

**Building Construction 4.**  
Course Code: EPE102AN  
Semester: Spring 2018/2019

**Course Syllabus**  
Schedule: Tuesday, periods 2-8 (08:30-14:45)  
Location: PTE PMMIK, 'A'-007

**General Information:**

**Name of Course:** **BUILDING CONSTRUCTION IV.**  
**Course Code:** EPE102AN  
**Semester:** 4<sup>th</sup>  
**Number of Credits:** 7  
**Allotment of Hours per Week:** 4 Practical Lessons and 3 Lectures / Week  
**Evaluation:** Exam (with grade)  
**Prerequisites:** Building Construction III.

**Instructors:** **Dr Gergely SZTRANYÁK, assistant professor**  
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**Introduction, 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 and in groups.

**General Course Description and Main Content:**

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.

**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 through collaboration, participation and discussions through lessons. This is an interaction between Students and Faculty; used the teaching methods like 'Problem-based learning' and 'learning-by-doing'. The communication and work should be reflect a respect for fellow students and their desire to work with regard to noise levels, noxious fumes, etc. – from each site of participants.

### **Requirements of the 15 weeks:**

Appearance:

Not compulsory at the lectures and compulsory at the practical lessons.

Requirements for getting the semester signature at the end of the 15 weeks:

Handing in all drawings and having the minimal acceptable points for them.

Writing the exams during the semester and having minimum 10 points for each (10 points for the 1st and 10 points for the 2nd).

Drawings:

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 has to be developed with the help of consultations. A signature has to be on every drawing before evaluation. For a drawing without a signature can be only 0 point given. The deadline for every drawing is given in the time schedule. Only 1 week late after the deadline is acceptable. For a drawing after the 1 week late can be only 0 point given. At the given deadline students need to hand in all parts of the specific drawing task. The drawings have to be hand in only personally to the teacher in a paper cover not later than the end of the practical lesson.

**The last deadline for handing in drawings is: 21<sup>nd</sup> May 2019 (Tuesday), 11:00-12:00 in office B322. After this NO drawing can be handed in.**

**Written Tests:**

According to the topics of the lectures students will be tested how much they have learned of the heard knowledge of the classes. During the tests students should not use any helping aids. They need to work on paper sheets according to the given sample/layout: 8 sheets of papers stapled in size A/4 with line frames + covering paper. From this students need to hand in 2 pockets (1 for each written exam) until the end of the 4<sup>th</sup> week.

Obtainable Semester Points:	TOPICS/TASKS	POINTS
Written Test I	Lectures of week 1-6	<b>20</b>
	minimum points:	10
Written Test I	Lectures of week 8-14	<b>20</b>
	minimum points:	10
Drawing 1	Plans of the reinforced concrete skeleton structure building	20
Drawing 2	Plan of the waterproofing system of the top of the building	20
Drawing 3	Plan of the waterproofing system in the ground	20
	<b>Drawings - maximum points:</b>	<b>50</b>
	<b>ALL MAXIMUM POINTS:</b>	<b>100</b>
	<b>MINIMUM POINTS FOR THE SEMESTER SIGNATURE:</b>	<b>51</b>

**Requirements of the exam period:**

Obtainable Exam Points:

EXAM	TASKS	POINTS
Written Exam	Construction Drawing (without any aid) 4 x 60 mins	<b>50</b>
Oral Exam	Answering 2 from the given questions	<b>50</b>
	<b>ALL MAXIMUM POINTS:</b>	<b>100</b>

Students cannot pass the exam, if they achieve less than 25 points for the Written Exam. Students need to repeat only the oral exam, if they have failed only the oral exam. After the exam period the points for the Written Exam are lost, they cannot bring further for the next exam period.

Questions/Topics of the 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. Accoustic design methods of floors
12. Constructional design methods of traditional floors
13. Constructional design methods of dry floors
14. Constructional design methods of masonry separation walls
15. Constructional design methods of dry separation walls

Process of the Exam:

Written Exam – 4 x 60 mins

Oral Exam (next day) – working out two questions/topics

**Acceptation of points in case of course repetition:**

The points of Drawing can be accepted. Written Tests need to be repeated. For the acceptance students need to write a request for the following e-mail adress: [sztranyak.gergely@pmmik.pte.hu](mailto:sztranyak.gergely@pmmik.pte.hu) until the end of the 4<sup>th</sup> week. The request has to contain when and at which consultant gave the points.

**Possibilities for correction:**

Students have the possibility to rewrite the tests in the first two weeks of the exam period – there will be two extra appointments for each Written Tests.

Drawings can be corrected in order to achieve minimum points. The deadline for this is a given day of the 1<sup>th</sup> week of the exam period (21.05.2019 Tuesday, 11-12 o'clock in office B322), but by the final point calculation the first given points count.

**Consultation Possibilities:**

Personal consultations are possible during the practical lessons.

**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.

**Readings and Reference Materials:**

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

### **Evaluation and Grading:**

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

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.

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.

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.

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

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:	175-200	150-174	125-149	101-124	0-123

**Schedule:**

WEEK	LECTURE	PRACTICE
1	Introduction	Introduction
2	Reinforced concrete skeleton structures -history, principles of design, elements, details	<b>Table practice:</b> reinforced skeleton structures (cross section, plan) Explaining task Drawing 1
3	Reinforced concrete skeleton structures -history, principles of design, elements, details	<b>Table practice:</b> reinforced skeleton structures (longitudinal section)
4	Waterproofing of flat roofs – principles of design	Consultation of Drawing 1
5	Waterproofing of flat roofs – principles of design, terrace roofs, green roofs, non-walkable roofs, roofs for parking	Consultation of Drawing 1
6	Waterproofing of flat roofs – principles of design, terrace roofs, green roofs, non-walkable roofs, roofs for parking	Consultation of Drawing 1
7	<b>EXAM I.</b>	<b>Table practice:</b> terrace roof plan Explaining task Drawing 2 <b>Submission of Drawing 1</b>
8	Waterproofing in the ground – principles of design, materials	Consultation of Drawing 2 1 week late of the submission of Drawing 1 is acceptable
9	Waterproofing in the ground – principles of design, materials	Consultation of Drawing 2
10	SEMESTER BREAK	
11	Waterproofing in wet functions – principles of design, materials	Consultation of Drawing 2
12	Waterproofing – follow-up wall waterproofing methods	<b>Table practice:</b> waterproofing in the ground Explaining task Drawing 3 <b>Submission of Drawing 2</b>
13	Floor systems	Consultation of Drawing 3 1 week late of the submission of Drawing 2 is acceptable
14	Dry wall constructions	Consultation of Drawing 3
15	<b>EXAM II.</b>	<b>Submission of Drawing 3</b> 1 week late of the submission of Drawing 3 is acceptable (16 <sup>th</sup> week, Tuesday 11-12 o'clock)