



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Heat Pipe							
Course Code		MME635		Course Level		Third Cycle (Doctorate Degree)			
ECTS Credit	8	Workload	200 (Hours)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		The aim of this course is to inform postgraduate students about the theories and applications of HEAT PIPES that they will encounter during their education life and in their professional life.							
Course Content		It is aimed to give information about the theory and to provide information about problems and solutions related to the applications of heat pipes.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Experiment, Discussion, Case Study, Project Based Study, Individual Study					
Name of Lecturer(s)									

Prerequisites & Co-requisites

Language Requisite	Yes
--------------------	-----

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	15
Final Examination	1	60
Quiz	4	15
Assignment	1	5
Term Assignment	1	5

Recommended or Required Reading

1	Zohuri, B. (2016). Heat Pipe Design and Technology: Modern Applications for Practical Thermal Management. Springer.
2	Dunn, P. D., & Reay, D. (2012). Heat pipes. Elsevier.

Week	Weekly Detailed Course Contents	
1	Theoretical	Introduction to heat pipes.Types of heat pipes and applications.
2	Theoretical	Heat pipe theory
3	Theoretical	Wick structures
4	Theoretical	Control techniques
5	Theoretical	Working fluids
6	Theoretical	Heat characteristics
7	Theoretical	Capillary limit and temperature characteristics
8	Intermediate Exam	Midterm Exam
9	Theoretical	Sonic
10	Theoretical	Bubble method
11	Theoretical	Boiling limit
12	Theoretical	Heat pipe design and design models
13	Theoretical	Fabrication of heat pipes
14	Theoretical	Various applications of heat pipes in energy systems
15	Theoretical	General review
16	Final Exam	Final Exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	16	5	4	144
Assignment	5	0	3	15
Term Project	1	10	2	12



Midterm Examination	1	15	2	17
Final Examination	1	10	2	12
Total Workload (Hours)				200
[Total Workload (Hours) / 25*] = ECTS				8

*25 hour workload is accepted as 1 ECTS

Learning Outcomes

1	To learn types of heat pipes and applications, working fluids, wick structures
2	To learn control techniques, heat characteristics, heat pipe theory, capillary limit and temperature characteristics
3	To learn heat pipe design and design models, fabrication of heat pipes
4	To learn various applications of heat pipes in energy systems
5	To learn sonic, bubble method, boiling limit

Programme Outcomes (Mechanical Engineering (English) Doctorate)

1	1. In Mathematics, natural sciences and mechanical engineering, department has the sufficient infrastructure; the ability to use the theoretical and practical information for engineering solutions
2	2. The ability to identify, define, and solve the formula for complex engineering problems; the ability to select and apply for the appropriate analytical methods and modelling techniques
3	3. To meet desired needs of a system, system component, or process, analysing and designing skill under realistic constraints; in this respect, the ability to apply the methods of modern design
4	4. The ability to use and choose modern techniques and tools for required engineering applications and; the ability to use information technology effectively
5	5. The ability to design the experiment, collect the data for the experiment and interpret to analysing results
6	6. The ability to use computer software and hardware information, access to information and other information sources
7	7. The ability to work individually and with multidisciplinary teams effectively, taking responsibility self-confidence for complex situations
8	8. The ability to communicate with foreign colleagues by having high level of foreign language knowledge in the field of engineering
9	9. Monitoring the science and technology developments and the ability to renew itself with innovative ideas constantly
10	10. Professional and ethical responsibility awareness
11	11. Having an adequate information and awareness in the subjects of occupational safety, occupational health, social security rights, quality control and management issues of environmental protection
12	12. The ability to appreciate the effects of engineering solutions and applications in universal and social dimensions
13	13. The ability to be enlightened to the experts or non-expert audience groups on the issues related with engineering problems and solutions written and oral
14	14. The ability to have adequate knowledge and skills in the project development and application, manage the activities planning, including the projects to the employees having the responsibility of the project by increasing vocational awareness

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

	L1	L2	L3	L4	L5
P1	4	5	5	3	5
P2	5	5	4	4	5
P3	5	5	3	4	5
P4	4	4	3	5	4
P5	4	5	4	4	4
P6	4	5	5	3	5
P7	3	5	5	3	5
P8	5	4	5	4	4
P9	4	4	5	5	5
P10	4	3	5	4	5
P11	5	5	3	3	3
P12	5	5	5	5	5
P13	5	4	5	5	4
P14	3	5	4	3	3

