



**Course number: BIB 52370**  
**Selected Topics in Structural Engineering**  
**Study Level: Bachelor / Undergraduate**

**Prof. Dr. Heiko Denk**  
**Language of Instruction: English**  
**ECTS Credits: 2**

Within this lecture selected topics in the field of structural engineering will be covered. In particular, constructions with prefabricated elements and the design of bracings of multi-storey buildings with and without a rigid basement box will be discussed. The fundamentals of the design of deep foundations and combined pile-platefoundations are taught.

The topics in detail:

Prefabricated parts:

- Load cases: transport condition, impact, fire
- precast girders
- supports and consoles
- precast columns with and without integrally formed foundations
- bracing walls
- Fire walls (constructive and building law aspects)

Bracing:

- modelling bracing systems
- rigid basement box
- load transmission through intersecting walls

Deep foundations:

- overview of deep foundations
- modelling and design of pile foundations
- modelling, design, and building law for a combined-pile-plate-foundation

The theory learned is practiced by a lecture-accompanying project. If possible, field trips to construction sites in the surrounding area are carried out.