



COURSE INFORMATION FORM

Course Name	Course Code
STEEL STRUCTURES	151416348

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
6	4	0	4

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
	2	2		

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	
Objectives of the Course	To teach the design fundamentals of steel structures and the principles for proportioning of structural steel members and connections, to develop skills for 3D-imagining in design and proportioning processes.
Short Course Content	History of steel, Properties of structural steel, Design principles for steel structures, Loads and load combinations, Tension members, Compression members, Design of flexural members, Members subject to combined axial force and bending moments, Connections and fasteners, Bolted connections subject to concentric and eccentric load, Welded connections subject to concentric and eccentric load.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 To understand the structural steel material and the connection elements.	2	1, 6, 11	A
2 To define the loads acting on the structure and to model the load combinations.	2	1, 6, 11	A
3 To size the structural steel members under tension, compression and bending moments.	2, 3, 11	1, 6, 11	A
4 To design steel connections.	2, 3, 11	1, 6, 11	A
5 To be able to gain the ability to understand and interpret current methods by recognizing the importance of following current specifications.	2, 8, 9, 11	1, 6, 11	A
6			
7			
8			

*Teaching Methods 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

**Measuring Methods A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Lecture Notes. Çelik Yapıların Tasarım, Hesap ve Yapımına Dair Esaslar, Çevre ve Şehircilik Bakanlığı, 2018.
Supporting References	Aydın M.R., Günaydın A., Çelik Yapılar Tasarım Kuralları ve Uygulama Örnekleri, Birsen Yayınevi, 2023. Çelik Yapıların Tasarım, Hesap ve Yapım Esaslarına Dair Yönetmelik Uygulama Kılavuzu, T.C. Çevre ve Şehircilik Bakanlığı, 2017. Aghayere A., Vigil J., Çevirenler: Akbaş B., Eğilmez O.Ö., Çelik Yapı Tasarımı-Uygulamaya Yönelik Bir Yaklaşım, Nobel Akademik Yayıncılık, 2021. Segui W.T., Steel Design, 6th Edition, 2018. McCormac J.C and Csernak,S.F., Structural Steel Design, 6th Edition, 2017.
Necessary Course Material	Calculator, ruler, pencil, notebook, eraser

Course Schedule	
1	History of steel structures, Properties of structural steel, Rolled steel products
2	Design principles for steel structures (YDKT and GKT), Loads and load combinations
3	Design of tension members
4	Design of tension members
5	Design of compression members
6	Design of compression members
7	Design of flexural members
8	Mid-Term Exam
9	Design of flexural members
10	Connections and fasteners, Welded connections
11	Welded connections
12	Bolged connections
13	Bolged connections
14	Design of members subject to shear force
15	Design of members subject to combined axial force and bending moments (beam-column)
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	4	56
Classroom Studying Time (review, reinforcing, prestudy,...)	14	3	42
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1.5	1.5
Studying for Mid-Term Exam	1	7	7
Final Exam	1	1.5	1.5
Studying for Final Exam	1	12	12
Total workload			120
Total workload / 30			4
Course ECTS Credit			4

Evaluation	
Activity Type	%
Mid-term	40
Homework	-
Final Exam	60
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	Sufficient knowledge of engineering subjects related with mathematics, science and own branch; an ability to apply theoretical and practical knowledge on solving and modeling of engineering problems.	
2	Ability to determine, define, formulate and solve complex engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.	5
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that	5
4	Ability to develop, select and use modern methods and tools required for engineering applications; ability to effective use of information technologies.	
5	In order to investigate engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.	
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.	
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.	
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.	3
9	Understanding of professional and ethical issues and taking responsibility	4
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.	
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.	4

LECTUTER(S)				
Prepared by	Assist.Prof.Dr. Ayten Günaydın			
Signature(s)				

Date:06.06.2024