

General Information:

Name of Course:	BUILDING CONSTRUCTION IV.
Course Code:	PM-RESNE140A
Semester:	5th
Number of Credits:	7
Allotment of Hours per Week:	2 Practical Lessons and 2 Lectures / Week
Evaluation:	Exame
Prerequisites:	Completed Building Construction III.

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Introduction, 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.

General Course Description and Main Content:

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.

Student Tasks:

Drawing 1: Building with precast skeleton structure (floor plans, sections, facades, details)

Drawing 2: Product list of outer and inner openings

Drawing 3: Plan of curtain wall and facade cladding

Student presentation

Written exam

The deadlines for handing in the drawings can be found under the title '**Schedule**'. Maximum 1 week delay is affordable. In case of more than 1 week delay the drawings still need to be handed in until the end of the semester, and there is 0 point for them. If a drawing is missing, the achieved written exam points are under 10 or the presentation is not done, then the student fails the semester.

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/colours used in the drawings: reinforced concrete structures with black (beams with dashed lines), finishing works, inner dividing walls and openings with red, slab panels with blue.

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

The product list of outer and inner openings

Details 1:5, 1:2
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
Sections (curtain wall, multi-layered facade)	1:20, 1:25
Facade	1:20, 1:25
Details of the multi-layered facade (6 pieces) (plinth, fascia, window, window sill/head with shutter, horizontal section, connection to the curtain wall)	1:5, 1:2
Details of the curtain wall (plinth, fascia, connection to an intermediate slab)	1:5, 1:2

Student Presentation:

At the end of the semester students need to make an oral presentation.

The topic of the presentation:

Students having the course Building Design IV. need to present the used structures of the designed building (openings, facade, suspended ceiling, etc.) Everyone has to talk about the functional needs, things influenced the design and the final solutions. The speech has to be completed with drawings. In order to make a successful presentation consultations are needed about the designed project minimum 3 times. These can happen during the practical lessons (especially after the semester brake), and during the office hours of the teacher.

Students NOT having the course Building Design IV. need to present the used structures of building under construction or a finished one (completed after January 2017). The presented building has to be relevant to the topics of the semester. If the presentation is not a case study, there is 0 point for it.

Students has to copy the digital version of the presentation to the laptop of the faculty. The maximum length of the presentation is 15 minutes.

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.

Schedule:

The rough outline of the schedule is the following:

WEEK 2.

Lectures: Precast concrete structures

Practice: table practice

WEEK 3.

Lectures: Precast concrete structures

Practice: consultation

WEEK 4.

Lectures: Heat flow, vapour diffusion, openings

Practice: consultation

WEEK 5.

Lectures: Openings, shading systems

Practice: consultation

WEEK 6.

Lectures: Curtain walls

Practice: table practice 2. – deadline of exercise 1.

WEEK 7.

Lectures: Layered walls, brick, stone coverings

Practice: consultation

WEEK 8.

Lectures: Suspended ceilings

Practice: consultation

WEEK 9.

SEMESTER BREAK

WEEK 10.

Lectures: Wood structures

Practice: table practice 3. - deadline of exercise 2.

WEEK 11.

Lectures:

Practice: consultation

WEEK 12.

Lectures: Written exam

Practice: Written exam

WEEK 13.

Lectures: consultation

Practice: consultation

WEEK 14.

Lectures: Student presentation

Practice: Student presentation

WEEK 15.

Lectures: Written exam (extra)

Practice: Written exam (extra)

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.

Attendance:

Attending is required for all classes, and it impacts the grade (max. 10%). 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.

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:	89%-100%	77%-88%	66%-76%	55%-645%	0-54%

Obtainable points during the semester:

TASK	TOPIC	MAXIUM POINTS
Written exam	Topics of the lectures	20 (min.10 needed)
Drawing 1	floor plans, slab plans, sections, facades and details of the precast reinforced concrete skeleton building	20
Drawing 2	Product list plans and details	20
Drawing 3	Curtain wall and multi-layered facade plans	20
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		TOTAL: 100
		MIN.: 51

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 Required:

Ed.: Francis D.K. Ching: European Building Construction Illustrated