

## Tárgytematika / Course Description Design of structures 2

EKNM\_SETA015

**Tárgyfelelős neve /**

**Teacher's name:** dr. Szép János

**Félév / Semester:** 2023/24/1

**Beszámolási forma /**

**Assesment:** Folyamatos számonkérés

**Tárgy heti óraszám /**

**Teaching hours(week):** 1/1/0

**Tárgy féléves óraszám /**

**Teaching hours(sem.):** 0/0/0

### OKTATÁS CÉLJA / AIM OF THE COURSE

This course presents design issues for structural structures, related to architectural geotechnical, building engineering aspects, through case studies. The project task is, planning a basic structural part of students' diploma work. (material selection, foundation, determining the size of structural elements, modeling). We use software for analyzing and design the structures. The ultimate goal is the design and dimensioning of the structure of the building in the student's diploma work.

### TANTÁRGY TARTALMA / DESCRIPTION

Week 1. Material selection criteria for structures. Relation of material type and span.

Week 2: The process of structure selection.

Week 3: International and Hungarian examples of innovative steel structures (case studies).

Week 4: International and Hungarian examples of innovative reinforced concrete structures (case studies).

Week 5: International and Hungarian examples of innovative wood structures (case studies).

Week 6: Foundation issues, foundation types, characteristics, soil-structure interaction. The selection of foundation.

Week 7: Geotechnical case Studies

Week 8: Student's presentation 1.

Week 9: Special Issues of structures (dilation, bracing, etc.)

Week 10: Economical, durability issues for structures. Environment aspects.

Week 11: Modification and renovation of existing buildings

Week 12: Complex computer modeling of structures

Week 13: Consultation.

Week 14: Student's presentation 2.

### SZÁMONKÉRÉSI ÉS ÉRTÉKELÉSI RENDSZERE / ASSESSMENT'S METHOD

There are 40-40 points based on a partial deadline, 120 points in total. Each subtask for the signature is min. 20 points

to be scored. Depending on the total score, the subject is:

0-59 points: fail (1)

60-75 points: pass(2)

76-85 points: satisfactory (3)

86-95 points: good(4)

96-120 points: excellent (5)

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## **KÖTELEZŐ IRODALOM / OBLIGATORY MATERIAL**

Mario Salvadori : The Art of Construction: Projects and Principles for Beginning Engineers & Architects

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## **AJÁNLOTT IRODALOM / RECOMMENDED MATERIAL**