

DEPARTMENT OF CIVIL ENGINEERING  
COURSE SYLLABUS

Course Details				
<b>Code</b>		<b>Academic Year</b>		<b>Semester</b>
BAU107		1		Fall
<b>Title</b>		<b>T</b>	<b>A</b>	<b>L</b>
Design Techniques I Technical Drawing and Computer Aided Design		1	2	1
				<b>ECTS</b>
				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>	Knowledge in the field of technical drawing. Understanding of dimensions, standards, tolerances of components. Independent familiarization with modeling using 3D CAD systems			
<b>Content</b>	Lecture: <ul style="list-style-type: none"> <li>• Fundamentals of technical drawing as a means of information for construction and manufacturing</li> <li>• Create lines, circles, hatching, dimensions and text.</li> <li>• Information about drawing formats, scale lines and drawing head</li> <li>• Representation and dimensioning of components</li> <li>• Representation of parts using view and sections</li> <li>• Use of tolerance information and fits</li> <li>• Information about surface marks and hardness information</li> <li>• Standard series</li> <li>• Introduction to standards</li> </ul> Exercises: <ul style="list-style-type: none"> <li>• Creation of a construction drawing by hand from given standard part taking into account boundary and connection conditions</li> <li>• Modeling with a CAD system</li> </ul> Laboratory: <ul style="list-style-type: none"> <li>• Elaboration of a simple construction with all necessary drawings</li> </ul>			
<b>Prerequisites</b>	-			
<b>Coordinator</b>				
<b>Lecturer(s)</b>				
<b>Assistant(s)</b>				
<b>Work Placement</b>				
Recommended or Required Reading				
<b>Books / Lecture Notes</b>	Frey, H. Herrmann, A. Kuhn, V. (1996). Bautechnik Technisches Zeichnen, Deutschland.			
<b>Other Sources</b>				

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Additional Course Material			
Documents	-		
Assignments	-		
Exams	-		
Course Composition			
Mathematics und Basic Sciences			%
Engineering			%
Engineering Design	50		%
Social Sciences			%
Educational Sciences			%
Natural Sciences			%
Health Sciences			%
Expert Knowledge	50		%
Assessment			
Activity	Count	Percentage (%)	
Midterm Exam	1	40	
Quiz			
Assignments			
Attendance			
Recitations			
Projects			
Final Exam	1	60	
		<b>Total</b>	<b>100</b>
ECTS Points and WorkLoad			
Activity	Count	Duration	Work Load (Hours)
Lectures	14	1	14
Self-Study	14	3	42
Assignments			
Presentation / Seminar Preparation			
Midterm Exam	1	1	12
Recitations	14	2	28
Laboratory	14	1	14
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</b>

**Learning Outcomes**

1	Fundamentals of technical drawing as a means of information for construction and manufacturing
2	Representation and dimensioning of components
3	Introduction to three-dimensional computer-aided design
4	Procedure and methodical procedure for creating simple components
5	Application of engineering approaches and basic knowledge of work techniques to create simple designs
6	Use of tolerance information and fits
7	Technical Drawing Basics as Information Source of Design and Manufacturing
8	Ability to create and interpret technical drawings for simple designs.
9	Independent creation of a construction drawing according to given boundary conditions

**Weekly Content**

1	Fundamentals of technical drawing as a means of information for construction and manufacturing
2	Fundamentals of technical drawing as a means of information for construction and manufacturing
3	Representation and dimensioning of components
4	Representation and dimensioning of components
5	Introduction to Design Hierarchy and Design Methodology in Production Process (Construction Process and Production Modularization)
6	Introduction to Design Hierarchy and Design Methodology in Production Process (Construction Process and Production Modularization)
7	Introduction to Standard / Norm Information
8	Introduction to Standard / Norm Information
9	<b>Midterm Exam</b>
10	Use of tolerance information and fits
11	Use of tolerance information and fits
12	Creating Manual Technical Drawings of the Given Elements Considering Boundary and Connection Conditions
13	Elaborating the Design with All Necessary Drawings
14	Modeling with 3D Computer Aided Design
15	Modeling with 3D Computer Aided Design

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

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

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3	5	4	4				
4	5	4	4				
5	5	4	4				
<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>	16.03.2020						