AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title		Energy Efficiency						
Course Code		MME532		Couse Level		Second Cycle (Master's Degree)		
ECTS Credit	8	Workload	200 *(Hours)*	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		The objective of this course is providing students with the methods of energy saving in industry						
Course Content		Energy resources, Fossil energy resources and combustion, Energy saving in industry building, Passive energy saving, Heat losses in pipes, Isolation and its important, Energy recovery in industry, Heat and energy losses calculation, Samples of passive energy saving in industry, Active energy saving, Improvement of cycles efficiencies, Samples of active energy saving in industry, Samples of energy saving in energy plants, Samples of energy saving in industry						
Work Placement		N/A						
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Demonstration, Problem Solving				
Name of Lecturer(s)		Lec. Sinan GÜÇLÜER						

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	30
Final Examination	1	50
Quiz	1	10
Assignment	1	10

Recommended or Required Reading

1	YUNUS A. ÇENGEL And Robert H. Turner, Fundamentals of Thermal-Fluid Sciences, McGraw Hill Companies Inc., 2001

Week	Weekly Detailed Course Contents	
1	Theoretical	Energy resources
2	Theoretical	Fossil energy resources and combustion
3	Theoretical	Energy saving in industrial buildings
4	Theoretical	Passive energy saving
5	Theoretical	Heat losses in pipes
6	Theoretical	Isolation and its importance
7	Theoretical	Energy recovery in industry
8	Intermediate Exam	Midterm
9	Theoretical	Heat and energy loss calculation
10	Theoretical	Samples of passive energy saving in industry
11	Theoretical	Active energy saving
12	Theoretical	Improvement of cycles efficiencies
13	Theoretical	Samples of active energy saving in industry
14	Theoretical	Samples of energy saving in energy plants
15	Theoretical	Samples of energy saving in industry
16	Final Exam	Final Exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	6	3	126
Assignment	7	2	0	14
Individual Work	1	19	0	19
Midterm Examination	1	15	3	18

Final Examination	1	20	3	23
		Total Workload (Hours)		200
		[Total Workload (Hours) / 25*] = **ECTS**		8

25 hour workload is accepted as 1 ECTS

Learning Outcomes

1	Ability to plan energy saving applications
2	Ability to investigate energy saving activities in industry
3	Ability to calculate possible energy saving in industrial buildings
4	Ability to calculate available co-generation in industry
5	Ability to calculate energy saving in energy generation and usage
6	Ability to calculate heat and energy losses in industry
7	Ability to explain samples and solutions of energy saving in industry and power plants

Programme Outcomes *(Mechanical Engineering (English) Master)*

1	To be able to access wide and deep information with scientific researches in the field of Engineering, evaluate, interpret and implement the knowledge gained in his/her field of study
2	To be able to complete and implement "limited or incomplete data" by using the scientific methods
3	To be able to consolidate engineering problems, develop proper method(s) to solve and apply the innovative solutions to them
4	To be able to develop new and original ideas and method(s), to develop new innovative solutions at design of system, component or process
5	To be able to gain comprehensive information on modern techniques, methods and their borders which are being applied to engineering
6	To be able to design and apply analytical, modeling and experimental based research, analyze and interpret the faced complex issues during the design and apply process
7	To be able to gain high level ability to define the required information and data
8	To be able to work in multi-disciplinary teams and to take responsibility to define approaches for complex situations
9	To be able to transfer of the process and results of studies at national and international environments systematic and clear verbal or written
10	To be able to be aware of social, scientific and ethical values guarding adequacy at all professional activities and at the stage of data collection, interpretation, and announcement
11	To be able to become aware of new and developing application of profession and ability to analyze and study on those applications
12	To be able to interpret engineering application's social and environmental dimensions and it's compliance with the social environment

Contribution of Learning Outcomes to Programme Outcomes *1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High*

	L1	L2	L3	L4	L5	L6	L7
P1	5	4	5	4	5	5	4
P2	4	5	4	5	5	4	5
P3	5	4	5	4	5	4	5
P4	4	3	4	3	4	5	4
P5	3	4	3	5	4	3	5
P6	3	3	3	4	3	3	4
P7	4	4	4	3	5	5	3
P8	5	5	5	5	4	5	5
P9	4	5	4	4	3	4	4
P10	5	4	5	5	5	3	5
P11	5	3	5	5	5	5	4
P12	5	5	3	4	5	4	5