

## BASIC INSTALLATION PROCESS

1	Course Title:	BASIC INSTALLATION PROCESS	
2	Course Code:	GTTZ105	
3	Type of Course:	Compulsory	
4	Level of Course:	Short Cycle	
5	Year of Study:	1	
6	Semester:	1	
7	ECTS Credits Allocated:	5.00	
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:	Öğr.Gör. S.HAKAN GÜL	
15	Course Lecturers:	Öğr.Gör.S.Hakan GÜL	
16	Contact information of the Course Coordinator:	kursat@uludag.edu.tr, Uludağ Üniversitesi Orhangazi Meslek Yüksekokulu,0 224 573 98 62	
17	Website:		
18	Objective of the Course:	Knowing solar power which is one of the most important of the renewable energy sources and obtaining detailed information in terms of the working principles of systems that works by this power.	
19	Contribution of the Course to Professional Development:		
20	Learning Outcomes:		
		1	To understand the importance of solar energy and renewable energy resources in the location of
		2	the fields of solar energy can be used to grasp the features
		3	To grasp the process of the solar water heating systems and the other installations sytems that used solar power
		4	Using the calculations methods relating with selection and dimensioning of solar water heating systems.
		5	Knowing the regulations of mounting and montage methods of solar collector.
		6	To grasp the air conditioning systems using absorbtion.
		7	Knowing the other application fields of solar energy, cooling, drying, pure water, electricity generation
		8	Describing the working principles of PV
		9	
		10	
21	Course Content:		
		<b>Course Content:</b>	
Week	Theoretical	Practice	
1	Place of earth in Solar system, its distance from sun, an explanation on how the sunlight come to the earth in accordance to the position of earth and atmospheric effects on the sunlight.		

2	Properties and uses of solar energy	
3	Solar heat collectors and kinds of collectors.	
4	Description of collectors with flat plate their fields of applications.	
5	Flat plate collectors; transparent cover and absorber surfaces	
6	Planar collectors, heat pipes and insulation carrier	
7	Classification of solar water heating systems	
8	Midterm exam/Course review	
9	Open-circuit the natural circulation systems	
10	closed-circuit forced circulation systems	
11	Placement of collectors, the angle of inclination, and shading	
12	solar-powered water heating system sizing calculation method used, equations and tables	
13	Other applications of solar energy used in electricity generation, cooling, drying, pure water production	
14	Ultimate applications of solar energy	

23	Textbooks, References and/or Other		Güneş Enerjisi ve Uygulamaları H. Hüseyin Öztürk, Birece		
Activites			Number	Duration (hour)	Total Work Load (hour)
THEORY LEARNING ACTIVITIES			NUMBER	TIME	
Theoretical		14	2.00	28.00	
Practicals/Labs			0	0.00	0.00
Self-study and preparation		0	2.00	28.00	
Homeworks			1	10.00	10.00
Final Exam		1	0.00	0.00	
Field Studies			0	0.00	0.00
Contribution of Mid Term (Year) Learning Activities to Success Grade			50	10.00	10.00
Others			0	0.00	0.00
Contribution of Final Exam to Success Grade			50	14.00	14.00
Total Work Load					90.00
Measurements and Evaluation Techniques Used in the Course					3.00
ECTS Credit of the Course					5.00
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	0	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK2	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0
ÖK3	0	3	3	0	3	0	0	0	0	0	0	0	0	0	0	0
ÖK4	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0

ÖK5	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0
ÖK6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK7	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK8	0	3	3	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			