



Number of module	Name of module	Lecturer
BIWE-11	Cable-Stayed Bridges	Prof. Stroetmann
Content and qualification aim	<p>Content of the module:</p> <ul style="list-style-type: none">• Action forces for cable-stayed bridges• Sizing, dynamics, details, fabrication and installation of stay cables• Calculations of cable-stayed bridges in concrete or steel considering non-linear theory and aerodynamic stability of cables, girders, and pylons• Design and construction of cable-stayed bridges• Examples of concrete, steel composite, and hybrid cable-stayed bridges• Design and dimensioning of cable-stayed bridges in accordance with Eurocodes• Design loads for bridges• Design of steel, composite steel, and concrete bridge girders• Selected construction details of bridges <p>The aim of this module is to obtain knowledge on the planning, design, calculation, and design principles of cable-stayed bridges. After successful completion of the module, the students have the ability to apply the basics of the design, construction, and calculation of cable-stayed bridges. In addition, they know the manufacturing and assembly processes of such bridges.</p>	
Type of course	2 hours of lectures, 1 hour of exercise per week as well as self-studies	
Requirements for study	Knowledge in design and construction of steel, concrete and composite structures at the level of a Bachelor's degree as well as knowledge from the modules BIWO-01 and 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 (90 min).</p>	
Credits and grades	<p>4 credits can be acquired for this module.</p> <p>The grade of the module is the grade of the written examination.</p>	
Frequency of the 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	Svensson, H.: Cable-Stayed Bridges-40 years of experience world-wide. Published by Ernst & Sohn, Berlin 2012
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