



Number of module	Name of module	Lecturer
BIWE-07	Computational Building Physics	Prof. Grunewald
Content and qualification aim	<p>Content of the module:</p> <ul style="list-style-type: none">• Indoor Climate Design<ul style="list-style-type: none">○ Human comfort and indoor air quality; pollutants○ Environmental and indoor loads; user behaviour○ Thermal protection in summer time and in hot climates• Coupled Heat, Air and Moisture Transfer in Building Envelope Systems<ul style="list-style-type: none">○ Hygrothermal dimensioning of construction details○ Durability aspects, assessment of damage potentials and protective measures○ Protection of cultural valuables in the built environment• Whole Building Energy & Hygrothermal Simulations<ul style="list-style-type: none">○ Building physical building model development○ Passive and active measures to buffer energy and moisture in constructional systems○ Energetic optimization of buildings with regard to their environment <p>After having finished the module successfully students are able to apply commonly used and in-house computational models in the fields above.</p>	
Type of course	2 hours of lectures, 1 hour of exercise per week, and self-study	
Requirements for study	Basic knowledge of building physics and capabilities in the understanding of transport phenomena in air spaces and porous building materials corresponding to the Bachelor's level, as well as study competence from module BIWO-05	
Practical use of the module	The module is one of the elective modules in the Master's programme: Advanced Computational and Civil Engineering Structural Studies, of which seven have to be chosen.	
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>4 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 (summer semester).	
Workload	The workload is 120 working hours.	
Duration of the module	1 semester	
Recommended literature	<p>For programme downloads and literature check:</p> <p>http://www.bauklimatik-dresden.de/</p> <p>http://www.eere.energy.gov/buildings/energyplus/</p>	

	http://www.designbuilder.co.uk/
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