

DEPARTMENT OF CIVIL ENGINEERING  
COURSE SYLLABUS

Course Details				
<b>Code</b>	<b>Academic Year</b>			<b>Semester</b>
BAU102	1			2
<b>Title</b>	<b>T</b>	<b>A</b>	<b>L</b>	<b>ECTS</b>
Basics of Structural Theory, Design and Construction	3	1		6
<b>Language</b>	German			
<b>Level</b>	<b>Undergraduate</b>	✓	<b>Graduate</b>	<b>Postgraduate</b>
<b>Department / Program</b>	Civil Engineering			
<b>Forms of Teaching and Learning</b>	Formal			
<b>Course Type</b>	<b>Compulsory</b>	✓	<b>Elective</b>	
<b>Objectives</b>	<p>Qualification goals are, students</p> <p>a) in the history of civil engineering</p> <p>b) to introduce into the logic of the constructions.</p> <p><u>a) History of civil engineering:</u></p> <p>The aim of the course is to show the students the social role and responsibility of civil engineers right from the start of their studies, also taking sustainability issues, architectural values into account, and to provide an overview of the history of civil engineering. This is to strengthen the insight into the need to master the theoretical basics and the awareness that creativity and technology stand side by side in civil engineering.</p> <p><u>b) Logic of construction:</u></p> <p>The students are offered a cross-material insight into the load-bearing behavior of the buildings. The aim is to awaken an understanding of the power flow and load transfer of the most important types of structure and to enable simple dimensioning.</p> <p>In this module, students are taught the basics of structural engineering in such a way that the need to study the basic subjects of mathematics and mechanics is understood and the bachelor's degree begins with anticipation of the profession.</p>			
<b>Content</b>	<p>During a walk through the history of the structures, from the Greek temple to the modern skyscraper, the most important builders (formerly almost exclusively men) and their buildings are introduced to the students. It also becomes clear that the history of construction is also a history of the development of the materials, the calculation methods and the historical boundary conditions. It also creates awareness that sustainable building has always been a basic task of the building industry in terms of material consumption, durability and reusability. Parallel to the walk through history, the basics of the load-bearing behavior of arches, beams, ropes, bridge and surface structures are taught.</p>			
<b>Prerequisites</b>				
<b>Coordinator</b>				
<b>Lecturer(s)</b>				
<b>Assistant(s)</b>				
<b>Work Placement</b>				
<b>Recommended or Required Reading</b>				

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Books / Lecture Notes	Billington, Der Turm und Die Brücke Bill Addis, 3000 years		
Other Sources			
<b>Additional Course Material</b>			
Documents			
Assignments			
Exams			
<b>Course Composition</b>			
Mathematics und Basic Sciences			%
Engineering			%
Engineering Design			%
Social Sciences			%
Educational Sciences			%
Natural Sciences			%
Health Sciences			%
Expert Knowledge			%
<b>Assessment</b>			
<b>Activity</b>	<b>Count</b>		<b>Percentage (%)</b>
Midterm Exam	1		40
Quiz			
Assignments			
Attendance			
Recitations			
Projects			
Final Exam	1		60
	<b>Total</b>		<b>100</b>
<b>ECTS Points and Work Load</b>			
<b>Activity</b>	<b>Count</b>	<b>Duration</b>	<b>Work Load (Hours)</b>
Lectures	14	4	56
Self-Study	14	3	42
Assignments			
Presentation / Seminar Preparation			
Midterm Exam	1	2	12
Recitations			
Laboratory			
Projects			

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Final Exam	1	2	15
<b>Total Work Load</b>			<b>125</b>
<b>ECTS Points (Total Work Load / Hour)</b>			<b>6 ECTS</b>

**Learning Outcomes**

1	To introduce into the history of civil engineering and into the logic of construction.
2	To demonstrate to the students the social role of the civil engineer, and to provide an overview of the history of civil engineering. This is to strengthen the insight into the need to master the theoretical basics and the awareness that creativity and technology stand side by side in civil engineering
3	The students are given an insight into the structural behavior of the structures. The aim is to awaken an understanding of the power flow and load transfer of the most important types of structure and to enable simple dimensioning
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**Weekly Content**

1	Introduction Part 1
2	Introduction Part 1
3	Introduction Part 1
4	Introduction Part 1
5	Antiquity (up to 500)
6	Middle Ages (500 -1400)
7	Renaissance (1400 - 1630)
8	Enlightenment (1630-1750)
9	Enlightenment (1630-1750)
10	Iron structures (1800-1900)
11	Rope bridges (1860 - today) part 1
12	Rope bridges (1860 - today) part 2
13	Reinforced concrete (1850-1960)

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14	Concrete shells (1920 - today) and skeleton structures						
15							
Contribution of Learning Outcomes to Program Objectives (1-5)							
	P1	P2	P3	P4	P5	P6	P7
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<b>Contribution Level</b>	1: Low 2: Low-intermediate 3: Intermediate 4: High 5: Very High						
<b>Compiled by:</b>							
<b>Date of Compilation:</b>							