

## COURSE SYLLABUS AND COURSE REQUIREMENTS

### ACADEMIC YEAR 2022/23 SEMESTER 2

**Course title** *Building Constructions 4*

**Course Code** EPB104ANEP

**Hours/Week: le/pr/lab** 3/\_/\_

**Credits** 3

**Degree Programme** *Civil Engineering Bsc*

**Study Mode** *Full time education*

**Requirements** *mid semester grade*

**Teaching Period** *2022/23 spring semester*

**Prerequisites** *Building Construction 3.*

**Department(s)** *Department of Civil Engineering*

**Course Director** *László Perényi, associate professor*

**Teaching Staff** *Tibor Zoltán Dányi, assistant professor*

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Office hour: Wednesday 11.15-12.45

## COURSE DESCRIPTION

During the last two semesters students learned about the construction methods of load-bearing walls from the foundation up to the roof structure. During this semester students will learn about the constructional solutions of the reinforced concrete skeleton structures and we will get an overview of the topics of waterproofing, flooring and the separation wall systems. The course includes:

- There are lectures on the topics of the course, each week. The theoretical knowledge will be deepened on practical lessons delivered by the teacher. The students need to prepare the following drawings during the semester:
- Final construction drawings of a reinforced concrete framed building: floor plans of all different levels M1:50, 2 sections M1:50, 4 details M1:5 or M1:10; Final construction drawings of a flat roof insulation: floor plans M1:50, 2 sections M1:50, 3 details M1:5 or M1:10; Flooring plan: layout M1:50, 3 details M1:5
- Students should take 2 tests on topics studied on lectures. Can not be used any note.
- During the semester the students can prepare a study according to the topics of lectures for 10 extra points. The theme of the study must be approved by the teacher. These extra points count only if at least 50 points have been obtained from 2 tests and the drawings.
- Kahoot minutes: Maximum 10 extra points earned with Kahoot! count only if at least 50 points have been obtained from 2 tests and the drawings.

## SYLLABUS

### 1. GOALS AND OBJECTIVES

The aim of the course is that students be able to make construction plan-like solutions based on the previous studies. Students need to work individually and in groups.

### 2. COURSE CONTENT

|                 | TOPICS                                                                                                                                                                                                            |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>LECTURE</b>  | <ol style="list-style-type: none"> <li>1. Reinforced Concrete Frames</li> <li>2. Flat Roofs</li> <li>3. Insulations in Soil</li> <li>4. Floor structures</li> <li>5. Wet-and Dry-bound Partition Walls</li> </ol> |
| <b>PRACTICE</b> | <ol style="list-style-type: none"> <li>1. Reinforced Concrete Frames</li> <li>2. Waterproofing of flat roofs</li> <li>3. Flooring plan</li> </ol>                                                                 |

## DETAILED SYLLABUS AND COURSE SCHEDULE

ACADEMIC HOLIDAYS INCLUDED

### LECTURE

| week | Topic                                                                                                                                                | Compulsory reading;<br>page number<br>(from ... to ...) | Required tasks<br>(assignments, tests,<br>etc.)            | Completion date, due<br>date |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|------------------------------------------------------------|------------------------------|
| 1.   | Formation of framed buildings; structural systems. Reinforced concrete frames -history, principles of design, elements, details / foundations, slabs | [1.] Chapter one 1-24                                   | Architectural Floor Plan of a Reinforced Concrete Building | 8th week                     |
| 2.   | Kahoot! minutes<br>Reinforced concrete frames / rigidity, stairs                                                                                     | [2.] 250-264                                            | Architectural Section of a Reinforced Concrete Building    | 8th week                     |
| 3.   | Kahoot! minutes<br>Construction joints, movement joints                                                                                              | [1.]Chapter one 25-31                                   | Architectural Section of a Reinforced Concrete Building    | 8th week                     |
| 4.   | Kahoot! minutes<br>Flat roof insulation / structural design principles                                                                               | [2.] 238-239                                            | Architectural Details of a Reinforced Concrete Building    | 8th week                     |
| 5.   | Kahoot! minutes<br>Flat roof insulation / not accessible roofs, terrace roofs                                                                        | [2.] 239-243                                            |                                                            |                              |
| 6.   | Kahoot! minutes<br>Green roofs, and roofs accessible by car                                                                                          | [2.] 239-243                                            |                                                            |                              |

|     |                                                                                 |                           |                      |            |
|-----|---------------------------------------------------------------------------------|---------------------------|----------------------|------------|
| 7.  | Kahoot! minutes<br>Utilised roofs / structural design principles                | [3.] 7.09                 | Roof Insulation Plan | 13th week  |
| 8.  | Test 1                                                                          |                           | 1st test             | 03/28/2023 |
| 9.  | Spring Break                                                                    |                           |                      |            |
| 10. | Kahoot! minutes<br>Insulation against utility and operating water               |                           |                      |            |
| 11. | Kahoot! minutes<br>Insulations in soil, structural design principles            | [3.] 1.11<br>[2.] 455-464 |                      |            |
| 12. | Kahoot! minutes<br>Insulations in soil, ex post wall insulations                | [3.] 1.11                 |                      |            |
| 13. | Kahoot! minutes<br>Floor structures, acoustic, traditional flooring, dry floors | [2.] 466-475              | Flooring Plan        | 15th week  |
| 14. | Kahoot! minutes<br>Wet- and dry-bound partitions                                | [3.] 5.26, 5.29           |                      |            |
| 15. | Test 2                                                                          |                           | 2nd test             | 05/16/2023 |

### 3. ASSESSMENT AND EVALUATION

#### **ATTENDANCE**

*In accordance with the Code of Studies and Examinations of the University of Pécs, Article 45 (2) and Annex 9. (Article 3) a student may be refused a grade or qualification in the given full-time course if the number of class absences exceeds 30% of the contact hours stipulated in the course description.*

#### **Method for monitoring attendance**

*Attendance sheet*

#### **ASSESSMENT**

#### **Course resulting in mid-term grade (PTE TVSz 40§(3))**

#### **Mid-term assessments, performance evaluation and their ratio in the final grade**

| Type                                        | Assessment    | Ratio in the final grade |
|---------------------------------------------|---------------|--------------------------|
| Test 1                                      | max 20 points | 20 %                     |
| Test 2                                      | max 20 points | 20 %                     |
| Plan of RC Framed Building                  | max 20 points | 20 %                     |
| Roof Insulation Plan                        | max 15 points | 15 %                     |
| Flooring Plan                               | max 15 points | 15 %                     |
| Participation/Progress/Effort/Attitude      | max 10 points | 10 %                     |
| Extra points (Kahoot! minutes, Case study ) | max 20 points |                          |

#### **Opportunity and procedure for re-takes (PTE TVSz 47§(4))**

*All tests and drawing tasks can be repeated/improved once in the first week of the examination period.*

#### **Grade calculation as a percentage**

| Course grade     | Performance in % |
|------------------|------------------|
| excellent (5)    | 85 % ...100%     |
| good (4)         | 70 % ... 84 %    |
| satisfactory (3) | 55 % ... 69 %    |
| pass (2)         | 40 % ... 54 %    |
| fail (1)         | below 40 %       |

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## **4. SPECIFIED LITERATURE**

*In order of relevance. (In Neptun ES: Instruction/Subject/Subject details/Syllabus/Literature)*

### **COMPULSORY READING AND AVAILABILITY**

- [1.] R. Barry: THE CONSTRUCTION OF BUILDINGS Volume 4 ([https://www.academia.edu/19561839/construction\\_of\\_building\\_barry\\_4](https://www.academia.edu/19561839/construction_of_building_barry_4))
- [2.] Andrea Deplazes: CONSTRUCTING ARCHITECTURE ([http://www.sze.hu/~eptansz/Deplazes\\_Constructing\\_Architecture.pdf](http://www.sze.hu/~eptansz/Deplazes_Constructing_Architecture.pdf))
- [3.] Francis D. K. Ching : Building construction illustrated (PTE MIK Library)

### **RECOMMENDED LITERATURE AND AVAILABILITY**

- [4.] Alexander Reichel, Kerstin Schultz: SUPPORT/MATERIALIZE (PTE MIK Library)