WORK SECURITY

1	Course Title:	WORK SECURITY	
2	Course Code:	GTTZ101	
3	Type of Course:	Compulsory	
4	Level of Course:	Short Cycle	
5	Year of Study:	1	
6	Semester:	1	
7	ECTS Credits Allocated:	4.00	
8	Theoretical (hour/week):	3.00	
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:	Öğr.Gör.Dr. KÜRŞAT ÜNLÜ	
15	Course Lecturers:	Öğr. Gör. Dr. Kürşat ÜNLÜ	
16	Contact information of the Course Coordinator:	berfin@uludag.edu.tr, U.Ü.Teknik Bilimler MYO Gaz ve Tesisat Teknolojisi Programı 0 224 294 23 95	
17	Website:		
18	Objective of the Course:	To understand the basic concepts of thermodynamics. To investigate the zeroth, first and second laws of thermodynamics. To understand the ideal gas law. Become familiar with the basic P-V and T-V diagrams. To determine the thermodynamic properties of pure substances. To calculate the thermodynamic properties of ideal gases. To understand the interrelation of heat, work and energy.	
19	Contribution of the Course to Professional Development:		
20	Learning Outcomes:		
		1	To be able to express the unit systems and their transformations.
		2	To be able to understand the basic concepts of thermodynamics such as pressure, temperature, specific volume, internal energy, enthalpy, entropy.
		3	To be able to distinguish between pure substances and ideal gases and able to explain the differences between them.
		4	To be able to express the relation of P-v-T to pure substance and ideal gases. To become familiar with the relevant tables of pure substance.
		5	To be able to draw and interpret diagrams of P-v-T related to pure substances and ideal gases.
		6	To be able to define heat, work and energy and to state the relations between these ones.
		7	To be able to state the zeroth, first and second law of thermodynamics.
		8	
		9	
		10	
21	Course Content:		

	Course Content:	
Week	Theoretical	Practice
1	Introduction of the course, issues, goals and objectives expression, indicated resources, and methods of examination.	
2	Unit systems and their transformations.	
3	Basic concepts of thermodynamics: Pressure, temperature, specific volume, internal energy, enthalpy, entropy, state and change the state.	
4	Concept of heat and temperature.	
5	Pure substances, diagrams of pure substances and P-v-T relations.	
6	Tables of thermodynamic properties of pure substances.	
7	Determination of properties of pure substances and determining the region.	
8	Repeating courses and midterm exam	
9	Ideal gases, diagrams for ideal gases, and P-v-T relations.	
10	The ideal gas tables, change of state applications for ideal gases.	
11	Moving boundary work. Heat, work and the first law of thermodynamics.	
12	The first law of thermodynamics for change of state of pure substances and ideal gases	
22	Textbooks, References and/or Other	• Thermodynamic Tables and Diagrams Kılıç A., Öztürk A. Fundamentals of Engineering Thermodynamics, Yamankaradeniz, R., Uludağ Üniversitesi, Bursa, 1997. Engineering Approach, ,McGraw Hill Literatür, İstanbul, 1996.

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	3.00	42.00
Practicals/Labs	0	0.00	0.00
Self study and preperation	10	1.00	10.00
Homeworks	0	0.00	0.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm Exams	2	2.00	4.00
Others	0	0.00	0.00
Final Exams	1	4.00	4.00
Total Work Load			60.00
Total work load/ 30 hr			2.00
ECTS Credit of the Course			4.00

MAIN LEARNING ACTIVITIES	NUMBER	WEIGHT
Midterm Exam	2	50.00
Quiz	0	0.00
Home work project	0	0.00
Final Exam	1	50.00
Total	3	100.00

Contribution of Term (Year) Learning Activities to Success Grade	50.00
Contribution of Final Exam to Success Grade	50.00
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	5	3	0	0	4	0	3	0	0	0	0	0	0	0	0	0
ÖK2	5	2	0	0	3	0	2	0	0	0	0	0	0	0	0	0
ÖK3	5	2	0	0	3	0	2	0	0	0	0	0	0	0	0	0
ÖK4	5	2	0	0	3	0	2	0	0	0	0	0	0	0	0	0
ÖK5	5	2	0	0	3	0	2	0	0	0	0	0	0	0	0	0
ÖK6	5	2	0	0	3	0	2	0	0	0	0	0	0	0	0	0
ÖK7	5	2	0	0	3	0	2	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**				