Module number	Module name	Lecturer
BIWE-02	Form Finding of Lightweight Structures	Prof. Beckh structural-design@tu-dresden.de
Qualification objectives	Students will master selected form finding methods for lightweight structures in theory and in practical application, focusing on shells structures, cable nets and membrane structures. They will become familiar with the theoretical background of these selected techniques and will be able to utilize them in practice.	
Content	The module will cover various strategies and form finding methods for lightweight structures subject to membrane forces. The course comprises an introduction to the conceptual design, static calculation and structural design of lightweight structures as well as an introduction to theoretical foundations of different form finding methods. In addition, the exercises will present examples of practical application.	
Teaching and learning formats	Lecture 2 hours per week and practical 1 hour per week plus independent study. The lecture and practical will be taught in English.	
Prerequisites for participation	Participants must have knowledge of the material taught in the construction materials, continuum mechanics, tensor calculation, energy methods and finite element method (FEM) modules as well as the studies mentoring program and methodological competence.	
Usability	This module is an elective compulsory module in the Advanced Computational and Civil Engineering Structural Studies – ACCESS master's degree program, of which seven must be selected.	
Requirements for earning credit points	Credit points are awarded upon passing the module examination. The module examination comprises a written test (90 minutes). The prerequisite for taking the exam is a passed, ungraded semester paper with the scope of 60 hours.	
Credit points and grades	Students can earn 4 credit points from the module. The module grade corresponds to the grade of the written test.	
Frequency of the module	The module is offered each year in the summer semester.	
Workload	The workload comprises about 120 hours.	
Duration of the module	1 semester	
Supplementary references	Sigrid Adriaenssens, Philippe Block, Diederik Veenendaal: Shell Structures for Architecture: Form Finding and Optimization. Taylor and Francis. 2014	