DEPARTMENT OF CIVIL ENGINEERING
COURSE SYLLABUS

Course Details

Code	Academic Year			Semester
BAU201	2			1
Title	**T**	**A**	**L**	**ECTS**
Construction Chemicals and Building Materials I	2	1	2	6

Language	German					
Level	**Undergraduate**	✓	**Graduate**		**Postgraduate**	
Department / Program	Civil Engineering					
Forms of Teaching and Learning	Formal					
Course Type	**Compulsory**	✓	**Elective**			
Objectives	In the construction chemistry and building materials, the learning results from the building materials and construction chemicals I and II modules are deepened in terms of content, especially from a chemical point of view. In addition, the students can put the theory-based learning content into practice in experiments in the laboratory.					
Content	Fundamentals of chemistry for civil engineers (structure of matter, atomic models, chemical bonds and reaction) Elements and their connections with particular importance in construction (e.g. alkalis, alkaline earths, silicon, aluminum, ...) Metals: manufacture, properties and corrosion Acids and bases, pH calculation Organic chemistry (simple basics) Physical chemistry (reaction kinetics) Practical work in the chemical laboratory: handling laboratory equipment, titration, filtration, simple detection reactions, ... Building materials testing: Basics of destructive and non-destructive building materials testing Practical work in the building materials laboratory: use of destructive and non-destructive building material tests with evaluation and interpretation of the test results					
Prerequisites						
Coordinator						
Lecturer(s)						
Assistant(s)						
Work Placement						

Recommended or Required Reading

Books / Lecture Notes	Dietmar Stephan, Baustoffchemie, Beuth, 7. Auflage 2014, 224 S. Roland Benedix, Bauchemie (als e-book in der Bib) ZfP-Bau-Kompendium: www.bam.de/microsites/zfp_kompendium/verz/findex_abc.html
Other Sources	

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Additional Course Material	
Documents	
Assignments	
Exams	

Course Composition		
Mathematics und Basic Sciences		%
Engineering		%
Engineering Design		%
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	5	70
Self-Study	14	3	42
Assignments			
Presentation / Seminar Preparation			
Midterm Exam	1	2	10
Recitations			
Laboratory			
Projects			
Final Exam	1	2	15
		Total Work Load	**137**

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ECTS Points (Total Work Load / Hour)	**6 ECTS**
Learning Outcomes	
1	Students can apply the basic relations of chemistry to the building material and structure chemical processes and subtract macroscopic building material properties from microscopic properties and atomic structure.
2	They learn basic working techniques in a chemistry lab and can summarize practical lab experiments in protocols.
3	With a short repetition of the building material test, students gather information about the test procedures and can practice it safely by working in lab internships.
4	Theoretical and practical skills for laboratory applications are learned, especially in the field of building materials and construction chemistry, and these can be evaluated and interpreted independently from a scientific perspective.
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WeeklyContent	
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15	

Contribution of Learning Outcomesto Program Objectives (1-5)							
	P1	P2	P3	P4	P5	P6	P7
1							
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11							
12							

Contribution Level	1: Low 2: Low-intermediate 3: Intermediate 4: High 5: Very High
Compiled by:	
Date of Compilation:	