GIS TECHNIQUES ON LAND MANAGEMENT

1	Course Title:	GIS TECHNIQUES ON LAND MANAGEMENT
2	Course Code:	TPR4920-S
3	Type of Course:	Optional
4	Level of Course:	First Cycle
5	Year of Study:	4
6	Semester:	8
7	ECTS Credits Allocated:	3.00
8	Theoretical (hour/week):	1.00
9	Practice (hour/week):	2.00
10	Laboratory (hour/week):	0
11	Prerequisites:	no
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Doç.Dr. ERTUĞRUL AKSOY
15	Course Lecturers:	Yrd.Doç.Dr. Gökhan ÖZSOY
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 acquire skills and knowledge on: The basic principles of Geographic Information Systems (GIS); tools and software used in GIS; application areas of GIS; use of GIS techniques in land management and agricultural applications.
19	Contribution of the Course to Professional Development:	
20	Learning Outcomes:	
	1	To describe the definition of GIS, basic principles and elements, general and agricultural use of GIS.
	2	To describe the GIS software and hardware systems commonly used in Turkey and in the World.
	3	To comprehend adequate information on the basic elements of GIS, digital data sources, methods of obtaining data, and creating data bases.
	4	To use GIS techniques used for monitoring (our) natural resources such as soil, water and forest.
	5	To be able to follow the innovations in GIS applications for monitoring, protecting and developing natural resources in Turkey and in the World.
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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 ArcGIS 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	Repeating courses and 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).
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)
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

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	1.00	14.00
Practicals/Labs	14	2.00	28.00
Self study and preperation	14	1.00	14.00
Homeworks	0	0.00	0.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	10.00	10.00
Others	1	10.00	10.00
Final Exams	1	15.00	15.00
Total Work Load			91.00
Total work load/ 30 hr			3.03
ECTS Credit of the Course			3.00

22 Textbooks, References and/or Other

Aksoy, E. Coğrafi Bilgi Sistemi ders notları. 35s.

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 ... USA. 422p.

Mitchell, A. 2005. The ESRI Guide to GIS Analysis:Vol.2 ... 238p.

... resources. ESRI press, USA. 203p.

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	20.00
Quiz	1	20.00

Home work-project	0	0.00
Final Exam	1	60.00
Total	3	100.00
Contribution of Term (Year) Learning Activities to Success Grade		40.00
Contribution of Final Exam to Success Grade		60.00
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	3	0	0	0	5	0	4	4	0	0	3	0	0	0	0	0
ÖK2	0	0	0	0	5	0	0	4	0	0	0	0	0	0	0	0
ÖK3	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0
ÖK4	3	0	3	0	5	0	4	0	0	0	4	0	0	0	0	0
ÖK5	0	0	0	0	0	0	0	0	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**