

DEPARTMENT OF CIVIL ENGINEERING
COURSE SYLLABUS

Course Details				
Code	Academic Year			Semester
BAU203	2			2
Title	T	A	L	ECTS
Building Construction I	3	1	1	6
Language	German			
Level	Undergraduate	✓	Graduate	Postgraduate
Department / Program	Civil Engineering			
Forms of Teaching and Learning	Formal			
Course Type	Compulsory	✓	Elective	
Objectives	<p>This course aims to provide students with basic knowledge to understand the material strength properties of wood, steel, and reinforced concrete structural elements used in structural engineering. The goal is for students to understand and apply the design principles of structural models in accordance with Eurocode 2, 3, and 5 standards. First, it is anticipated that steel sections will be classified for cases not under stability risk and dimensioned according to Eurocode 3 under different loading conditions (bending, shear, normal force, combined effects). For reinforced concrete structural sections, the aim is to determine the appropriate section under the effects of central pressure, eccentric pressure, and tensile, bending, and shear forces. Finally, the goal is to enable students to analyze the behavior of reinforced concrete and steel structural elements under the effect of torsional moments.</p>			
Content	This course covers information and applications related to the section design of steel and reinforced concrete structural elements.			
Prerequisites	(BAU202)			
Coordinator	Assistant Professor Serdar Ulusoy			
Lecturer(s)	Assistant Professor Serdar Ulusoy			
Assistant(s)	Research Assistant Uğur Günay			
Work Placement	None			
Recommended or Required Reading				
Books / Lecture Notes	Standard, B. (2004). Eurocode 2: Design of concrete structures—. Part, 1(1), 230.			
Other Sources	Standard, B. (1993). Eurocode 3—Design of steel structures—. BS EN, 1(1), 2005.			
Additional Course Material				
Documents				
Assignments				
Exams				

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COURSE SYLLABUS

Course Composition			
Mathematics und Basic Sciences			%
Engineering	50		%
Engineering Design	50		%
Social Sciences			%
Educational Sciences			%
Natural Sciences			%
Health Sciences			%
Expert Knowledge			%
Assessment			
Activity	Count	Percentage (%)	
Midterm Exam	1	40	
Quiz			
Assignments			
Attendance			
Recitations			
Projects			
Final Exam	1	60	
		Total	100
ECTS Points and Work Load			
Activity	Count	Duration	Work Load (Hours)
Lectures	14	3	42
Self-Study	13	7	91
Assignments			
Presentation / Seminar Preparation			
Midterm Exam	1	3	3
Recitations	14	1	14
Laboratory	14	1	14
Projects			
Final Exam	1	4	4
		Total Work Load	168
		ECTS Points (Total Work Load / Hour)	6 ECTS
Learning Outcomes			
1	Gains knowledge about regulations in Structural Engineering (Eurocode 2, 3, and 5).		
2	Gains knowledge about building materials and their characteristic strength properties.		

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3	Acquires the necessary knowledge and skills for the design of steel structural elements that are not subject to stability hazards.
4	Acquires the knowledge and skills necessary for the section design of reinforced concrete components under different loads.
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Weekly Content

1	Introduction "General concepts in building construction"
2	Design Principles
3	Structural Materials (Steel)
4	Structural Materials (Reinforced Concrete)
5	Adhesion of concrete and steel
6	Dimensioning of steel sections "Determination of section class for steel profiles"
7	Dimensioning of steel sections "Elastic-elastic design of steel profiles under different loads"
8	Midterm exam
9	Dimensioning of steel sections "Elastic-plastic design of steel profiles under different loadings"
10	Buckling of reinforced concrete sections "Design of reinforced concrete sections under compression and tension effects"
11	Buckling of reinforced concrete sections "Design of reinforced concrete sections under bending effects"
12	Buckling of reinforced concrete sections "Design of reinforced concrete sections under bending effects"
13	Buckling of Reinforced Concrete Sections "Design of Reinforced Concrete Sections Under Shear Force"
14	Torsional Moment in Steel Structures
15	Torsional Moment in Reinforced Concrete Structures
16	Final Exam

Contribution of Learning Outcomes to Program Objectives (1-5)

	P1	P2	P3	P4	P5	P6	P7
1	5	3		4			3
2	5	1					3
3	5					5	



DEPARTMENT OF CIVIL ENGINEERING
COURSE SYLLABUS

4	5					5	
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Contribution Level 1: Low 2: Low-intermediate 3: Intermediate 4: High 5: Very High

Compiled by:

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