

**General Information:**

<b>Name of Course:</b>	<b>BUILDING CONSTRUCTION IV.</b>
<b>Course Code:</b>	EPE102AN
<b>Semester:</b>	4th
<b>Number of Credits:</b>	7
<b>Allotment of Hours per Week:</b>	4 Practical Lessons and 3 Lectures / Week
<b>Evaluation:</b>	Exame
<b>Prerequisites:</b>	<b>Completed Building Construction III.</b>

**Instructors:**

**Dr Gergely SZTRANYÁK, assistant professor**

Office: 7624 Hungary, Pécs, Boszorkány u. 2. Office No B-322

E-mail: [sztranyak.gergely@mik.pte.hu](mailto:sztranyak.gergely@mik.pte.hu)

Office Phone: +36 72 503 650 / 23818

**Dr Balázs KOKAS, assistant professor**

Office: 7624 Hungary, Pécs, Boszorkány u. 2. Office No B-322

E-mail: [balazs.kokas@mik.pte.hu](mailto:balazs.kokas@mik.pte.hu)

Office Phone: +36 72 503 650 / 2381

**Dr Tibor Zoltán DÁNYI, assistant professor**

Office: 7624 Hungary, Pécs, Boszorkány u. 2. Office No B-322

E-mail: [danyitoborzoltan@mik.pte.hu](mailto:danyitoborzoltan@mik.pte.hu)

Office Phone: +36 72 503 650 / 23818

### General Subject Description

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

### Learning Outcomes

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.

### Subject Content

During the semester students learn the construction design methods of using reinforced concrete skeleton structures, flat roofs, waterproofings, and dry walls.

The topics of the lectures are discussed more detailed during the practical lessons, where students deepen their knowledge through the drawings done together with the teacher. According to these students will be able to make their own drawing tasks alone.

The tasks and requirements are given according to the syllabus. All these information along with the lectures and guidance notes are continuously uploaded to **Microsoft TEAMS**.

### *Examination and Evaluation System*

#### General Requirements

*In all cases. Annex 5 of the Statutes of the University of Pécs, the **Code of Studies and Examinations (CSE) of the University of Pécs** shall prevail. <https://english.mik.pte.hu/codes-and-regulations>*

Attending is required for all practical lessons and lectures. Unexcused absences adversely effects the grade, and in case of absence more than 30% of the total number of lessons is a reason for failing the class. To be in class at the beginning time and stay until the scheduled end is required. More than 20 minutes delay is counted as an absence. In case of illness or family emergency students must present a valid excuse, such as a doctor's note.

**During the semester students need to get enough points for the signature in the study period then make an exam in the exam period. According to the achieved points of the two periods students can reach their grade.**

In order to get the signature for the course students need to hand in **all drawing tasks** achieving the minimum points for them and do **both written tests**.

## Drawing Tasks

**Drawing 1** – Plans of the reinforced concrete skeleton structure building (20p)

- floor plans, sections in scale 1:100, 1:50,
- facades in scale 1:100
- details in scale 1:5, 1:10

**Drawing 2** – Plan of the waterproofing system of the top of the building (flat roof) (20p)

- floor plans, section(s) in scale 1:50
- details in scale 1:5, 1:10

**Drawing 3** – Plan of the waterproofing system in the ground (20p)

- floor plans, section(s) in scale 1:50, 1:20
- details in scale 1:5, 1:10

**The drawings must be submitted online (uploaded to a given folder in Microsoft Teams) on the given weeks at the beginning of the class. The evaluation takes place during the practice. In the second part of the practice Students can learn their results and ask questions.**

**If somebody does not get the minimum points (50%) for the drawing, or does not submit the drawing, can submit or correct the drawings only on the 15<sup>th</sup> week.**

**If somebody after the 15<sup>th</sup> week's submission has a drawing with lower points than the minimum, gets the 'not completed' remark (does not get the signature) at the end of the semester.**

## Written Tests

**The written test will take place in the time of the lecture. In order to get the signature Students have to reach the minimum points of both written test.**

**On the 16<sup>th</sup> week only once Students can correct their drawings and the written test if they are below the minimum points. In this case Students can achieve just the minimum points required for the signature.**

### Points Acquired in the Study Period

TASK	TOPIC	MAXIMUM POINTS
Written Test I.	Topics of the lectures (Week 1-6)	20 (min.10 needed)
Written Test II.	Topics of the lectures (Week 8-13)	20 (min.10 needed)
Drawing 1	Plans of the reinforced concrete skeleton structure building	20 (min.10 needed)
Drawing 2	Plan of the waterproofing system of the top of the building	20 (min.10 needed)
Drawing 3	Plan of the waterproofing system in the ground	20 (min.10 needed)
	<b>TOTAL:</b>	<b>100 POINTS</b>
	<b>MIN.:</b>	<b>51 POINTS</b>

#### Requirements for getting the signature:

- achieved minimum points of the written tests and drawings

#### Students can receive offered grade according to the following requirements:

- achieved minimum points of the written tests and drawings (signature)
- minimum 71 points achieved in the study period
- all drawings submitted in the study period in time (week 5 / 9 / 14 )

offered grade 4      71-84 p  
offered grade 5      85-100 p

### Requirements in the Exam Period

PARTS OF THE EXAM	TOPIC	MAXIMUM POINTS
Drawing part	Drawing exercises, no aid allowed (180 minutes)	70 (min. 35)
Written part	According to given topics (60 minutes)	30 (min. 15)
	<b>TOTAL:</b>	<b>100 POINTS</b>
	<b>MIN.:</b>	<b>51 POINTS</b>

### Topics of the Written / Oral Exam

1. Reinforced concretenskeleton structures (structural systems, structural elements, thermal bridges)
2. Constructional design methods of flat roofs (materials, structural details, design methods)
3. Flat roofs – non-walkable
4. Flat roofs – terrace roofs
5. Flat roofs – green roofs, roofs for car parking
6. Design methods of waterproofing in wet functions (materials, structural details, design methods)
7. Constructional design methods of waterproofing in the ground (groundwater)
8. Constructional design methods of waterproofing in the ground (with constantly hydrostatic pressure)
9. Constructional design methods of waterproofing in the ground (with temporary hydrostatic pressure)
10. Constructional design methods of follow-up wall waterproofing
11. Constructional design methods of traditional floors
12. Constructional design methods of dry floors
13. Constructional design methods of dry separation walls

### Readings and Reference Materials Required

- Lecture notes, guidance notes
- Francis D. K. Ching: Building Structures Illustrated. Wiley, USA
- Francis D. K. Ching: European Building Construction Illustrated. Wiley, USA
- Andrea Deplazes: Constructing Architecture. Birkhäuser, Basel

### Task Layout Requirements

The drawing tasks are needed to be done in horizontal A/2 format, on technical drawing sheets.

The layout: frames for all sheets (10 mm from the edge of the paper), descriptions/data in the bottom right corner.

Data in the bottom right corner:

- name of the course
- name of the student, Neptun Code
- name of the drawing task, name of the plan
- scale of the plan
- number of the plan
- date of preparation

The drawings have to be submitted in a covering sheet in size A/2 (a folded A/1) name of the course, student name, Neptun Code, name of the degree, date.

The drawing tasks of the semester has to be done by hand (just 2D drawings, see attachment).

**According to the achieved points students can reach the following grades.**

**(Grade 5) Outstanding work:** Execution of work is thoroughly complete and demonstrates a superior level of achievement overall with a clear attention to detail in the production of drawings and other forms of presentation. The student is able to synthesize the course material with new concepts in a thoughtful manner, and communicate his/her ideas in an exemplary way.

**(Grade 4) High quality work:** Student work demonstrates a high level of craft, consistency, and thoroughness throughout drawing and presentation work. The student demonstrates a level of thoughtfulness in addressing concepts and ideas, and participating in group discussions. Work may demonstrate excellence but less consistently than a '5' student.

**(Grade 3) Satisfactory work:** Student work demonstrates problem solution with few minor or major problems. Drawing and presentation work are complete and satisfactory, showing minor problems in detail.

**(Grade 2) Less than satisfactory work:** Drawing and presentation work is substandard, incomplete in significant ways, showing insufficient attention to details.

**(Grade 1) Unsatisfactory work:** Student work demonstrates several major problems in the basic knowledge needed to solve the tasks of the course. Drawing and presentation work is insufficient and weak.

**Grading Scale:**

Numeric Grade:	5	4	3	2	1
Evaluation in points:	85%-100% 170-200	77%-84% 154-169	66%-76% 132-153	51%-65% 102-131	0-50% 0-101

**Methodology**

The course is based on individual architectural skills with regular consultations and presentations. The practical use of the topics of the lectures are learned during the practical lessons by drawing. According to these students will be able to make their drawing tasks alone.

**Studio Culture**

The course is based on collaborations, participation and discussions during the lessons. This is an interaction between Students and Faculty; used the teaching methods like 'Problem-based learning' and 'learning-by-doing'. The communication and the work in class should be respectful with the other students and their desire to work with regard to noise levels, noxious fumes, etc. from all participants. The aim of the course is to use individually the correct structural solutions, possibilities and limits by the end of the semester.

The learning process during the semester consists of the following steps:

- consultation – presenting and discussing the work done at home, raising problems, analysing the possible solutions
- according to the consultation working further on the drawing task
- consultation – presenting and discussing the work done at home, raising problems, analysing the possible solutions

### Requirements of the Practices

During the practices consultations or drawing practices are done.

In case of a drawing practice the supervisor draws and explains a structural solution to the blackboard. This drawing is copied by the students to the paper given at the beginning of the lesson. According to the explanation students can understand how to use the theoretical knowledge heard at the lecture. Students can ask the teacher, discussions can be done in connection with topic.

In case of a consultation students can ask in connection with their drawing tasks. They can also listen to others' consultation. During the whole class students need to be present and deal with their drawing task. Since the drawings can be done digitally, the consultations can be done on computers.

### Students with Special Needs

Students with a disability and needs to request special accommodations, please, notify the Deans Office. Proper documentation of disability will be required. All attempts to provide an equal learning environment for all will be made.

### Accepting Drawings Done in Earlier Semesters

Drawings with not less than minimum points can be accepted. For the acceptance a written request is needed to be sent in e-mail ([sztranyak.gergely@mik.pte.hu](mailto:sztranyak.gergely@mik.pte.hu)). In the request the student needs to list the drawings needed to be accepted (when was it done, name of supervisor).

Deadline: last day of Week 4!

*Note that this is the last semester when students have this opportunity. After February 2020 every drawing has to be done again, when somebody did not get the signature in earlier semesters.*

*Detailed requirements and schedule of the Course*

WEEK	LECTURE	PRACTICE
1	Introduction	Explaining task Drawing 1
2	Reinforced concrete skeleton structures -history, principles of design, elements, details	<b>Table practice:</b> reinforced skeleton structures
3	Reinforced concrete skeleton structures -history, principles of design, elements, details	Consultation of Drawing 1
4	Heat flow, vapour diffusion Thermal insulation Waterproofing of flat roofs	Consultation of Drawing 1
5	Waterproofing of flat roofs – principles of design, terrace roofs, green roofs, non-walkable roofs, roofs for parking	<b>SUBMISSION I (presentation of Drawing 1)</b>
6	Waterproofing of flat roofs – principles of design, terrace roofs, green roofs, non-walkable roofs, roofs for parking	<b>Table practice:</b> terrace roof plan Explaining task Drawing 2
7	<b>WRITTEN TEST I</b>	Consultation of Drawing 2
8	Waterproofing in the ground – principles of design, materials	Consultation of Drawing 2
9	Waterproofing in the ground – principles of design, materials	<b>SUBMISSION II ( presentation of Drawing 2)</b>
10	SEMESTER BREAK	
11	Waterproofing in wet functions – principles of design, materials	<b>Table practice:</b> waterproofing in the ground Explaining task Drawing 3
12	Waterproofing – follow-up wall waterproofing methods	Consultation of Drawing 3
13	Floor systems / dry walls	Consultation of Drawing 3
14	<b>WRITTEN TEST II</b>	<b>SUBMISSION III (presentation of Drawing 3)</b>
15	<b>RETAKE (Written test I and II)</b>	<b>LATE SUBMISSION (Drawing 1 / 2 / 3)</b>