

## SYLLABUS

### 1. Data about the program of study

1.1	Institution	The Technical University of Cluj-Napoca
1.2	Faculty	Faculty of Civil Engineering
1.3	Department	Constructii civile si management
1.4	Field of study	Civil Engineering
1.5	Cycle of study	Bachelor of Science
1.6	Program of study/Qualification	Civil, Industrial and Agricultural Buildings /Engineer (English language)
1.7	Form of education	Full time
1.8	Subject code	39.0

### 2. Data about the subject

2.1	Subject name				Bazele proiectarii cladirilor civile						
2.2	Course responsible/lecturer				Conf.Dr.Ing. Tamas Gavrea Daniela Roxana-Roxana.Tamas@ccm.utcluj.ro						
2.3	Teachers in charge of seminars				Conf.Dr.Ing. Tamas Gavrea Daniela Roxana-Roxana.Tamas@ccm.utcluj.ro						
2.4	Year of study	3	2.5	Semester	1	2.6	Assessment	E	2.7	Subject category	DS/DI

### 3. Estimated total time

3.1	Number of hours per week	4	3.2	of which, course:	2	3.3	applications:	2
3.4	Total hours in the curriculum	56	3.5	of which, course:	28	3.6	applications:	28
Individual study								hours
Manual, lecture material and notes, bibliography								20
Supplementary study in the library, online and in the field								20
Preparation for seminars/laboratory works, homework, reports, portfolios, essays								20
Tutoring								5
Exams and tests								2
Other activities								2
3.7	Total hours of individual study	69						
3.8	Total hours per semester	125						
3.9	Number of credit points	5						

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

4.1	Curriculum	N/A
4.2	Competence	N/A

### 5. Requirements (where appropriate)

5.1	For the course	<b>Onsite:</b> Classroom equipped with class board and multimedia equipment (video projector, laptop).
5.2	For the applications	<b>Onsite:</b> Classroom equipped with class board and multimedia equipment (video projector, laptop).

### 6. Specific competences

Professional competences	<p>C1.1 Identification of structural and functional role of the civil, industrial and agricultural construction elements.</p> <p>C1.2 Constructive composition explanation of different civil, industrial and agricultural constructions.</p> <p>C1.4 Assessing the quality of a civil, industrial and agricultural construction using evaluation criteria specific to the constructions field.</p> <p>C2.1 Identification of the construction materials and of structural types in constructions.</p> <p>C2.4 Evaluation, selection and optimal use of different construction element materials.</p> <p>C2.5 Transposition of the thermal dimensioning calculations in technical documents of civil, industrial and agricultural project.</p> <p>C5.1 Identification and application of technical regulations specific to civil, industrial and agricultural constructions.</p> <p>C5.4 Application of the quality standards provisions for the design of a civil, industrial and agricultural construction.</p>
Cross competences	<p>CT1. Applying efficient and responsible strategies for work, punctuality, seriousness and personal responsibility, based on the principles, norms and values of professional ethics.</p> <p>CT2. Applying efficient teamwork techniques, at different hierarchical levels.</p> <p>CT3. Documentation in English, for professional and personal development, through continuous training and efficient adaptation to new technical specifications.</p>

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

7.1	General objective	Development of skills in compliance with the design of civil buildings.
7.2	Specific objectives	<p>Implementation of building design principles.</p> <p>Assimilation of theoretical knowledge in terms of hygrothermal and acoustical conformation of building components and buildings.</p> <p>Application of norms concerning actions in constructions.</p>

## 8. Contents

8.1. Lecture (syllabus)	Teaching methods	Notes
1. General conformation and classification of constructions. Technical conditions. Technical prescriptions. The concept of performance. Legislation on the constructions design and execution in Romania.	Interactive exposure	<b>Onsite</b> class board, video projector
2. Building design. Structures for civil constructions. Modular coordination in constructions. Tolerances.		
3. Building elements. Walls.		
4. Building elements. Walls (continuation).		
5. Building elements. Slabs.		
6. Building elements. Slabs (continuation). Stairs.		
7. Building elements. Roofs.		
8. Building elements. Foundations. Basements. Waterproofings.		
9. Building Physics. Thermal comfort. Hygrothermics. Performance exigencies specific to the hygrothermal design of the buildings.		
10. Building Physics. Performance exigencies specific to the hygrothermal design of the buildings (continuation).		

11. Building Physics. Building acoustics. Daylight in buildings.		
12. Actions on structures. Definition. Classification. Permanent loads. Imposed loads.		
13. Actions on structures. Snow actions. Wind actions.		
14. Actions on structures. Thermal actions. Accidental actions. Seismic actions. Combinations of actions.		
Bibliography		
1)N. Cobirzan, M.Brumaru – BUILDINGS: STRUCTURAL AND NONSTRUCTURAL ELEMENTS, Ed. U.T. PRESS, 2012.		
2)Brumaru M. – HANDBOOK OF CIVIL ENGINEERING. MASONRY BUILDINGS, Ed. Dacia, 1997.		
3)S. S. Bhavikatti – BASIC CIVIL ENGINEERING, New Age International Limited Publishers, 2010.		
4)Chanakya Arya – DESIGN OF STRUCTURAL ELEMENTS: CONCRETE, STEELWORK, MASONRY AND TIMBER DESIGNS TO BRITISH STANDARDS AND EUROCODES, CRC Press, 2009.		
5)Andreica, H.-A., Munteanu, C., Muresanu, I., Moga, L., M., Tamas-Gavrea, R. – CONSTRUCȚII CIVILE, Ed. U.T. PRESS, 2009.		
6)Andreica, H.-A. – CONSTRUCȚII. ALCĂȚUIREA ȘI CALCULUL ELEMENTELOR DE CONSTRUCȚIE, Ed. U.T. PRESS, 2002.		
7)Comșa, E. ș.a. – CONSTRUCȚII CIVILE, vol.I și II, U.T.C.-N., Cluj-Napoca, 1992.		
8)Comșa, E. ș.a. – PROIECTAREA FUNCȚIONALĂ ȘI CONSTRUCTIVĂ A CLĂDIRILOR DE LOCUIT, vol I si II, I.P.C.-N, Cluj-Napoca, 1986-1987.		
9)Standards, norms, technical requirements.		
8.2. Applications/Seminars	Teaching methods	Notes
1. Presentation of the design topic: Functional and constructive design of a building: B.+G.F.+ 1L. Design stages.	Interactive exposure	Onsite class board, video projector
2. Dwelling functions. Rules in dwelling conformation. Functional elements in buildings. Surfaces and furniture. Technical and economic indices in dwellings. Functional layout for the ground floor and first floor/attic.		
3. Presentation of principles design according to “The design code for masonry structures”, indicative CR6-2013 and ”Seismic design code. Part I. Rules for buildings”, indicative P100-1/2013. Thickness and types of bearing and non-bearing walls. Openings for doors and windows. Lighting indices.		
4. Plan dimensioning. Modular coordination. Functional and constructive design of staircases.		
5. Ground floor and first floor/attic plan.		
6. Solution of the access in the building. Basement plan. Foundation plan. Details.		
7. Roof plan. Cross section. Details.		
8. Facades. Site plan. Plan for location in the environment.		
9. Verification of the project. Partial evaluation.		
10. Presentation of the calculation principles for the global thermal insulation coefficient of the designed dwelling. Determination of the geometrical features of the building.		
11. Determination of the corrected average thermal resistances as per type of element belonging to building envelope.		
12. Determination of the global thermal insulation coefficient (G).		
13. Comparison of the global thermal insulation coefficient (G) to norm values (GN).		
14. Verification of global thermal insulation coefficient calculation. Final evaluation.		

**Bibliography**

- 1) N. Cobirzan, M. Brumaru – BUILDINGS: STRUCTURAL AND NONSTRUCTURAL ELEMENTS, Ed. U.T. PRESS, 2012.
- 2) Brumaru M. – HANDBOOK OF CIVIL ENGINEERING. MASONRY BUILDINGS, Ed. Dacia, 1997.
- 3) Andreica, H.-A., Munteanu, C., Muresanu, I., Moga, L., M., Tamas-Gavrea, R. – CONSTRUCȚII CIVILE, Ed. U.T. PRESS, 2009.
- 4) Standards, norms, technical requirements.

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

The students are provided with adequate competencies associated with the current qualification requirements to ensure a fast insertion on the labor market.

## 10. Evaluation

Activity type	10.1 Assessment criteria	10.2 Assessment methods	10.3 Weight in the final grade
10.4 Course	Civil engineering theoretical questions.	Onsite (T) Written test.	75%
10.5 Applications	1) Functional and constructive design of a building: B.+G.F.+ 1L. 2) Thermotechnical calculation for the designed building.	Onsite (L) Partial/final evaluation of the project.	25%.
10.6 Minimum standard of performance			
a) Exam eligibility condition: -Attendance of the applications according to the Regulation on the professional activity of students using the ECTS system. -Project grade, ( $P \geq 5$ ): • each part of the submitted project $\geq 5$ ; • the final grade of the project is the arithmetic mean of the partial grades. b) $N_f = 0,75T + 0,25L$ The minimum grade required (theoretical test) $\geq 5$ The minimum grade required (project) $\geq 5$			

Date of filling in:		Title Surname Name	Signature
	Lecturer	Conf.Dr.Ing. Tamas Gavrea Daniela Roxana	
	Teachers in charge of application	Conf.Dr.Ing. Tamas Gavrea Daniela Roxana	

Date of approval in the department .....

20/06/2025

Head of department  
Conf.dr.ing. Caludiu ACIU

Date of approval in the faculty .....

25/06/2025

Dean  
Prof.dr.ing Daniela MANEA