



Number of module	Name of module	Lecturer
BIWO-01	Building Materials	Prof. Mechtcherine
Content and qualification aim	<p>Content of the module:</p> <ul style="list-style-type: none">• Microstructure and chemical composition of building materials• Physical and mechanical properties of construction materials (timber, steel, concrete, masonry); durability of construction materials• Materials for strengthening and repair (polymers, polymer modified mortar/concrete, fibre reinforced polymer-based composites, shotcrete)• High performance cement-based composites for new construction and rehabilitation (self-compacting concrete, fibre reinforced concrete, textile reinforced concrete, ultra-high performance concrete)• Modelling and numerical simulation of concrete-like materials in their fresh states (incl. simulation of mixing, transportation, placing and compaction)• Modelling the deformation and cracking behaviour of cement-based materials; fracture mechanics of concrete; numerical simulation of the crack development due to thermal and hygral changes <p>After having finished the module successfully students can assess the microstructure and properties of construction and repair materials and can apply methods for their modelling and numerical simulation.</p>	
Type of course	4 hours of lectures, 2 hours of exercises per week, and self-study	
Requirements for study		
Practical use of the module	Obligatory module in the Master's programme: Advanced Computational and Civil Engineering Structural Studies. The module provides the prerequisites for the elective modules BIWE-01, BIWE-02, BIWE-03, BIWE-10 and BIWE-11.	
Requirements for the award of credits	<p>The credits are awarded if the module examination is successfully passed.</p> <p>The module examination consists of a written examination (180 min).</p>	
Credits and grades	<p>8 credits can be acquired for this module.</p> <p>The grade is the grade of the written examination.</p>	
Frequency of module	The module is offered every academic year (winter semester).	
Workload	The workload is 240 working hours.	
Duration of the module	1 semester	

Recommended literature	
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