

### General Information:

<b>Curriculum:</b>	Architecture
<b>Course:</b>	<b>COMPLEX DESIGN 2.</b>
<b>Code:</b>	EPM319EN
<b>Semester:</b>	2
<b>Credits:</b>	11
<b>Classes per week:</b>	0/0/10
<b>Evaluation:</b>	signature with grade (f)
<b>Prerequisites:</b>	Complex Building Structures Complex Design 1.

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### Course description

The course requires master's level students to continue a task with an architectural scale, architectural and structural focus, continuing their studies, and using the acquired competencies. Within the framework of the subject, the student prepares a semester assignment, which proves that he/she can apply the acquired knowledge independently, has creative design skills and problem-solving skills, and is able to choose appropriate ways and methods to answer professional questions and draw correct conclusions. The design of a well-functioning, high architectural and technical quality contemporary building is an essential requirement. Within the framework of the semester task, the student gives coherent answers to current topics, non-conventional architectural situations, and social problems, from integration into the environment to structural solutions, especially regarding innovation, sustainability, economic solidarity, and ecological thinking.

### Course outcome

The course's primary focus is on applying the knowledge acquired during the training in a complex way, especially the conceptual design approach, integration into the built environment, logical, clean switching of functions, finding the appropriate function-form-structure unit, shaping representative spaces for demanding architecture. The course aims to demonstrate the student's ability to solve independent architectural tasks in the field of architectural activities through his/her knowledge of science, technology, and art, as well as economic and human skills, with responsibility and commitment, awareness of the social and environmental impacts of architecture.

### Course outline

The semester assignment within the course is grouped around Architecture and Structure, so this semester deals specifically with the building scale, building architecture, structural and other problems in the field. The aim is to create a well-thought-out task with a high-quality graphic presentation at the permission plan level. Of course, in connection with the assignment, the urban architectural links, the

examination of the context, the integration into the environment, and the well-thought-out design of the interiors cannot be circumvented either. The main topic focus of the semester assignment is:

- **Architecture and structure** (theme focus ratio: a = 40%, b = 10%, c = 10%, d = 30%, e = 10%)  
Topic focus: a.) architecture, b.) interior design, c.) urban , d.) structure, e.) heritage protection, society, economy, ecology, sustainability, etc. The detailed syllabus, the detailed system of requirements, and the course information will be uploaded to the file-sharing interface of the relevant Teams team.

### Assessment and evaluation system

In all cases, Annex 5 of the valid Organizational and Operational Regulations of the University of Pécs and the Study and Examination Regulations of the University of Pécs govern the admission of the subject, the system of requirements, and the obligatory tasks of the student's diligence, examination and final examination period.

The conditions for successfully completing the semester are:

- Active class attendance.
- Preparation and presentation of tasks on time.
- Compliance with formal and formal requirements.

In the Master's degree program in Architecture curriculum, the credit value assigned to the Complex Design 2 is 11, which can be obtained by fulfilling the subject's semester requirements (study, mid-term presentation, successful end-of-term presentation, and final presentation).

The course ends with a mid-term ticket. The semester closes at week 14, and week 15 is the rereview. The practical sessions' presence means presenting the actual state of the work recorded in the schedule! The tutors keep an attendance/consultation sheet with the entries. During the semester, the student reports on his / her work twice in a visual and verbal presentation to the subject instructors' professional jury.

The evaluation is based on the points system issued. To obtain a signature, the student must meet the following milestones:

1. study and concept – week 4- are accepted or, if it is not completed on time or is not acceptable, it is accepted at the time of additional submission (with a delay of up to two weeks)
2. the mid-term presentation - week 8- is accepted if the score corresponding to 2 (sufficient) grade is reached. If the student does not achieve the score corresponding to 2 (satisfactory) grade in the mid-term presentation (less than 50% based on the jury's evaluation), then the presentation can be corrected once. (The work not presented at the mid-term exhibition for some reason - after justifying the absence - will have to be presented in the first class after the presentation!)
3. The project's presentation at the end of the semester takes place on week 14, where the students show that the content and drawings are delivered in the semester. The presentation of the project takes place with posters in front of the instructors. The plans' content is evaluated at the presentation of the plans. There is another chance to acquire the final grade in 2 weeks in case of not fulfilling the minimum requirements.
4. the final project presentation at the end of the semester is on week 16. Completion of the project presentation at the end of the semester is a condition for obtaining the signature, which can then be obtained here for the last time.

- if the total score does not reach 50%, the semester grade is 1, (fail/unsatisfactory), the course has not been completed, it is to be re-enrolled in the next semester.

- if the semester grade is 2-5, the course is considered complete

### Evaluation

- Study and concept presentation: accepted / not accepted (to be revised)
- Mid-term defense (30 p): 26-30 points 85-100% A (5, excellent)

22-25 points 71-84% B (4, good)  
19-21 points 60-70% C (3, average)  
15-18 points 50-59% D (2, satisfactory)  
0-14 points 0-49% F (1, unsatisfactory) (to be revised)

- Test on building structures (10 p): 5-10 passed / 0-4 failed (to be revised)  
*The min. requirement for writing the test is the submission of 5\*10 hand drawn details on A4 sheets. The details relevant to the lecture's topic will be posted on teams.*
- Final defense (60 p):
  - 51-60 points 85-100% A (5, excellent)
  - 43-50 points 71-84% B (4, good)
  - 36-42 points 60-70% C (3, average)
  - 30-35 points 50-59% D (2, satisfactory)
  - 0-29 points 0-49% F (1, unsatisfactory) (semester not completed)

### Textual evaluation of grades

**1 (unsatisfactory)** - work that does not meet the formal and content requirements, work of unacceptable quality carried out with a completely flawed concept

**2 (satisfactory)** - acceptable work that meets the formal and content requirements, but which has a bad or weak concept, does not contain coherent functional-formal-structural solutions, architecturally low-quality work

**3 (average)** - acceptable work that meets the formal and content requirements, which has a fair concept, but shows problems in its functional-formal-structural solutions, not architecturally very exciting, proper quality work

**4 (good)** - work that meets the requirements of form and content to a large extent, which has a good concept, a functionally functioning building that uses coherent, functional solutions in a form-structure sense, architecturally interesting, well-processed, high-quality work

**5 (excellent)** - work that meets the requirements of form and content to a large extent, which has an exciting concept, a functionally well-functioning building that uses coherent, mature solutions in terms of form and structure, hides architectural excitement, and professionally processed, high-quality work

### Methodology

The course is based on continuous communication between faculty and students.

Method:

1. continuous consultation in timetable according to the curriculum announced in the detailed subject program
2. independent work according to the semester curriculum announced in the detailed course program
3. independent homework
4. independent research, data collection, analysis
5. Independent consultation with external, independent experts

### References

E. Neufert: Architect's Data, Bp.-Pécs 1999 Dialóg Campus Kiadó  
Frampton, Kenneth: Modern Architecture (World of Art) : A Critical History.  
Bert Bielefeld (Ed.): Planning architecture, 2016. Birkhauser, Basel  
Andrea Deplazes (Ed.): Constructing architecture - Materials Processes Structures, 2013. Birkhauser, Basel

### *Detailed subject program and requirements*

#### **Methodology and criteria:**

The students' problem-processing method models the real planning process (complex problem approach = parallel examination of function-structure-form), but also maps the academic nature of university-level education (research-analytical work).

The aim is to strengthen teamwork and reap the benefits, mainly so that the individual's responsibility - his / her plan - does not turn into team responsibility. Collaboration, therefore, means a joint discussion of independent work for phases "A" - "B" - "C." During the semester, according to the complexity, the student plans are consulted together by the design and building structure consultants.

However, due to the peculiarities of complex design and the interdependence of design processes, individual specialties appear in phases "A" - "B" - "C" with different weights. In phase "A", planning consultations play a more significant role, as here the analysis, research and concept development play the main role. In the "B" phase, the consultation on building design and building structure is not separated. Still, it takes place together, since here, in addition to concept creation, the structural foundations and logic of the building must also be invented. In phase "C", the emphasis shifts to structural solutions, but of course, the design consultations also remain, the architectural fine-tuning of the building takes place.

During the processing of the design task, students have to go through the following three phases together with the consultants:

#### **phase "A" - research and conceptualization phase - 1-4. week**

analysis of buildings on similar climate, similar functions and sizes (4 pieces) and their wider and immediate surroundings - operation of function - the size of required spaces - in this context, interpretation of structural solutions - examining material use. Collection of requirements and impacts. The result will be the design program and architectural concept. This phase ends with the presentation of the study in digital form. Scale M = 1: 500

#### **phase "B" - concept design phase - 5-8. week**

elaboration, analysis, and comparison of versions for one's own task/building. The result is the sketch plan/concept plan, in which the functional relationships, the main dimensions, the structural systems, the building materials and the basic operating requirements of the basic service systems were defined. This phase ends with the mid-term/concept design presentation in digital form. Scale M = 1: 200

#### **Phase "C" - design development and processing phase - 9-14. week**

further development of the sketch plan/concept plan up to M = 1: 100, developing certain structural elements to the level of detailed design (1:50, 1:25, 1:20, 1:10, 1: 5). This phase ends with the presentation of the plan at the end of the semester

#### **phase "D" - correction phase - 15-16. week**

after the unaccepted presentation on week 14 there is 1 last chance to deliver content-appropriate plans for the end-of-semester defense, with the content and depth specified in the topic.

Each phase should be discussed at team level (students + consultants) during the lesson:

- joint discussion - presentation and discussion of work done at home, unveiling unrecognized problems, analyzing the answers to the revealed problems
- independent rethinking of the task
- joint discussion - presentation of the work done in the class, discussion, unveiling unrecognized problems, analyzing the answers to the revealed problems

At the beginning of the planning consultation (6classes), the students will outline the work done since last week, the changes in the plan for the instructors (both design and building construction consultants) - approx. 1-2 classes

In the middle of the planning consultation, planning and building construction consultation and independent work occur. - approx. 1-2 classes

At the end of the planning consultation, students will present the work done in class, changes in the plan since the beginning of the consultation for the instructors (both planning and building construction consultants) 1-2 classes

## Tasks and their requirements

### Study and concept

The study is not prepared in the usually printed booklet format but is prepared or presented as a digital presentation. In the study, students analyze the chosen function through 4 examples, with particular reference to functional operation, design intentions, and structural consequences. (In the first layer of the study, the appearance of the buildings is secondary.) Then the design site, its features, and possibilities are analyzed and based on these, the design program is compiled and finalized. The last part of the study is the presentation of the architectural concept developed based on the studies.

Structure of the study presentation:

#### 1. *building examples analysis*

- To gain a thorough understanding of how a building works, it is worth analyzing existing, well-functioning examples. The subject of the analysis should be the functional - spatial design of the building. It is necessary to recognize repetitive patterns and typologies because it can help interpret and start the design task. This is the first layer.

- The second layer, which is no less important than the first, is an understanding of architectural intent. Where, who, what, how planned? Perhaps you can learn the most from this during the research phase. It is not concrete solutions that are interesting, but the thinking and habitus of the designer.

- The third layer is the relation of the chosen materials - structures to the given spatial structure. Why the designer chose the materials, layouts, and structures, he hid it or just took advantage of their potential. Based on these three criteria, we get a complex picture of a published building. Naturally, it would be best if you referenced the literature used. Only well-documented buildings are worth analyzing. Nor should we ever forget the historical outlook.

#### 2. *Analysis and presentation of the features and possibilities of the site*

#### 3. *Finalize the planning program*

#### 4. *Presentation of the architectural concept*

*Criteria for the evaluation of the study and concept phase (10 points in total):*

- *relevant examples 4 points*
- *analysis 2 points*
- *program 2 points*
- *concept 2 points*

### Mid-term defense

conceptual design / installation digital presentation, boards (M = 1: 200) and model (M = 1: 500)

The committee will evaluate in the submitted work:

a.) The architectural quality and correctness of the installation plan.

b.) The processing, appearance, and graphic quality of the sketch design presentation.

The evaluation is based on the points system published on the topic. Work not presented at the defense for some reason, and after justifying the absence, the mid-term must be represented the next class after the defense! Works with a "non-compliant" qualification that did not reach 15 points, i.e., 50%, in the defense, can be revised once, in the upcoming class after the presentation!

**Minimum formal requirements for mid-term presentation:**

The installation and concept plan should be prepared and presented in a poster AND digital projection.

The panels must be carefully made, aesthetically pleasing, and architecturally mature. Tables should be based on the published format, using its header and template. (approx. 50x100cm size)

The mid-term presentation should be a landscape, screen-aligned projection in a small, optimized PDF format. (File size max. 25 Mb!)

The concept plan tables should include (in a graphical, clear format):

- Presentation of the topicality, timeliness, and social environment of the topic. Presentation of the possibilities of the proposal.
- A description of the operation, location and functional needs, types, equipment, and particular needs of the selected function.
- Presentation of the chosen environment with photographs and sketches, exploring the history and traditions of the area.
- Preparation and presentation of the site analysis with schematic diagrams, flow charts, analytical maps, problem maps. (exploring the strengths and problems of an existing situation, assessing the value of a natural, built environment, approach, prospect of exploration, analyzing the morphology and vegetation of an area, etc.)
- Description of the architectural concept. Architectural responses to the problems raised.
- Structural basics, presentation of the structural system of the building
- Conceptual, theoretical presentation of building engineering/energy systems
- Architect's sheets processed on boards:
  - o Concept, analysis, schematics
  - o Location presentation
  - o Maps, schwarzplans, district site plans
  - o Installation plan (site plan) M = 1: 500
  - o Floor plans M = 1: 200
  - o Terrain sections, mass sections M = 1: 500-1: 200
  - o Conceptual presentation of the structural system/scheme and building engineering/energy systems
  - o Mass sketches, visual plans (on an installation scale)
- Installation model M = 1: 500 (exceptionally M = 1: 1000 for large scale tasks)

Criteria for the evaluation of the mid-term presentation (30 points in total):

- concept, architectural value (5 points)
- analysis and setting (5 points)
- planning program (5 points)
- functional operation (5 points)
- structure, use of materials (5 points)
- mechanical engineering, sustainability, ecological aspects (5 points)

**Final review**

Final semester plan presentation is a digital presentation, + foamboards and mockup.

The committee will jointly evaluate in the submitted work:

- a.) The architectural quality and correctness of the final plan.
- b.) The processing, appearance, and graphic quality of the presentation.

A jury of instructors evaluates the plans presented at the final defense according to the points system published. Students will receive their final semester grade is based on the study building construction

test (10 points), mid-term presentation (30 points) and final presentation (60 points) according to the semester point system.

Minimum formal requirements for the final defense:

The final semester plan should be prepared and presented in the form of a digital projection AND posters on foamboard. Out of the obligatory six panels, two show the building structure's structural plan agreed with the structural consultant, the structural details, mechanical and sustainability solutions.

The panels must be carefully made, aesthetically pleasing and architecturally mature. The boards should be made according to the issued template (approx. 50x100cm)

The final semester plan presentation is with a digital presentation, foamboards (posters), and mockup.

The committee will jointly evaluate in the submitted work:

- a.) The architectural quality and correctness of the final plan.
- b.) The processing, appearance, and graphic quality of the presentation.

A jury of instructors evaluates the plans presented at the final semester defense according to the points system published in the syllabus. Students will receive their final grade based on the study presentation (10 points), mid-term presentation (30 points) and final presentation (60 points) according to the semester point system.

#### **Minimum formal and formal requirements for the end-of-semester defense:**

The final semester plan should be prepared and presented in a digital projection AND poster form. Out of the obligatory six panels, two present the building structure's structural plan agreed with the structural consultant, the structural details, mechanical and sustainability solutions.

The panels must be carefully made, aesthetically pleasing and architecturally mature. The boards should be made according to the issued template (approx. 50x100cm)

The tables in the final plan must include:

- Architectural concept description illustrated with infographic graphics.
- Architectural plans processed on boards:
  - o cover image (a well-defined visual image that best defines the building's atmosphere, which must be placed on the starting board, in a large size, in a way that is visible from afar.)
  - o Schematic diagrams and flowcharts presenting an architectural idea or concept
  - o site plan M = 1: 500-1000
  - o floor plans M = 1: 100,
  - o facades M = 1: 100,
  - o typical sections M = 1: 100,
  - o main wall section M = 1:20, M = 1:25,
  - o mass sketches, visual designs (building on a scale)

Structural and HVAC part:

- o presentation of a building structure professional plan
- o Conceptual presentation of the structural system/scheme
- o conceptual presentation of building structure solutions (typical layer orders, etc.)
- o Conceptual presentation of building engineering/energy systems
- o presentation of materials used, presentation of material selection

- model (possibly detail model, section model) in M = 1: 200 scale by processing the building and its immediate surroundings. The mock-up should be aesthetic and made with a representation appropriate to its scale.

- improved installation model M = 1: 500 (possibly exceptionally M = 1: 1000)

The digital presentation should be landscape, screen-aligned (9:16) projection in a small, optimized PDF format. (File size max. 25 Mb!)

Criteria for the evaluation of the final presentation (60 points in total):

- concept, architectural value (10 points)
- analysis and installation/setting (10 points)
- planning program (10 points)
- functional operation (10 points)
- structure, use of materials (10 points)
- mechanical engineering, sustainability, ecological aspects (10 points)

**Architectural part:**

- o schematic diagrams and flowcharts presenting an architectural idea or concept (these are not made afterwards, but are part of the design process!)
- o site plan M = 1: 500, M = 1: 1000
- o floor plans M = 1: 100,
- o facades M = 1: 100,
- o typical sections M = 1: 100,
- o main wall section M = 1:20, M = 1:25,
- o mass sketches, visual designs (building on a scale)

**Structural and mechanical part:**

- o Conceptual presentation of the structural system/scheme
- o conceptual presentation of building structure solutions (typical layer orders, etc.)
- o Conceptual presentation of building engineering/energy systems
- o presentation of materials used, presentation of material selection

The plans' content is evaluated at the presentation, the finished boards are needed for the final, and the final visual plans do not have to be presented yet, but the future graphic presentation, the expected layout and editing of the boards' form should be presented! (This milestone takes place in a compliant / non-compliant system. Non-compliant plans will be re-presented at the date specified.)

Weekly schedule		
Week 1	Monday 9.30-18.00	
	Presentation of the semester task and syllabus	
02.07	PHASE „A”	PHASE „A”
Week 2	Monday 9.30-18.00	
lecture	<b>Planning</b> 11:15 -12:45 TAM	<b>Building Structures</b> 9:30 -11:00 PP
topic	Architectural and Urban History of Paks	Foundations and plinth, water barrier
practice	CONSULTATION AND INDIVIDUAL WORK	
February 14.	PHASE „A”	
Week 3	Monday 9.30-18.00	
lecture	<b>Planning</b> 11:15 -12:45 TAM	<b>Building Structures</b> 9:30 -11:00 PP
topic	Urban context – Installation- The specific questions of the sites	Wall structures and lintels, openings
practice	CONSULTATION AND INDIVIDUAL WORK	
February 21.	PHASE „A”	
Week 4	Monday 9.30-18.00	
lecture	<b>Planning</b> 11:15 -12:45 TAM	<b>Building Structures</b> 9:30 -11:00 PP
topic	The questions of the architectural function 01	Slabs and balconies, roofs and roofing



practice	Presentation of the program and the basic concept + consultation
February 28.	PHASE „A”

<b>Week 5</b>	<b>Monday 9.30-18.00</b>	
lecture	<b>Planning 11:15 -12:45</b>	<b>Building Structures 9:30 -11:00</b>
topic	The questions of the architectural function 02	Flat roofs, green roofs, terraces
practice	CONSULTATION AND INDIVIDUAL WORK	
March 7.	PHASE „B”	

<b>Week 6</b>	<b>Official resting day</b>	
	Individual work	
March14.	PHASE „B”	

<b>Week 7</b>	<b>Monday 9.30-18.00</b>	
lecture	<b>Planning 11:15 -12:45</b>	<b>Building Structures 9:30 -11:00</b>
topic	The importance of interior design in public buildings	Facades, Claddings
practice	CONSULTATION AND INDIVIDUAL WORK	
March 21	PHASE „B”	

<b>Week 8</b>	<b>Monday 9.30-18.00</b>	
lecture	<b>CASE STUDIES 9:30 -11:00 ZESZ</b>	
topic		
practice	<b>MID-TERM PRESENTATION</b>	
April 4	PHASE „B”	

<b>Week 9</b>	<b>Monday 9.30-18.00</b>	
lecture	<b>CASE STUDIES 9:30 -11:00 ZESZ</b>	
topic		
practice	CONSULTATION AND INDIVIDUAL WORK	
April 4	PHASE „C”	

<b>Week 10</b>	<b>Monday 9.30-18.00</b>	
lecture	<b>CASE STUDIES 9:30 -11:00 ZESZ</b>	
topic		
practice	CONSULTATION AND INDIVIDUAL WORK	
April 11	PHASE „C”	

<b>Week 11</b>	<b>SPRING BREAK</b>	
	Individual work	
April 18.	PHASE „B”	

<b>Week 12</b>	<b>Monday 9.30-18.00</b>	
lecture	<b>CASE STUDIES 9:30 -11:00 ZESZ</b>	
TEST	TEST on Building structures (10p) exact date will be announced before spring break	
practice	CONSULTATION AND INDIVIDUAL WORK	
April 25	PHASE „C”	

<b>Week 12</b>	<b>Tuesday 7:45-9:30 A201</b>	
	TEST on Building structures (10p)	
April 26	Submission of 5*10 A4 hand drawn details before the test	

<b>Week 13</b>	<b>Monday 9.30-18.00</b>
lecture	<b>CASE STUDIES 9:30 -11:00 ZESZ</b>
topic	
practice	CONSULTATION AND INDIVIDUAL WORK
May 02.	PHASE „C”

<b>Week 14</b>	<b>Monday 9.30-18.00</b>
	<b>Semester presentation</b>
<b>May 9.</b>	PHASE „C”

<b>Week 16</b>	<b>Monday 9.30-18.00</b>
	<b>Revision of the semester presentations</b>
<b>May 23</b>	<b>SEMESTER GRADE</b>

Pécs, 2022.02.05.

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