

**School of Fine Arts Design and Architecture / Architecture (English)**

**2023 - 2024 Academic Year**

**STRUCTURE I**

**Syllabus**

<b>Course Description</b>					
<b>Name</b>	<b>Code</b>	<b>Semester</b>	<b>T+A Hour</b>	<b>Credit</b>	<b>ECTS</b>
STRUCTURE I	ARC1223880	Spring Semester	2+2	3	3
<b>Prerequisites Courses</b>	STRÜKTÜRÜN TEMELLERİ				
<b>Recommended Elective Courses</b>					
<b>Language of Instruction</b>	English				
<b>Course Level</b>	First Cycle (Bachelor's Degree)				
<b>Course Type</b>	Required				
<b>Course Coordinator</b>	Assist.Prof. Tahir AKKOYUNLU				
<b>Name of Lecturer(s)</b>	Assist.Prof. Tahir AKKOYUNLU				
<b>Assistant(s)</b>					
<b>Aim</b>	Teaching basic engineering calculations for design elements, Comprehension of principles of structural systems in practice, Teaching basic principles of giving dimension to structural design elements, Teaching constructive principles of structural members.				
<b>Course Content</b>	This course contains; Orientation Week, Briefly review of basic of structures, Introduction to internal forces and cross section effects 1 (normal force, shear force, bending moment), Introduction to internal forces and cross section effects 2, Frame systems (truss) (1), Frame systems (truss) (2), Introduction to strength and basic concepts (internal force, stress), Midterm Exam, Introduction to strength and basic concepts (hook law, deformation), Simple strength states (1) (axial force, buckling), Simple strength states (2) (shear force), Simple states of strength (3) (torsion and bending moment), Space frame system, Examples from World, Space Frame System, Examples from World (Presentations).				
<b>Course Learning Outcomes</b>			<b>Teaching Methods</b>	<b>Assessment Methods</b>	
1. basic engineering calculations for design elements			12, 16, 9	A, E	
2. comprehension of principles of structural systems in practice			12, 16, 9	A, E	
3. constructive principles of structural members			12, 16, 9	A, E	
<b>Teaching Methods</b>	12: Problem Solving Method, 16: Question - Answer Technique, 9: Lecture Method				
<b>Assessment Methods</b>	A: Traditional Written Exam, E: Homework				
<b>Lecture Schedule</b>					
<b>Sequence</b>	<b>Topics</b>	<b>Preliminary Preparation</b>			
1	Orientation Week				
2	Briefly review of basic of structures				
3	Introduction to internal forces and cross section effects 1 (normal force, shear force, bending moment)				
4	Introduction to internal forces and cross section effects 2				
5	Frame systems (truss) (1)				
6	Frame systems (truss) (2)				
7	Introduction to strength and basic concepts (internal force, stress)				
8	Midterm Exam				
9	Introduction to strength and basic concepts (hook law, deformation)				
10	Simple strength states (1) (axial force, buckling)				
11	Simple strength states (2) (shear force)				
12	Simple states of strength (3) (torsion and bending moment)				
13	Space frame system, Examples from World				
14	Space Frame System, Examples from World (Presentations)				
<b>Evaluation Methods</b>		<b>Weight(%)</b>			
Midterm Exam		50			
General Exam		50			

<b>Resources</b>
to be distributed by the lecturer. 1. Why Buildings Stand up? Mario Salvadori 2. Statics and Strength of Materials for Architecture and Building Construction, Barry Onouye, Kevin Kane 3. Principles of Structures, Ariel Hanaor