PRECISION AGRICULTURAL TECHNOLOGIES

1	Course Title:	PRECISION AGRICULTURAL TECHNOLOGIES
2	Course Code:	BSM4818
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):	2.00
9	Practice (hour/week):	0.00
10	Laboratory (hour/week):	0
11	Prerequisites:	None
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Doç.Dr. SELÇUK ARSLAN
15	Course Lecturers:	
16	Contact information of the Course Coordinator:	e-posta: dravardar@uludag.edu.tr Telefon: 0 224 2941605 Adres: Uludağ Üniversitesi, Ziraat Fakültesi, Biyosistem Mühendisliği Bölümü, Görükle Kampüsü, 16059, Nilüfer/BURSA
17	Website:	
18	Objective of the Course:	Description of precision agriculture (PA) and its objectives, geographic information systems in PA, yield measuring systems used in agricultural machinery, preparation of GPS-based yield maps, evaluating variations of yield statistically, equipment used in soil and plant sampling, analyzing and mapping features of soil and plant in respect to PA, remote sensing methods, evaluating properties of yield, plant and soil, preparation of application maps, variable rate technologies with application methods, evaluation of PA technologies in respect to economics and environment.
19	Contribution of the Course to Professional Development:	
20	Learning Outcomes:	

	1	understand precision agriculture techniques
	2	synthesize various engineering disciplines and PA
	3	analyze yield variations in agriculture with PA techniques
	4	
	5	
	6	
	7	
	8	
	9	
	10	

21	Course Content:	
	Course Content:	
Week	Theoretical	Practice
1	Introduction to precision agriculture	

2	Geodetic datum, coordinate systems and projections	
3	Positioning systems and principles of GPS. Usage of these systems in PA	
4	Differential GPS and its applications in PA	
5	GIS concepts and data types	
6	Interpolation methods in GIS 1	
7	Interpolation methods in GIS 2	
8	Soil sampling in PA	
9	Mid-term	
10	Yield monitoring and mapping in PA	
11	Remote sensing in PA 1	
12	Remote sensing in PA 2	
13	Variable rate machinery and equipments	

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	2.00	28.00
Practicals/Labs	0	0.00	0.00
Self study and preperation	14	2.00	28.00
Homeworks	1	12.00	12.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	8.00	8.00
Others	0	0.00	0.00
Final Exams	1	12.00	12.00
Total Work Load			96.00
Total work load/ 30 hr			2.93
ECTS Credit of the Course			3.00

TERM LEARNING ACTIVITIES	**NUMBER**	**WEIGHT**
Quiz	0	0.00
Final Exam	1	60.00
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	4	3	0	4	4	0	4	3	0	0	0	0
ÖK2	0	0	0	0	0	0	0	0	4	0	4	3	0	0	0	0
ÖK3	5	4	0	0	4	0	0	3	3	3	5	3	0	0	0	0
LO: Learning Objectives PQ: Program Qualifications																
Contribution Level:	**1 very low**		**2 low**			**3 Medium**			**4 High**			**5 Very High**				