physical and Environmental Processes, Modeling of Human Processes, Modeling of Decision Making Processes ,week 12 Spatial Plan production in GIS environment,week 13 City Information System production in GIS environment,week 14 Project presentations.				
<b>Course Learning Outcomes</b>			<b>Teaching Methods</b>	<b>Assessment Methods</b>	
Basic GIS knowledge and usage capabilities				A, E, F	
<b>Teaching Methods</b>					
<b>Assessment Methods</b>			A: Traditional Written Exam, E: Homework, F: Project Task		
<b>Lecture Schedule</b>					
<b>Sequenc e</b>	<b>Topics</b>	<b>Preliminary Preparation</b>			
1	week 1 General information about course content and GIS				
2	week 2 What is geography and why is it important? What is the role of geography in disciplines such as Architecture/Spatial Planning?				
3	week 3 What is GIS and what does it do? What are the uses of GIS in disciplines such as Architecture/Spatial Planning?				
4	week 4 World Coordinate Geometry Three Dimensional Systems Plane Coordinate Systems Map Projections and their relationship with GIS Projection Surfaces				
5	week 5 Vector Data, Cellular Data, Data entry using existing graphics or images Digitization process Data Management, Database types, Database features, Relational Database Management Systems (DBMS), Data types				
6	week 6 Midterm				
7	week 7 QGIS software and general usage				
8	week 8 ArcGIS software and general usage				
9	week 9 Cartographic techniques, data visualization and map production				
10	week 10 Correction/Classification/Generalization, Measurements Overlay Analyzes Neighborhood Analysis				
11	week 11 Modeling of Physical and Environmental Processes, Modeling of Human Processes, Modeling of Decision Making Processes				
12	week 12 Spatial Plan production in GIS environment				
13	week 13 City Information System production in GIS environment				
14	week 14 Project presentations				
<b>Evaluation Methods</b>		<b>Weight(%)</b>			
Midterm Exam		50			
General Exam		50			

<b>Resources</b>
- Coğrafi Bilgi Sistemleri, Harita Tabanlı Bilgi Yönetimi; Doç. Dr. Vahap Tecim, DEU Fen Bilimleri Enstitüsü, 2008
- Coğrafi Bilgi Sistemleri; Prof. Dr. Hasar Özdemir; İÜ Açık ve Uzaktan Eğitim Fakültesi, 2017
<a href="https://learnigis.org/">https://learnigis.org/</a>
<a href="https://www.esri.com.tr/tr-tr/anasayfa">https://www.esri.com.tr/tr-tr/anasayfa</a>
<a href="https://www.esri.com/en-us/home">https://www.esri.com/en-us/home</a>
<a href="https://ocw.metu.edu.tr/course/view.php?id=127">https://ocw.metu.edu.tr/course/view.php?id=127</a>
<a href="https://www.gislounge.com/">https://www.gislounge.com/</a>
<a href="http://www.sektorharita.com/ders-notlari-cograf-bilgi-sistemi-cbs.html">http://www.sektorharita.com/ders-notlari-cograf-bilgi-sistemi-cbs.html</a>
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<a href="https://mangomap.com/gis-mapping">https://mangomap.com/gis-mapping</a>
<a href="https://mangomap.com/gis-data">https://mangomap.com/gis-data</a>
<a href="https://mangomap.com/gis-software">https://mangomap.com/gis-software</a>
<a href="https://mangomap.com/web-gis">https://mangomap.com/web-gis</a>
<a href="https://www.nationalgeographic.org/encyclopedia/geographic-information-system-gis/">https://www.nationalgeographic.org/encyclopedia/geographic-information-system-gis/</a>