

**General Information:**

<b>Name of Course:</b>	<b>BUILDING CONSTRUCTION V.</b>
<b>Course Code:</b>	EPE105AN
<b>Semester:</b>	5th
<b>Number of Credits:</b>	7
<b>Allotment of Hours per Week:</b>	3 Practical Lessons and 2 Lectures / Week
<b>Evaluation:</b>	Exame
<b>Prerequisites:</b>	<b>Completed Building Construction IV.</b>

**Instructors:**

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### General Subject Description

During the last three semesters students learned the construction methods of load-bearing wall and reinforced concrete skeleton structures from the base up to the roof structure. After these precast reinforced concrete skeleton structures, transparent building constructions, multi-layered wall and facade structures and suspended ceilings are the current topics.

### Learning Outcomes

The aim of the semester is to draw and understand the elements of the architectural construction plans based on the previous studies. Students need to make construction detail drawings individually and in groups.

### Subject Content

During the semester students learn the construction design methods of using precast reinforced concrete skeleton structures, openings, claddings and suspended ceilings.

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 **Neptun Meet Street**.

### 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** achieving minimum 10 points for each (50-50%).

## Drawing Tasks

**Drawing 1:** Building with precast skeleton structure (floor plans/slab constructional plan, sections, facades, details)

**Drawing 2:** Details and product list of outer and inner openings

**Drawing 3:** Plan of curtain wall and facade cladding

The drawings must be hand in at the practical lessons on the given weeks. The supervisor evaluates the tasks immediately at the class.

**If somebody does not get the minimum points (50%) for the drawing, or does not hand in the drawing, can hand in or correct the drawing, but only for the minimum points.**

If somebody missed the deadline of a drawing and has a valid excuse, can hand in the drawing at the next evaluation appointment.

The last drawing task can be corrected/late submitted on the last day of the study period (14<sup>th</sup> December 2019).

If somebody 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. If this happens, it cannot be corrected.

## Written Tests

The written accounts test the knowledge of the students. Facts mentioned or referred at the lectures are asked. No aid can be used during the written tests. Students can write only on sheets according to a specific layout submitted until the end of the 4<sup>th</sup> week: 2 x (covering paper + 8 pieces of A/4 with frames on both sides).

The written accounts can be corrected during the exam period (1 appointment for each). If somebody still has less than 50% of the points of a written account, gets the 'denied' remark. This can be corrected only once with a substitution exam for the signature in the 1<sup>th</sup> week of the exam period.

## Points Acquired in the Study Period

TASK	TOPIC	MAXIMUM POINTS
1 <sup>st</sup> Written Test	Topics of the lectures (Week 1-7)	20 (min.10 needed)
2 <sup>nd</sup> Written Test	Topics of the lectures (Week 8-15)	20 (min.10 needed)
Drawing 1	floor plans, slab plans, sections, facades and details of the precast reinforced concrete skeleton building	20 (min.10 needed)
Drawing 2	Product list of outer and inner openings, details	20 (min.10 needed)
Drawing 3	Curtain wall and multi-layered facade plans	20 (min.10 needed)
	<b>TOTAL:</b>	<b>100 POINTS</b>
	<b>MIN.:</b>	<b>51 POINTS</b>

## Accepting Drawings Done in Earlier Semesters

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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.

### Requirements in the Exam Period

PARTS OF THE EXAM	TOPIC	MAXIUM POINTS
Written Exam	Drawing exercises, no aid allowed (min. 2 x 60 minutes)	50 (min. 25)
Oral Exam	According to given topics, (2 topics needed to be explained)	50 (min. 25)
	<b>TOTAL:</b>	<b>100 POINTS</b>
	<b>MIN.:</b>	<b>51 POINTS</b>

### Topics of the Oral Exam

1. Precast reinforced concrete skeleton structures (foundation, vertical loadbearing structures, stairs, slabs)
2. Facades of precast reinforced concrete skeleton structures (with precast panels, infill walls, etc.)
3. Precast steel skeleton structures
4. Wooden skeleton structures
5. Traditional wooden openings
6. Modern wooden openings
7. Plastic openings
8. Steel and aluminum openings
9. Internal traditional wooden openings
10. Internal steel openings
11. Glazing types (thermal insulated, acoustical, fire resisted, shading, etc.)
12. Curtain walls
13. Brick cladding (methods, details, building physics analysis)
14. Stone cladding (methods, details, building physics analysis)
15. Fiber cement cladding (methods, details, building physics analysis)
16. Steel cladding (methods, details, building physics analysis)
17. Skylights
18. Suspended ceilings

### Readings and Reference Materials Required

- Lecture notes, guidance notes
- Ed.: Francis D.K. Ching: European Building Construction Illustrated

### 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 can be done by CAD program (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.

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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 explain 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.

### Task Description

#### Drawing 1:

Using precast reinforced concrete skeleton structure in the given building.

The level of the garage is the ground floor, there is no basement and no neighboring building.

*Datas (given by the teacher):*

Slab: hollowed precast slab

Foundation: pad foundation

Levels: ground floor: 3,60 m 3,90 m  
other floors: 3,30 m 3,60 m

Facade: wall panels

Facades needed to be drawn: north – east south – west

Line types/fillings see in attachment.

*Drawing parts:*

Ground floor plan is also a foundation plan 1:50

The elements of the foundation are drawn by dashed lines.  
The slab panels over the ground floor also need to appear.

Top floor plan	1:50
The slab panels over the top floor also need to appear.	
Sections (A-A, B-B)	1:50
Facade	1:50
Given by the teacher.	
Details (4 pieces)	1:10, 1:5

### Drawing 2:

Ground floor plan for the product list of outer and inner openings, product list of outer and inner openings, solving and drawing the details of the given parts of the buildin.

*Drawing parts:*

Ground floor plan for the product list of outer and inner openings	1:50
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The product list of outer and inner openings

Details	1:5, 1:2
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One outer door, a window and an inner door

### Drawing 3:

Drawing the facade of the given building in drawing 1 with a curtain wall and a multi-layered facade structure. The two facade types have to touch each other and one of them needs turn over a corner.

*Drawing parts:*

Floor plan of every different level (until 1 m deep from the level of facade)	1:20, 1:25
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Sections (curtain wall, multi-layered facade)	1:20, 1:25
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Facade	1:20, 1:25
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Details of the multi-layered facade (6 pieces) (plinth, slab, window, window sill/head with shutter, horizontal section, connection to the curtain wall)	1:5, 1:2
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Details of the curtain wall (plinth, slab, connection to an intermediate slab)	1:5, 1:2
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### *Detailed requirements and schedule of the Course*

#### **Schedule**

The rough outline of the schedule is the following:

WEEK	LECTURE	PRACTICE
1	Introduction	Introduction
2	Precast concrete structures	<b>Drawing practice 1</b>
3	Precast concrete structures	<b>Drawing practice 1</b>
4	Lightweight construction – wood	Consultation
5	Heat flow, vapour diffusion	Consultation
6	Openings – wood, plastic, metal	Consultation
7	Shading systems	<b>Submission of drawing 1</b>
8	<b>Written test 1</b>	<b>Drawing practice 2</b>
9	Semester break	Semestrer break
10	Brick- stone suspended facade	Consultation
11	Fibre-cement, steel suspended facade	<b>Submission of drawing 2</b>
12	Curtain walls	<b>Drawing practice 3</b>
13	Suspended ceilings	Consultation
14	Steel construction	Consultation
15	<b>Written test 2</b>	Consultation
16	<b>Retake of written tests</b>	<b>Submission of drawing 3</b>