

Faculty of Architecture

Department: Construction Engineering

Professional field: 5.7. Architecture, Civil Engineering and Geodesy

Specialty: Building Constructions

Educational-qualification degree: Master

COURSE DESCRIPTION

1. Course title: **Renovation and Strengthening of Building Structures**
2. Course code: **CIE 3001**
3. Type of course: **compulsory**
4. Level of course: **Master**
5. Year of study: **first**
6. Semester when the course is delivered: **first**
7. Number of ECTS credits allocated: **6 (3 – lectures, 1,5 – seminars and coursework and 1,5 – practice)**
8. Name of lecturer: **Assoc. Prof., Eng. Dariya Mihaleva, PhD**
9. Learning outcomes of the course: as a result of the course students will know the preliminary studies necessary to design the restoration and strengthening of structures, materials and connecting devices, the characteristics of static and dynamic analysis, sizing and detailing in the design of renovation and strengthening of structures, will be able to determine the preliminary variant tests and techniques for renovation and strengthening of reinforced concrete, masonry and steel structures.
10. Mode of delivery: **face-to-face**
11. Prerequisites and co-requisites: students have to possess the necessary theoretical and practical knowledge in Construction Statics, Theory of Elasticity and Stability and Dynamics of Building Structures, which are covered in the Bachelor course of Construction Engineering.
12. Course contents: to form knowledge regarding the design of renovation and strengthening of building structures, materials and connecting devices, peculiarities of building and use of modern construction methods.
13. Recommended or required reading:
 - Игнatieв, Н., и др., Някои особености при възстановяване и усилване на повредени от земетръс стоманобетонни конструкции, Резон, София, 1995.
 - Венков, В., Игнatieв Н., Възстановяване и усилване на масивни конструкции на сгради, Техника, София, 1988.
 - Наредба № РД-02-20-2 за проектиране на сгради и съоръжения в земетръсни райони, 2012.
 - БДС EN 1998-3:2005, Еврокод 8: Проектиране на конструкциите за сеизмични въздействия, Част 3: Оценка и възстановяване/усилване на сгради, БИС, 2005.
 - Васева, Е., Сотиров, П., Игнatieв, Н., Михалева, Д., Павлов, Ив., Практическо ръководство по прилагането на Еврокод 8-3 "Проектиране на конструкции за сеизмични въздействия. Част 3: Оценка и възстановяване/усилване на сгради", КИИП, София, 2012.
14. Planned learning activities and teaching methods: **lectures, seminars, coursework, practice, contact hours, independent work.**
15. Assessment methods and criteria: defense of a course project – a separate grade, written and oral examination; as elements of assessment during training shall be: attending classes - 10%, oral examination - 20% and written examination - 70%. The final examination constitutes two questions from the conspectus. Reasons for the evaluation, students receive on the day of the examination, based on the knowledge demonstrated. The practice is assessed by defense of a report of the subject of the practical work.
16. Language of instruction: **Bulgarian, English**
17. Work placement is **envisaged in the curriculum – 15 hours**