

Faculty	Architecture, Civil and Environmental Engineering
Course Title	Construction & Design of Built Structures
Number of ECTS credits	6
Hours per week (SWS)	4 +1
Semester	Autumn Term (Winter Semester)
Course objective	<p>By passing this module, students are able to explain and present the essential framework conditions, load assumptions and supporting structures of environmental engineering structures, describe them quantitatively and qualitatively using suitable methods and apply them in simple planning and design tasks. They are able to</p> <ul style="list-style-type: none"> • recognize the flow of forces in supporting structures and to formulate and calculate static equilibrium conditions • understand states of force and deformation and describe stress states in simple support structures • understand the fundamentals of steel and reinforced concrete construction as well as the support dimensioning in steel and reinforced concrete • recognize fundamentals of framework design as well as principles of structural design • name fundamentals of construction design with regard to heat protection, moisture protection, sound insulation and fire protection.
Prerequisites	None; however, modules of the 1 st and 2 nd year of study in ISU (Bachelor) or equivalent knowledge and skills are recommended.

Recommended reading	Students will receive a current literature list at the beginning of the course.
Teaching methods	Seminars Module-related tutorial
Assessment methods	Written exam, 90 min (PL)
Language of instruction	English
Name of lecturer	Prof. Dr. Lars Jürgensen
Email	Lars.Juergensen@hs-bremen.de
Link	https://www.hs-bremen.de/mam/hsb/fakultaeten/F2/U/u5.4_cdbb_const construction and design of built structures.pdf
Course content	<p>The module teaches selected topics on structural design and construction. More specifically, the following aspects are covered:</p> <ul style="list-style-type: none"> • Stress mechanics: concepts, modelling • Stress mechanics: external loads, calculation of forces and moments • Stress mechanics: internal forces, state lines • Stress mechanics: stresses, strains • Constructions in environmental engineering: Foundations, requirements, forms • Functions and implementations • Construction principles • Constructions in wastewater systems • Constructions when handling water-polluting substances