

**General Information:**

<b>Name of Course:</b>	<b>DESIGN OF BUILDING STRUCTURES II.</b>
<b>Course Code:</b>	PM-RESNE036A
<b>Semester:</b>	9th
<b>Number of Credits:</b>	4
<b>Allotment of Hours per Week:</b>	2 Practical Lessons and 2 Lectures / Week
<b>Evaluation:</b>	Exame
<b>Prerequisites:</b>	Completed Design of Building Structures I.

**Instructors:** **Dr Gergely SZTRANYÁK, assistant professor**  
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**Introduction, Learning Outcomes:**

During the course Design of Building Structures I. we concentrated on the buildings' loadbearing structures and way they define spaces. We examined the relationships between the loadbearing structures and the different architectural layers like space struture, inner infrastructure and topographical context.

During the course Design of Building Structures II. the building's skin, outer layer and the thermal envelope stand in the focus of the lectures. Students learn the basic impacts on the building envelope and how they effect the designing process. We analyze the main building physical phenomena, the design of facade and the positions of the openings. We also deal with the design principles of the details found between the outer and inner spaces.

Through experimental excercises students deepen their knowledge in the design of structures and their physiological effects.

**General Course Description and Main Content:**

Lectures are about the general designing aspects of the building envelope, especially focusing on the physiological effects and visual appearance of the facade.

During the drawing tasks we analyze the possible structural and technical solutions through simple designing excercises. We improve the different cases of technical representation of structures, materials and surfaces.

Students learn how to fix different types of claddings in seminar like lessons working in groups and making presentations. They analyze details to examine the physiological effects of the possible geometrical solutions.

*Study:*

**CLADDING – CONNECTION AND DETAIL**

group work, paper documentation (A3), oral presentation

Students analyze a cladding fixing system of a given material. They examine relevant details and their geometrical and physiological effects through realised projects.

Deadline: 5th week

20p

*Project 01:*

**FACADE**

individual work, printed poster, constructional plans, PDF

plan M 1:50

section M 1:50

facade M 1:50

detail M 1:2, M 1:5

Students design the vertical structures of a building with a given geometry and function. The task is to define the openings and decide the facade's materials documented through plans and detail drawings. Further challenge is the technical representation of the visualisation of the materials.

Deadline: 12th week

65p

*Project 02:*

**ENVELOPE OF BUILDING DESIGN PROJECT**

individual work, printed poster, constructional plans, PDF

section M 1:50

facade M 1:50

detail M 1:2, M 1:5

Students design the vertical structures of an own building design project. The task is to define the openings and decide the facade's materials documented through plans and detail drawings. Further challenge is the technical representation of the visualisation of the materials.

Deadline: 15th week

15p

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.

### **Methodology:**

The course is based on individual architectural skills with regular consultations and presentations.

### **Schedule:**

The rough outline of the schedule is the following:

Periods 3-4	Periods 5-6
Week 2: Lecture	group work
Week 3: Lecture	group work
Week 4: Lecture	group work
Week 5: Presentation of <i>Study</i>	Presentation of <i>Study</i>
Week 6: Lecture	consultation
Week 7: Lecture	consultation
Week 8: Lecture	consultation
Week 9: <i>SEMESTER BREAK</i>	
Week 10: consultation	consultation
Week 11: consultation	consultation
Week 12: Presentation of <i>Project 01</i>	Presentation of <i>Project 01</i>
Week 13: consultation	consultation
Week 14: consultation	consultation
Week 15: Presentation of <i>Project 02</i>	Presentation of <i>Project 02</i>

### **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%-64.5%	0-54%

Obtainable points during the semester:

TASK	TOPIC	MAXIMUM POINTS
Study	Cladding / detail	20 (min. 11)
Project 1	Facade / Constructional plan	65 (min. 38)
Project 2	Envelope of Building Design project	15 (min. 16)
	TOTAL:	100
	MIN.:	54

**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.: Alexander Reichel, Kerstin Schultz: Enclose/Build, Birkhäuser

Ed.: Alexander Reichel, Kerstin Schultz: Open/Close, Birkhäuser

Ed.: Andrea Delplazes: Constructing Architecture / Materials / Processes / Structures