

BAUINGENIEURWESEN
MODULBESCHREIBUNG

Course Details				
Code	Academic Year			Semester
BAU463	2-3-4			Fall-Spring
Title	T	A	L	ECTS
Concrete and Formwork Construction	2	3	0	6
Language	German			
Level	Undergraduate	✓	Graduate	Postgraduate
Department / Program	Civil Engineering			
Forms of Teaching and Learning	Face to face			
Course Type	Compulsory		Elective	✓
Objectives	After successful completion of the module, students are able to plan and manage the execution of complex construction tasks and construction processes from technical and economic perspectives.			
Content	Reinforced concrete construction, formwork construction, cycle planning of concrete structures, optimization of formwork deployment, scheduling and cost planning in formwork construction. Process control in concrete and formwork construction (e.g., process and formwork planning with CAD; cycle and resource planning with MS Project; cost planning, process optimization, personnel planning and quality assurance)			
Prerequisites	Module BAU352			
Coordinator	Prof. Dr-Ing. Ulrich Neuhof			
Lecturer(s)	Prof. Dr-Ing. Ulrich Neuhof			
Assistant(s)				
Work Placement	no			
Recommended or Required Reading				
Books / Lecture Notes	Lecture notes by Prof. Neuhof, Schalungsplanung im Baubetrieb by Malpricht/Rupp			
Other Sources	Documentation from formwork manufacturers PERI, Doka, Paschal and Meva			
Additional Course Material				
Documents	Optionally, the international PERI Construction Management Exercise can be completed as a project – after consultation, coordination and approval by the lecturer!			
Assignments				
Exams				
Course Composition				
Mathematics and Basic Sciences				%
Engineering	100			%

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Engineering Design		%
Social Sciences		%
Educational Sciences		%
Natural Sciences		%
Health Sciences		%
Expert Knowledge		%

Assessment

Activity	Count	Percentage (%)
Midterm Exam		
Quiz		
Assignments		
Attendance		
Recitations		
Projects	1	60
Final Exam	Project Presentation with Colloquium	40
Total		100

ECTS Points and Work Load

Activity	Count	Duration	Work Load (Hours)
Lectures	14	2	28
Self-Study	14	2	28
Assignments			
Presentation / Seminar Preparation	1	12	12
Midterm Exam			
Recitations	14	2	28
Laboratory			
Projects	9	8	72
Final Exam			
Total Work Load			168
ECTS Points(Total Work Load /Hour)			6

Learning Outcomes

1	Knowledge of 2D and 3D formwork planning for reinforced concrete structures
2	Independent cycle, scheduling, and cost planning in concrete and formwork construction
3	Team-based project work
4	Team and individual presentation
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Weekly Content

1	Formwork construction fundamentals
2	Cycle planning in concrete and formwork construction Part 1: Base slabs and walls
3	Cycle planning in concrete and formwork construction Part 2: Slabs
4	Cycle planning with MS Project and cost planning
5	Planning of concrete placement including logistics
6	Prozess- und Schalungsplanung mit CAD
7	Project examples
8	Project work
9	Project work
10	Project work
11	Project work
12	Project work
13	Project submission and presentation preparation
14	Presentation and colloquium
15	Midterm exam week is kept free according to the schedule

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

	P1	P2	P3	P4	P5	P6	P7
1	5	4	2	3	3	4	5
2	5	4	2	3	3	4	5
3	5	5	4	4	5	4	5
4	5	5	4	4	5	4	5
5	2	4	5	2	5	1	5
6							
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10							
11							
12							
Beitragsgrad: 1: Low 2: Low-intermediate 3: Intermediate 4: High 5: Very High							
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Compiled by:		Prof. Dr.-Ing. Ulrich Neuhof					
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