RENEWABLE ENERGY SYSTEMS

1	Course Title:	RENEWABLE ENERGY SYSTEMS
2	Course Code:	EHAS101
3	Type of Course:	Optional
4	Level of Course:	Short Cycle
5	Year of Study:	1
6	Semester:	2
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:	
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Öğr. Gör. Dr. HANDE UNGAN
15	Course Lecturers:	Meslek Yüksekokulları Yönetim Kurullarının görevlendirdiği öğretim elemanları.
16	Contact information of the Course Coordinator:	Öğr. Gör. Dr. Hande UNGAN handeungan@uludag.edu.tr
17	Website:	
18	Objective of the Course:	Understanding of renewable energy (alternative energy) types.
19	Contribution of the Course to Professional Development:	Gaining the ability to solve problems related to renewable energy sources in the sector
20	Learning Outcomes:	

	1	Understanding the energy theory and its importance
	2	Having information about alternative energy sources
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21	Course Content:

Course Content:

Week	Theoretical	Practice
1	Definition of energy, classification of energy sources, alternative energy sources	
2	Introduction of renewable energy, today's energy use, fossil fuels and climate change	
3	Renewable energy sources, renewable energy in the future	
4	Solar power: availability and nature of solar energy, active heating by solar energy, passive heating by solar energy	

5	Thermal solar motors and electricity generation, economy, potential and environmental impact	
6	Tidal energy: introduction of tidal energy, technical, environmental and economic factors, tidal energy potential, tidal current turbines	
7	Wind energy: environmental impact, wind turbines, commercial developments and wind energy potential,	
8	Midterm exam and course repetition	
9	Wave energy: physical principles of wave energy, wave energy sources, wave energy technology, environmental effects, economics	
10	Geothermal energy: geothermal energy resources, geothermal resource operating energy technologies, environmental impacts, economy	
11	Hydroelectric: a brief history of hydropower, types of hydroelectric power plants, small-scale hydropower, environmental	
12	Energy transport and storage: heat transport, electricity transport, heat storage, storage of high quality forms of energy.	
13	Hydrogen energy and properties	
14	Hydrogen energy applications, applications in fuel cell technology.	

22	Textbooks, References and/or Other Materials:	
23	Assesment	

TERM LEARNING ACTIVITIES	**NUMBER**	**WEIGHT**
Midterm Exam	1	30.00
Quiz	0	0.00
Home work-project	1	10.00
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		Measurement and evaluation is carried out according to the priciples of Bursa uludag University Associate and Undergraduate Education Regulation.

24	**ECTS / WORK LOAD TABLE**

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	13	1.50	19.50
Homeworks	1	8.00	8.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	12.00	12.00
Others	0	0.00	0.00
Final Exams	1	22.00	22.00
Total Work Load			101.50
Total work load/ 30 hr			2.98
ECTS Credit of the Course			3.00

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	5	4	0	0	0	5	3	0	0	5	0	0	0	0	0	0
ÖK2	5	0	0	0	0	5	0	0	0	4	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**