

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	62.2

2. Data about the subject

2.1	Subject name				Tehnologii performante pentru lucrarile de constructii						
2.2	Course responsible/lecturer				Sl.Dr.Ing. Roman-Pintican Maria-Nicoleta-Nicoleta.Roman@ccm.utcluj.ro						
2.3	Teachers in charge of seminars				Sl.Dr.Ing. Roman-Pintican Maria-Nicoleta-Nicoleta.Roman@ccm.utcluj.ro						
2.4	Year of study	4	2.5	Semester	2	2.6	Assessment	E	2.7	Subject category	DS/DO

3. Estimated total time

3.1	Number of hours per week	3	3.2	of which, course:	2	3.3	applications:	
3.4	Total hours in the curriculum	42	3.5	of which, course:	28	3.6	applications:	
Individual study								hours
Manual, lecture material and notes, bibliography								26
Supplementary study in the library, online and in the field								20
Preparation for seminars/laboratory works, homework, reports, portfolios, essays								10
Tutoring								0
Exams and tests								2
Other activities								0
3.7	Total hours of individual study	58						
3.8	Total hours per semester	100						
3.9	Number of credit points	4						

4. Pre-requisites (where appropriate)

4.1	Curriculum	Curriculum
4.2	Competence	Competence

5. Requirements (where appropriate)

5.1	For the course	For the course
5.2	For the applications	For the applications

6. Specific competences

Professional competences	<p>C3.1 Description of technological processes for the construction of civil, industrial and agricultural constructions.</p> <p>After completing the discipline students will know: for the cranes used in construction, the criteria for comparing the technical-functional parameters; construction technology on cold weater; special methods of concreting; climbing formworks technology; slinding formworks technology; special formwork technology; the technology of accelerating concrete hardening; grownd anchor technology the technology of closures and partitioning; how to achieve and implement the Self-Compacting Concrete; how to make the tender specifications.</p> <p>C3.3 Designing technological processes specific to different phases of construction of civil, industrial and agricultural constructions for construction reasons.</p> <p>After completing the discipline students will be able to develop the technological process for:</p> <ul style="list-style-type: none"> - technology on cold weater; - technology for special methode of concreting; - technology for climbing formworks; - technology for slinding formworks; - technology for special formwork; - technology for accelerating concrete hardening; - technology for grownd anchor technology; - technology of closures and partitioning; - technology for Self-Compacting Concrete; - how to make the tender specifications. <p>How to choose the cranes used in construction, comparing the technical-functional parameters</p> <p>C3.5 Transposition of selected technologies into the technological project for civil, industrial and agricultural construction.</p>
Cross competences	<p>CT1 Apply effective responsible, punctuality, seriousness and personal responsibility strategies based on the principles, norms and values of professional ethics. Drafting and presenting a technical report in accordance with specific technical regulations;</p> <p>CT2 Apply efficient teamwork techniques, on various hierarchical levels. Achieving a technological project in team with respect to the technical - scientific content.</p>

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

7.1	General objective	General objective
7.2	Specific objectives	Specific objectives

8. Contents

8.1. Lecture (syllabus)	Teaching methods	Notes
1. Tower crane - qualitative faetures: technical and functional parameters(I)	-	-
2. Tower crane - qualitative faetures: technical and functional parameters (II)		
3. Prefabricated buildings. Mounting of precast elements		
4. Special formworks		
5. Climbing formworks		
6. Special methode of concreting(I)		

7. Special methode of concreting(II)		
8. Self-Compacting Concrete		
9. Influence of climatic factors on concrete technology		
10. Grownd anchor technology(I)		
11. Grownd anchor technology (II)		
12. Lift slab construction.		
13. Tender specifications		
14. Innovative Construction Techniques.		
Bibliography Bibliography 1. Domșa, J., Ionescu, A. – Utilaje, echipamente tehnologice și procedee performante de betonare, Editura OID.ICM, București, ISBN 973-9187-11-0, 1994 2. Domșa, J., Vescan, V., Moga, A. – Tehnologia lucrărilor de construcții și tehnologii speciale, vol.I, Institutul Politehnic Cluj-Napoca, 1988 3. Trelea, A., Popa, R., Giușcă, N., Domșa, J., Gheorghită, S., ș.a. – Tehnologia construcțiilor, vol.I, Editura Dacia, Cluj-Napoca, ISBN 973-35-0603-6, 1997 5. C16-84 - Normativ pentru realizarea pe timp friguros a lucrărilor de construcții și instalații		
8.2. Applications/Seminars	Teaching methods	Notes
1. For a multistory building determine Qnec, Hnec, Rnec. Will choose from a qualitative point of view an optimal tower crane, in items of technical and functional parameters: a) medium lifting capacity compared to the minimum and the maximum;	-	-
2. b) using area support and the useful area, calculate K1, K1*, K1**; c) the limits of using load moment, calculate k2; d)the efficient of use engine power for displacement mechanism and lifting mechanism, calculate k3, K4, K4*. For the optimal variant will draw vertical and horizontal work areas.		
3. For a multistory building determine Qnec, Hnec, Rnec. Will choose from a qualitative point of view an optimal crane, in items of technical and functional parameters: a) medium lifting capacity compared to the minimum and the maximum;		
4. b) using area support and the useful area, calculate K1, K1*, K1**; c) the limits of using load moment, calculate k2; d)the efficient of use engine power for displacement mechanism and lifting mechanism, calculate K4, K4*. For the optimal variant will draw vertical and horizontal work areas, and specify: Qmax/Qmin, Hmax/Hmin, Rmin/Rmax.		
5. For the superstructure of a building will do the tender specifications. (I)		
6. For the superstructure of a building will do the tender specifications. (II)		
7. Delivery of the project.		
Bibliography 6. NE-012 - Normativ pentru producerea betonului și executarea lucrărilor de construcții din beton, beton armat și beton precomprimat , partea 1/2007 - producerea betonului și partea		

2/2010 - executarea lucrărilor din beton 7. IPC (Institutul de proiectare pentru construcții industriale), București – proiect 7417/86, Catalogul general al mijloacelor tehnice necesare ramurii construcțiilor, vol.2 și vol.4, Mijloace de ridicat și manipulat. 10. Ghid privind elaborarea caietelor de sarcini pentru execuția lucrărilor de structuri din beton armat, COCC, mai 2003		
11. Ground anchor technology (II)		
Bibliography		

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

The acquired competencies will be required for employees who operate in engineering and execution-based companies (site, concrete plants).

10. Evaluation

Activity type	10.1 Assessment criteria	10.2 Assessment methods	10.3 Weight in the final grade
10.4 Course	Grid test.	Written test (theory) 70%	Written test (theory)
10.5 Applications	Delivery of the project. 30%	Project evaluation	Project evaluation
10.6 Minimum standard of performance			
-- Project evaluation: Evaluation of the project has to be minimum 5.			
-- Solving two subjects of theory for minimum 5.			

Date of filling in:		Title Surname Name	Signature
	Lecturer	Sl.Dr.Ing. Roman-Pintican Maria-Nicoleta	
	Teachers in charge of application	Sl.Dr.Ing. Roman-Pintican Maria-Nicoleta	

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