REMOTE SENSING AND AGRICULTURAL APPLICATIONS

1	Course Title:	REMOTE SENSING AND AGRICULTURAL APPLICATIONS	
2	Course Code:	TPR4913-S	
3	Type of Course:	Optional	
4	Level of Course:	First Cycle	
5	Year of Study:	4	
6	Semester:	7	
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:	none	
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:	Prof. Dr. ERTUĞRUL AKSOY	
15	Course Lecturers:	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 gain knowledge and skills about the principles of Remote Sensing (RS), tools used in RS, software and digital data, RS application areas, RS applications in agriculture and natural resources monitoring.	
19	Contribution of the Course to Professional Development:	Knows the basic principles of remote sensing and remote sensing techniques. does production and area prediction in agriculture by using remote sensing program and satellite images.	
20	Learning Outcomes:		
		1	To describe the definition of RS, basic principles and elements of RS, areas of general and agricultural use of RS.
		2	To define the properties of remote sensing hardware and software commonly used in Turkey and in the World.
		3	To define the basic elements of RS, digital data sources and methods of obtaining data.
		4	To apply the basic RS techniques for to monitor and manage natural resources such as soil, water and forest and to product and area estimation in agriculture
		5	To follow the innovations on RS 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 -Definition of Remote Sensing (RS) and the history of RS.	Introducing remote sensing and GIS laboratory.
2	Physical components of RS	Software and hardware systems used for RS.
3	Electromagnetic Spectrum, color theory and Color composite images.	Computer Application
4	Reflection characteristics of the natural and cultural objects.	Computer Application
5	The satellites and sensors used in RS.	Computer Application
6	Satellite data selection.	Computer Application
7	Features and application areas of satellite images and aerial photographs	Satellite images and Panchromatic and color aerial photographs
8	Basic principles of Photogrametry and maps.	Computer Application
9	Preprocessing in RS data.	Computer Application
10	Generating information from RS data	Computer Application
11	Visual interpretation in RS	Computer Application
12	Multi spectral classification in RS (product and area prediction)	Computer Application
13	RS applications in agriculture and natural resources management; unmannned aerial vehicle (UVA) and using in agiculture	Computer Application
14	presentation of project assignments and an	Computer Application

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	2	5.00	10.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	10.00	10.00
Others	0	0.00	0.00
Final Exams	1	20.00	20.00
Total Work Load			96.00
Total work load/ 30 hr			3.20
ECTS Credit of the Course			3.00

22	Textbooks, References and/or Other Materials:

Sesören, A., 1999. Uzaktan Algılamada Temel Kavramlar. Mart Matbaacılık, İstanbul.

Lillesand, T.M., Kiefer, R.W., 2000. Remote Sensing and Image Intrpretation. Fourth Ed. John. Wiley and Sons, Inc.,

Arnoff, S. 2005. Remote Sensing for GIS Managers.

Buiten , H.J., Clevers J.G.P.W., 1993. Land Observation

From Space. ITC, International Institute for Aerospace

23	Assesment

TERM LEARNING ACTIVITIES	NUMBER	WEIGHT
Midterm Exam	1	20.00
Quiz	0	0.00
Home work-project	2	20.00
Final Exam	1	60.00
Total	4	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	Midterm exam, homework, attandes performance to lecture, practice and final exam

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	4	0	5	0	3	0	0	0	5	0	0	0	0	0	0
ÖK2	4	4	0	5	0	3	0	0	0	4	0	0	0	0	0	0
ÖK3	4	5	0	5	0	4	0	0	0	5	0	0	0	0	0	0
ÖK4	4	5	0	5	0	4	0	0	0	5	0	0	0	0	0	0
ÖK5	4	5	0	5	0	4	0	0	0	5	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**			