

Course Description Form	
Course Code and Name	MM312 THERMAL ENVIRONMENTAL ENGINEERING
Course Semester	6
Catalog Content	Thermal Comfort, Thermal Insulation of Buildings, Heating, Cooling, Ventilation and Air Conditioning
Textbook	Pırasacı T. ve Sivrioğlu M., Isıl Çevre Mühendisliği - Isıtma, Soğutma, Havalandırma, İklimlendirme Temel Hesapları, Geliştirilmiş 3. Basım, Nobel Akademik Yayıncılık, Kasım 2015
Supplementary Textbooks	1. Kuehn, T.H., Ramsey, J.M. and Threlkeld, T.L., Thermal Environmental Engineering, 3rd Ed., Prentice Hall, 1998. 2. McQuiston, FC., Parker, J. D. And Spitler, JD., Heating, Ventilating and Air Conditioning: Analysis and Design, 6th Edition, Wiley, 2004. 3) Howell, R. H., Principles of Heating, Ventilating and Air Conditioning, 8th Edition, ASHRAE, 2017.
Credit	5
Prerequisites of the Course (Attendance Requirements)	Min %70 attendance
Type of the Course	Elective
Instruction Language	Turkish
Course Objectives	Learning the methods used for the determination of thermal comfort. Learning the methods used for the determination of thermal insulation of buildings. Understanding of heating systems. Learning the methods used for the determination of system characteristics Understanding of cooling systems. Learning the methods used for the determination of system characteristics Understanding of ventilating systems. Learning the methods used for the determination of system characteristics Understanding of air-conditioning systems. Learning the methods used for the determination of system characteristics
Course Learning Outcomes	1. Knows and applies the methods used for the determination of thermal comfort. 2. Knows and applies the methods used for the determination of thermal insulation of buildings. 3. Understands heating systems. Knows and applies the methods used for the determination of system characteristics 4. Understands cooling systems. Knows and applies the methods used for the determination of system characteristics 5. Understands ventilating systems. Knows and applies the methods used for the determination of system characteristics 6. Understands air-conditioning systems. Knows and applies the methods used for the determination of system characteristics
Instruction Methods	Face to face
Weekly Schedule	1. Week Thermal Comfort 2. Week Thermal Comfort 3. Week Thermal Insulation of Buildings 4. Week Thermal Insulation of Buildings 5. Week Thermal Insulation of Buildings 6. Week Heating Installation 7. Week Heating Installation

	8. Week First Midterm, Heating Installation 9. Week Cooling Installation 10. Week Cooling Installation 11. Week Ventilation Installation 12. Week Ventilation Installation 13. Week Second Midterm,Air Conditioning Installation 14. Week Air Conditioning Installation 15. Final Exam.								
Teaching and Learning Methods <i>(These are examples. Please fill which activities you use in the course)</i>	Weekly theoretical course hours: 3 Weekly applied course hours: 0 Internet browsing, library work: 2 Designing and implementing materials:5 Report preparing Preparation of Midterm and Midterm Exam:4 Final Exam and Preparation for Final Exam:4								
Assessment Criteria		Numbers	Total Weighting (%)						
	Midterm Exams	2	60						
	Assignment								
	Application								
	Projects								
	Practice								
	Quiz								
	Percent of In-term Studies (%)		60						
	Percentage of Final Exam to Total Score (%)		40						
Attendance		Min %70							
Workload	Activity	Total Number of Weeks	Duration (weekly hour)	Total Period Work Load					
	Weekly Theoretical Course Hours	14	3	42					
	Weekly Tutorial Hours								
	Reading Tasks								
	Studies	8	2	16					
	Material Design and Implementation	10	5	50					
	Report Preparing								
	Preparing a Presentation								
	Presentations								
	Midterm Exam and Preperation for Midterm Exam	2	4	8					
	Final Exam and Preperation for Final Exam	1	4	4					
	Other (should be emphasized)								
	Total Workload			120					
	Total Workload / 25			4,8					
Course Credit (ECTS)			5						
Contribution Level Between Course Learning Outcomes and Program Outcomes	No	Program Outcomes			1	2	3	4	5
	1	Engineering graduates with sufficient theoretical and practical background for a successful profession and with application skills of fundamental scientific knowledge in the							X

	engineering practice.						
2	Engineering graduates with skills and professional background in describing, formulating, modeling and analyzing the engineering problem, with a consideration for appropriate analytical solutions in all necessary situations					X	
3	Engineering graduates with the necessary technical, academic and practical knowledge and application confidence in the design and assessment of machines or mechanical systems or industrial processes with considerations of productivity, feasibility and environmental and social aspects.						X
4	Engineering graduates with the practice of selecting and using appropriate technical and engineering tools in engineering problems, and ability of effective usage of information science technologies						
5	Ability of designing and conducting experiments, conduction data acquisition and analysis and making conclusions						
6	Ability of identifying the potential resources for information or knowledge regarding a given engineering issue						
7	The abilities and performance to participate multi-disciplinary groups together with the effective oral and official communication skills and personal confidence						
8	Ability for effective oral and official communication skills in Turkish Language and, at minimum, one foreign language						
9	Engineering graduates with motivation to life-long learning and having known significance of continuous education beyond undergraduate studies for science and technology						
10	Engineering graduates with well-structured responsibilities in profession and ethics						
11	Engineering graduates who are aware of the importance of safety and healthiness in the project management, workshop environment as well as related legal issues						
12	Consciousness for the results and effects of engineering						

		solutions on the society and universe, awareness for the developmental considerations with contemporary problems of humanity						
The Course's Lecturer(s) and Contact Informations	<p>1. Prof. Dr. İlhami HORUZ E-mail address : ilhamihoruz@gazi.edu.tr Web sitesi: http://websitem.gazi.edu.tr/site/ilhamihoruz Office no: 416</p> <p>2. Assoc. Dr. Abuzer ÖZSUNAR E-mail address : ozsunar@gazi.edu.tr Web site: http://websitem.gazi.edu.tr/site/ozsunar Office no: 410</p> <p>3. Dr. Tolga PIRASACI E-mail address : pirasaci@gazi.edu.tr Web site: http://w3.gazi.edu.tr/~pirasaci/ Office no: 401</p>							