

## SYLLABUS

### 1. Data about the program of study

1.1	Institution	The Technical University of Cluj-Napoca
1.2	Faculty	Faculty of Building Services Engineering
1.3	Department	Building Services Engineering
1.4	Field of study	Civil Engineering and Building Services
1.5	Cycle of study	Master
1.6	Program of study/Qualification	Building Services for Regenerative Cities
1.7	Form of education	Full time
1.8	Subject code	4.00

### 2. Data about the subject

2.1	Subject name				Advanced Architecture						
2.2	Subject area				Architecture and Civil Engineering						
2.3	Course responsible/lecturer				Associate Professor Arch. Șerban Țigănaș PhD						
2.4	Teachers in charge of seminars				Lecturer Arch. Paul Mihai Moldovan PhD						
2.5	Year of study	1	2.6	Semester	1	2.7	Assessment	E	2.8	Subject category	DC/DS

### 3. Estimated total time

3.1	Number of hours per week	2	of which	3.2	Course	1	3.3	Seminar	-	3.3	Laboratory	1	3.3	Project	-
3.4	Total hours in the curriculum	28	of which	3.5	Course	14	3.6	Seminar	-	3.6	Laboratory	14	3.6	Project	-
3.7 Individual study:															
(a) Manual, lecture material and notes, bibliography														24	
(b) Supplementary study in the library, online and in the field														7	
(c) Preparation for seminars/laboratory works, homework, reports, portfolios, essays														14	
(d) Tutoring														-	
(e) Exams and tests														2	
(f) Other activities														-	
3.8 Total hours of individual study (sum (3.7(a)...3.7(f)))							47								
3.9 Total hours per semester (3.4+3.8)							75								
3.10 Number of credit points							3								

### 4. Pre-requisites (where appropriate)

4.1	Curriculum	Bachelor's in civil engineering, or Building Services Engineering, or Architecture, or Urbanism
4.2	Competence	Technical and Humanistic competences

### 5. Requirements (where appropriate)

5.1	For the course	Amphitheatre B-dul 21 December Nr.128-130, Cluj-Napoca
5.2	For the applications	Amphitheatre B-dul 21 December Nr.128-130, Cluj-Napoca

### 6. Specific competences

Professional Competences	<ul style="list-style-type: none"> <li>- Involvement of the building services engineer in conceiving the design brief</li> <li>- Development of the humanistic component of engineering</li> <li>- Development of collaborative skills based on the role of the engineer in digital integrated design processes</li> </ul>
Cross competences	<ul style="list-style-type: none"> <li>- Interdisciplinary perspective implementation in building design</li> <li>- Strategic planning skills for advanced investment objectives</li> <li>- Integration capacity of advanced technologies in building design</li> </ul>

## 7. Discipline objectives (as results from the *key competences gained*)

7.1	General objective	A comprehensive perspective on the new paradigm in construction
7.2	Specific objectives	<ul style="list-style-type: none"> <li>- A contemporary understanding of architecture as a holistic integrating discipline</li> <li>- An alignment of different construction professions into an advanced interdisciplinary process</li> <li>- Building a foundation for interdisciplinary advanced design</li> <li>- Integration of building services engineering in the conception and development of construction projects</li> <li>- Understanding of the future role of building services engineering</li> </ul>

## 8. Contents

8.1. Lecture (syllabus)		Number of hours	Teaching methods	Notes
1.	Architecture Today – An Introduction	1	Presentation and debate	Video-projector
2.	Form and Function, the Essential Binome	1		
3.	Design Thinking – Design Process	1		
4.	RE-Inventing construction – A Change of Paradigm	1		
5.	Hi-Tech, Low-Tech or a Smart combination?	1		
6.	Advanced Architecture – A Dictionary of Terms	1		
7.	Elements of Architecture – Floor, Ceiling, Wall	1		
8.	Elements of Architecture – Roof, Window, Facade	1		
9.	Elements of Architecture – Stair, Ramp, Escalator, Elevator	1		
10.	Elements of Architecture – Fireplace, Toilet	1		
11.	Permanence, Ephemerality and Life Cycle	1		
12.	Advanced Architectural Programs	1		
13.	The 17 Sustainable Development Goals in Architecture	1		
14.	Case Studies, Recent Experiences	1		

Total:		14		
Bibliography:		<ul style="list-style-type: none"> <li>- Designing the Profile of the Future Architect – Șerban Țigănaș. Andreea Robu-Movilă, Eusebia Mindirigiu, 2019</li> <li>- Re-Inventing Construction – Ilka and Andreas Ruby, 2010</li> <li>- Ephemeral Urbanism. Does permanence matter? – Rahul Mehrotra and Felipe Vera with Jose Mayoral, 2017</li> <li>- Smart Cities: Big Data, Civic Hakers, and the Quest for a New Utopia – Anthony Townsend, 2014</li> </ul>		
8.2. Applications/Laboratory		Number of hours	Teaching methods	Notes
1.	Architecture and Engineering in the History of Construction part 1	1	Presentation and debate	Video-projector
2.	Architecture and Engineering in the History of Construction part 2	1		
3.	Design Process in examples	1		
4.	Digital Shift in Design – Software for Building Design and Architecture	1		
5.	Low – Tech Case studies	1		
6.	Low – Tech Case studies	1		
7.	Elemente of Architecture – Case Studies part 1	1		
8.	Elemente of Architecture – Case Studies part 2	1		
9.	Elemente of Architecture – Case Studies part 3	1		
10.	Advanced Architecture Worldwide part 1	1		
11.	Advanced Architecture Worldwide part 2	1		
12.	Advanced Architecture in Romania part 1	1		
13.	Advanced Architecture in Romania part 2	1		
14.	Evaluation	1		
Total:		14		
Bibliography:		<ul style="list-style-type: none"> <li>- The Metapolis Dictionary of Advanced Architecture: city, technology and society i the information age – Manuel Gausa, Vicente Guallart, Willy Muller, Federico Soriano, Fernando Porrsa, Jose Morales</li> <li>- An Architectural Guide to the UN 17 Sustainable Development Goals – Natalie Mossin (chief editor), 2019</li> <li>- Elements of Architecture, Rem Koolhaas, 2014</li> </ul>		

**9. Bridging course contents with the expectations of the representatives of the community, professional associations and employers in the field**

The competences accumulated are necessary to activate the graduates in design activities, realization of buildings, consultancy and sales to meet the employers' requirements.

**10. Evaluation**

Activity type	10.1 Assessment criteria	10.2 Assessment methods	10.3 Weight in the final grade
Course	Knowledge testing from course and bibliography	Oral examination	50%
Applications	Knowledge testing and skills accumulated by applications	Written test	50%
<p>10.4 Minimum standard of performance</p> <p>Students need to pass the application test to be accepted at the examination.</p> <p>The components of the final grade are Examination (E) and Application lab (L).</p> <p>Therefore, the formula for the final grade calculation is <math>G=0.5 \times E + 0.5 \times L</math>.</p> <p>The 3 credits are obtained if both E and L are rewarded with minimum 5</p>			

Date of filling in:		Title Surname Name	Signature
12.06.2025	Lecturer	Assoc.prof.PhD.arch. Dragos Șerban ȚIGĂNAȘ	
	Teachers in charge of application	Lec.PhD.arch. Paul Mihai MOLDOVAN	

Date of approval in the Department of Building Services Engineering  19.06.2025	Head of department Assoc.Prof.PhD.Eng. Ciprian BACOTIU
Date of approval in the Council of the Faculty of Building Services Engineering  19.06.2025	Dean Assoc.Prof.PhD.Eng. Florin DOMNIȚA