GEOGRAPHIC INFORMATION SYSTEMS (GIS)

1	Course Title:	GEOGRAPHIC INFORMATION SYSTEMS (GIS)
2	Course Code:	TOP6936
3	Type of Course:	Optional
4	Level of Course:	Third Cycle
5	Year of Study:	1
6	Semester:	2
7	ECTS Credits Allocated:	5.00
8	Theoretical (hour/week):	2.00
9	Practice (hour/week):	2.00
10	Laboratory (hour/week):	0
11	Prerequisites:	none
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Doç.Dr. ERTUĞRUL AKSOY
15	Course Lecturers:	yok
16	Contact information of the Course Coordinator:	Uludağ Üniversitesi, Ziraat Fakültesi, Toprak Bilimi ve Bitki Besleme Bölümü 16059 Görükle Kampüsü, Nilüfer/Bursa Tel: 0-224-2941534 E-posta: aksoy@uludag.edu.tr
17	Website:	
18	Objective of the Course:	To introduce field of use and advantage of GIS in natural resources management and planning; used software programs and techniques for to manage spatial (geographic) data.
19	Contribution of the Course to Professional Development:	
20	Learning Outcomes:	

	1	To describe the definition of GIS, principles and elements of GIS, and use of GIS.
	2	To compute the GIS software and hardware systems commonly used in Turkey and in the World.
	3	To comprehend and analyzes data bases in GIS.
	4	To compute and interpret the GIS techniques used for monitoring natural resources such as soil, water and forest.
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21	Course Content:

Course Content:

Week	Theoretical	Practice
1	Introduction to GIS Geographic information system concept and history of GIS	To Introduce software, hardware and tools of Remote sensing and GIS laboratory

2	Basic principles of GIS	Former systems used in GIS.
3	Hardware and software needs in GIS, data input and output	Data input with a digitizer.
4	Spatial data base concept	To show and explain toolbox and modules of Arc GIS software program
5	Vector model in GIS (vector data types)	To present vector data and their properties in ArcGIS media
6	Raster model in GIS (raster data types)	To present raster data and their properties on different satellite data in ArcGIS media
7	Midterm Exam	Basic coordinate systems and GIS.
8	Widely used GIS software programs in national and international scale	NetCAD, ENVI, Geomedia, Global Mapper, ILWIS, ArcGIS.
9	Data analysis and modeling	To show data analysis and modeling methods in ArcGIS Media
10	Data input (geographic correction, digitizing, attribute table and thematic map generating)	To show and teach data input tools of ArcGIS program and data input (analog and digital soil and topographical map sample) Distribution of homework subject to students
11	Continuous Surface Creation (DEM, TIN)	Explanation of 3D module of ArcGIS program, creation of DEM and TIN surface by using digital elevation contours (points) (1. Homework subject)
12	3D Modeling and analysis in relation to land management (Slope and aspect, cross-section, cut and fill, watershed analysis)	Producing slope, aspect, shadow etc. data and their maps from DEM and TIN surface (2. and 3. Homework subject)
13	Output creation and error sources in GIS	Explanation of output module of ArcGIS program and

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	2.00	28.00
Practicals/Labs	14	2.00	28.00
Self study and preperation	14	1.00	14.00
Homeworks	4	10.00	40.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	15.00	15.00
Others	0	0.00	0.00
Final Exams	1	22.00	22.00
Total Work Load			147.00
Total work load/ 30 hr			4.90
ECTS Credit of the Course			5.00

22	Textbooks, References and/or Other	Aksoy, E. GIS Cource notes. 25p. Chang, K. 2004. Introduction to Geographic Information Systems. McGraw Hill. 400p. Arctur, D. and Zeiler, M. 2004. Designing Geodatabases:Case studies in GIS data modeling. ESRI Mitchell, A. 2005. The ESRI Guide to GIS Analysis:Vol.2, [illegible] Skidmore, A. (editor). 2002. Environmental modelling with GIS and remote sensing. Taylor & Francis, London.268p. Aranof, S., 1989., An Introduction to Geographic Information Systems, Ottowa. Burrough, P.A., 1986. Principles of Geographical Information Systems for Land Resurces Assesment. Univ. Of Utrecht, The Netherlands. Clarendon Press, Oxford.
23	Assesment	

TERM LEARNING ACTIVITIES	NUMBER	WEIGHT
Midterm Exam	1	30.00
Quiz	0	0.00

Home work-project	4	20.00
Final Exam	1	50.00
Total	6	100.00
Contribution of Term (Year) Learning Activities to Success Grade		50.00
Contribution of Final Exam to Success Grade		50.00
Total		100.00
Measurement and Evaluation Techniques Used in the Course		

24 ECTS / WORK LOAD TABLE

25 CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS

	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ10	PQ11	PQ12	PQ13	PQ14	PQ15	PQ16
ÖK1	5	0	5	5	4	3	0	0	0	0	3	0	0	0	0	0
ÖK2	4	0	0	5	0	0	0	0	0	0	4	0	0	0	0	0
ÖK3	4	0	0	5	0	0	0	0	0	0	5	0	0	0	0	0
ÖK4	4	0	0	5	0	3	0	4	0	0	0	0	0	0	0	0

LO: Learning Objectives PQ: Program Qualifications

Contribution Level:	**1 very low**	**2 low**	**3 Medium**	**4 High**	**5 Very High**