

Course Code	Course Name	Teorical	Practice	Laboratory	Credits	ECTS
GE302	GEOGRAFIC INFORMATION SYSTEMS	2.00	1.00	0.00	3.00	4.00
Course Detail						
Course Language	: English					
Qualification Degree	: Bachelor					
Course Type	: Compulsory					
Preconditions	: Not					
Objectives of the Course	: This course provide technical expertise to produce and analyze spatial information for effective planning and reporting activities in a broad range of disciplines. Specifically, a GIS Applications Specialist will help various agencies and government to effectively apply Geographic Information Systems (GIS), remote sensing, and data visualization technologies to support informational needs. This intensive, GIS program utilizes current high-end technology tools to collect, store, manipulate, analyze, interpret, and communicate geographic information within a variety of disciplines. The students will be versed in several spatial computing technologies used in the industry today and have access to the latest in appropriate computer hardware, software, and field technology. Students will have considerable opportunities to practice their skills in a work-life setting by putting theory into practice					
Course Contents	: This course will introduce students to GIS and the principles of spatial data in their personal life as well as applications of GIS across various industries. Major components of the course include computer representation of geographic information, the basics of GIS databases, spatial analysis with GIS, and application areas of GIS. At the end of the course, students will have an understanding of elementary GIS theory and examples of GIS-based solutions in the world around them.					
Recommended or Required Reading	: 1- Geographic Information Systems and Science 3e Paul A. Longley, Mike Goodchild, David J. Maguire, David W. Rhind July 2010, ©2011. 2- Additional Internet resources will be recommended for particular modules during the course including the e-guides and tutorials from the ArcGIS Help Library. Students will be provided with a variety of supplemental documents and handouts in digital form and links to media resources. Supplemental documents will be available on the Blackboard or/and GIS Server.					
Planned Learning Activities and Teaching Methods	: 1- Teaching style will be one to one interactive teaching. 2. Student discussions during the course will be an important base for the midterm exam. 3. In lessons, presentations shared with students will be used. 4- Applications will also be included in the course. Basic applications in the form of computer-based applications will be implemented.					
Recommended Optional Programme Components	: GE208 computer Mapping GE207 Principle of Cartography					
Instructors	: Dr. Öğr. Üyesi Osman Sami Kırtıloğlu					
Instructor's Assistants	: No assistants					
Presentation Of Course	: Presentations and lab work					
En Son Güncelleme Tarihi:	: 6/24/2024 2:51:43 PM					

Course Outcomes

Upon the completion of this course a student :

- 1 - Provide students a series of practical exercises for developing the technical proficiency in spatial modeling and database design using the powerful tools of GIS
- 2 - Widen the scope of real life modeling by fetching new solutions based on spatial analysis.
- 3 - Discuss the uncertainties behind the data collections and modeling of real life, and development of skills in use of GIS software tools for advanced analysis and modeling techniques
- 4 - Assist the students to develop new methodologies based on ensemble the mathematical and statistical modeling methods with GIS approaches.
- 5 - Provide students an appreciation of the power and limitations of exiting GIS-based environmental models

Preconditions

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Weekly Contents						
	Teorical	Practice	Laboratory	Preparation Info	Teaching Methods	Course Learning Outcomes
1.Week	*INTRODUCTION: DEFINITIONS OF GEOGRAPHIC INFORMATION SYSTEMS (GIS) MANUAL GIS AND COMPUTER-BASED GIS GIS EDUCATION AND TRAINING GIS Education GIS Training GIS Experience CONCEPTS Maps as a Model of Reality Features Points, Lines and Polygons Topology Data Model					
2.Week	*GIS Database Design, data acquisition, data capture					
3.Week	*Models of Earth, Map preprocessing					
4.Week	*Introduction, Attribute data, Principles of database management – vector, Principles of database management – raster, Attribute preprocessing and editing, Attribute verification					
5.Week	*Selection and Measurement, Overlay Analysis, Neighbourhood Analysis, Connectivity Analysis					
6.Week	*Output; Map Communication, Thematic Map Types, Constructing Thematic Maps, Types of Output					
7.Week	*ArcGIS Architecture, Introduction to ArcGIS software		*Practical session (Using computer lab)			
8.Week	*Midterm exam					
9.Week	*Application 1: Working with data and maps					
10.Week	*Application 2: Data Display					
11.Week	*Application 3: Querying the Data					
12.Week	*Application 4: Georeferencing and Digitizing of Raster Data					
13.Week	*Application 4: Data Transformation and Image Analysis					
14.Week	*Application 5: Creating Animations With ArcMAP					

Assesment Methods %
3 Final : 60.000
4 Mdterms : 40.000

ECTS Workload			
Activities	Count	Time(Hour)	Sum of Workload
Final / Final	1	2.00	2.00
Derse Katılım / Attending lectures	14	3.00	42.00
Ara Sınav Hazırlık / Preparation for midterm	1	15.00	15.00
Final Sınavı Hazırlık / Preparation for final	1	15.00	15.00
Vize / Midterms	1	2.00	2.00
Ders Öncesi Biresysel Çalışma / Individual study before lecture	14	1.00	14.00
Bütünleme / Make-up	1	15.00	15.00
Ev Ödevi / Homework	7	3.00	21.00
			Total : 126.00
			Sum of Workload / 30 (Hour) : 4
			ECTS : 4.00

Program And OutcomeRelation											
	P.O. 1	P.O. 2	P.O. 3	P.O. 4	P.O. 5	P.O. 6	P.O. 7	P.O. 8	P.O. 9	P.O. 10	P.O. 11
L.O. 1	0	5	5	5	0	0	0	0	0	0	0
L.O. 2	0	5	5	5	0	0	0	0	0	0	0
L.O. 3	0	4	4	5	0	0	0	0	0	0	0
L.O. 4	0	5	4	5	0	0	0	0	0	0	0
L.O. 5	0	4	5	5	0	0	0	0	0	0	0