



EGE UNIVERSITY
ENGINEERING FACULTY
CIVIL ENGINEERING DEPARTMENT
2023-2024 SUMMER TERM PLAN



STEEL STRUCTURES

Course Unit Title	Steel Structures		
Course Unit Code	506004022023.1		
Type of Course Unit	Compulsory		
Level of Course Unit	Undergraduate		
Number of ECTS Credits Allocated	3		
Theoretical (hour/week)	3		
Practice (hour/week)	0		
Laboratory (hour/week)	0		
Year of Study	4		
Semester when the course unit is delivered	1		
Name of Lecturer(s)	Assoc.Prof.Dr. Emre ERCAN		
Mode of Delivery	Formal Education		
Language of Instruction	English		
Prerequisites and co-requisites	None		
Recommended Optional Programme Components	None		
Work Placement(s)	None		
Objectives of the Course	Aiming to teach the principles of determining the dimensions of steel elements in accordance with aesthetic, economical and safety considerations, strength calculations, and draw the detailed application drawings.		
Learning Outcomes	<ol style="list-style-type: none">1. Able to analyze a given problem2. Able to create solution algorithm3. Able to apply solution algorithm4. Able to evaluate results5. Able to determine any given problem6. Able to present knowledge and experiences in written and oral		
Course Contents	Introduction to Steel Structure Design, Material and Mechanical properties of structural steel, Loads and loading combinations, Load bearing members, Design of tension members, Design of compression members, Connections and design of connections, Bolted connections, Welded connections, Allowable stress design, Column-beam connections, Truss and frame design.		
Weekly Detailed Course Contents (15 weeks)	WEEK	SUBJECTS	
		Theoretical	Laboratory
	1	Introduction to Steel Structures, Structural Systems and Overview of Steel Building, ÇYTHYDY 2018 and AISC specifications.	
	2	Material and mechanical properties of structural steel	
	3	Design Methods (ASD and LRFD) Loads and Load Combinations	
	4	Analysis and Design of Tension Members including connection elements subject to Tension	
	5	Introduction and design of Compression Members	

	6	Design of Compression Members	
	7	Design of Flexural Members (Beams)	
	8	Midterm exam	
	9	Design of Flexural Members (Beams)	
	10	Design of Beams under Shear,	
	11	Design of members under Bending and Axial Force	
	12	Connection members	
	13	Bolted Connections	
	14	Welded Connections	
	15	Final exam	
Recommended or Required Reading	<ol style="list-style-type: none"> 1. A. Vigil. Structural Steel Design.Nobel.2018. (B. Akbaş, O.Ö. Eğilmez) 2. Türk Standartları: ENV91-3,4. 3. L. Spiegel and G.F. Limbrunner, “Applied Structural Steel Design” Regents/Prentice Hall, 1993 4. C.G. Salmon and J.E.Johnston, “ Steel Structures: Design and Behavior” Harper and Row Publishers, 1980 5. E.H. Gaylord, Jr., C.N. Gaylord and J. E. Stallmeyer, “Design of Steel Structures”, McGraw-Hill, 1992. 6. “Çelik Yapıların Tasarım, Hesap ve Yapımına Dair Esaslar 2018” 		
Expectation of Assistance From Course to Education of Profession	100% Education of Profession		

ASSESSMENT

Term (or Year) Learning Activities	Quantity	Weight, %
Midterm exam	1	60
Quiz	2	40
Homeworks	3	0
TOTAL		100
Contribution of Term (Year) Learning Activities to Success Grade		40
Contribution of Final Exam to Success Grade		60
	TOTAL	100

Contribution of Learning Outcomes to Programme Outcomes*

Learning Outcomes	Programme Outcomes											
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
LO1					4							
LO2					4	2						
LO3											4	
LO4												
LO5												4
LO6								4				

*Contribution Level: 1 Very Low 2 Low 3 Medium 4 High 5 Very High