AGRICULTURAL APPLICATIONS OF WIND ENERGY

1	Course Title:	AGRICULTURAL APPLICATIONS OF WIND ENERGY	
2	Course Code:	BSM5048	
3	Type of Course:	Optional	
4	Level of Course:	Second Cycle	
5	Year of Study:	1	
6	Semester:	2	
7	ECTS Credits Allocated:	6.00	
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:	Prof. Dr. ALİ VARDAR	
15	Course Lecturers:	YOK	
16	Contact information of the Course Coordinator:	e-posta: dravardar@uludag.edu.tr Telefon: 0 224 2941605 Adres: Bursa Uludağ Üniversitesi, Ziraat Fakültesi, Biyosistem Mühendisliği Bölümü, Görükle Kampüsü, 16059, Nilüfer/BURSA	
17	Website:		
18	Objective of the Course:	Today, renewable energy sources, which are taking firm steps towards becoming an alternative to fossil-based energies, attract the attention of people from almost every branch. In this context, the aim of this course is to provide the student with the opportunity to benefit effectively from the knowledge he / she obtained on solar energy applications by creating a solid foundation on the basic concepts and principles of climate change and solar energy.	
19	Contribution of the Course to Professional Development:	It contributes to the recognition of solar energy systems and renewable energy systems to be applied in agricultural fields.	
20	Learning Outcomes:		
		1	Understanding the importance of the concept of energy and the effects of fossil-based energy resources on the world;
		2	To be able to analyze the positive and negative aspects of renewable energy sources;
		3	To be able to understand the different application areas of solar energy and to develop solar energy based energy solutions for a facility that needs energy;
		4	
		5	
		6	
		7	
		8	
		9	
		10	
21	Course Content:		
	Course Content:		
Week	Theoretical		Practice

1	Introduction and the importance of the energy concept	Analysis of expectations about the lesson
2	Energy sources and classification	Giving homework topics and informing
3	Climate change and global warming	Examination of visuals and videos explaining the effects of global warming and climate change
4	Renewable energy sources and their positive and negative aspects	Examination of visuals and videos describing renewable energy sources
5	Solar radiation theory	Solar radiation calculations
6	Solar energy systems	Solar system selection and design
7	Solar drying, greenhouse heating, cooling and electricity generation	Solar drying, greenhouse heating, cooling and electricity generation calculations
8	Concentrated solar energy systems	Solar system selection and design
9	Solar thermal systems	Solar system selection and design
10	Photovoltaic technology	Solar system selection and design
11	Solar radiation measurement	Solar radiation measurement application
12	Güneş ışınım ölçüm uygulaması	Photovoltaic plant calculations
13	Photovoltaic plant design	Photovoltaic plant design application
14	An overview	Project reviews

22	Textbooks, References and/or Other Materials:	1. Quaschning, V., 2011. Regenarative Energiesysteme, Hanser Verlag, München. 2. Quaschning, V., 2011. Understanding Renewable Energy Systems, Earthscan, London. 3. Mertens, K., 2011. Photovoltaik, Hanser Verlag, München.
23	Assesment	

TERM LEARNING ACTIVITIES	**NUMBER**	**WEIGHT**
Midterm Exam	0	0.00
Quiz	0	0.00
Home work-project	0	0.00
Final Exam	1	100.00
Total	1	100.00
Contribution of Term (Year) Learning Activities to Success Grade		0.00
Contribution of Final Exam to Success Grade		100.00
Total		100.00
Measurement and Evaluation Techniques Used in the Course		The effect of the final exam on the course-passing grade is 100%.

24	**ECTS / WORK LOAD TABLE**

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	6.00	84.00
Homeworks	2	10.00	20.00
Projects	1	10.00	10.00
Field Studies	0	0.00	0.00
Midterm exams	0	0.00	0.00
Others	0	0.00	0.00
Final Exams	1	10.00	10.00
Total Work Load			180.00
Total work load/ 30 hr			6.00
ECTS Credit of the Course			6.00

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	2	4	3	3	4	2	3	4	5	3	4	3	0	0	0	0
ÖK2	4	4	3	5	3	2	4	3	4	3	2	4	0	0	0	0
ÖK3	5	2	3	4	4	3	4	3	2	1	4	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**