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	CCM
1.4	Field of study	Civil Engineering and Building Services
1.5	Cycle of study	Master of Science
1.6	Program of study/Qualification	CDB/ Master
1.7	Form of education	Full time
1.8	Subject code	16.00

2. Data about the subject

2.1	Subject name			Special Engineering Technologies in Construction			
2.2	Subject area			Civil Engineering and Building Services			
2.3	Course responsible/lecturer			Lecturer PhD. Eng. Andreea-Terezia MIRCEA *Andreea.Mircea@ccm.utcluj.ro*			
2.4	Teacher in charge of seminars			Lecturer PhD. Eng. Andreea-Terezia MIRCEA *Andreea.Mircea@ccm.utcluj.ro*			
2.5 Year of study	2	2.6 Semester	1	2.7Assessment	E	2.8 Subject category	DS / DI

3. Estimated total time

3.1 Number of hours per week	2	3.2 of which, course:	1	3.3 applications:	1
3.4 Total hours in the curriculum	28	3.5 of which, course:	14	3.6 applications:	14
Individual study					hours
Manual, lecture material and notes, bibliography					28
Supplementary study in the library, online and in the field					28
Preparation for seminars/laboratory works, homework, reports, portfolios, essays					12
Tutoring					-
Exams and tests					4
Other activities					-

3.7	Total hours of individual study	72
3.8	Total hours per semester	100
3.9	Number of credit points	4.0

4. Pre-requisites (where appropriate)

4.1	Curriculum	N/A
4.2	Competence	N/A

5. Requirements (where appropriate)

5.1	For the course	Multimedia equipment
5.2	For the applications	Multimedia equipment

6. Specific competences

Professional competences	C3.1. Description of technological processes for civil, industrial and agricultural construction. C3.3. Design of technological processes specific to the different phases for the execution of civil, industrial and agricultural construction elements.
Cross competences	CT1. Application of effective and responsible work strategies, punctuality, responsibility and personal liability based on principles, norms and values of professional ethics. CT2. Applying the techniques of effective team work on different hierarchical levels. CT3. Documentation in Romanian and in a foreign language, for professional and personal development through continuous training and effective adaptation to new technical specifications.

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

7.1	General objective	Development of skills and competencies needed in construction activities on compliance with safety requirements and sustainability
7.2	Specific objectives	Assimilation of knowledge regarding construction technologies

8. Contents

8.1.Lecture (syllabus)	Teaching methods	Notes
1. Special technologies for construction.	Exposure, discussions, multimedia presentations	Class board, video projector
2. Sliding formwork for elements with constant and variable height section.		
3. Use of the lifting procedure for construction.		
4. Application of green (vegetated) roof technology.		
5. Techniques and methods for relocation of constructions.		
6. Structural moving of buildings.		
7. Aspects regarding the post-use of constructions.		

Bibliography

1. AT Mircea - Concepte şi tehnologii de mediu în construcţia de locuinţe, Ed. UTPress 2001.
2. AT Mircea - Planşee dală pentru clădiri de locuit - Cerinţe tehnologice şi de proiectare, Ed. UTPress 2009.
3. AT Mircea "Construction Equipment for Earthwork Operations - Student Handbook", Ed. UTPress 2013.
4. AT Mircea - Lucrări de terasamente - Maşini de construcţii terasiere, Ed. UTPress 2014.
5. AT Mircea - Tehnologia construcţiilor - Finisaje, Ed. UTPress 2017.
6. A. Trelea, R. Popa, V. Vescan, J. Domşa, ş.a. - Tehnologia construcţiilor, vol.I, Ed. Dacia 1997.
7. J. Domsa, A. Ionescu - Utilaje, echipamente tehnologice si procedee performante de betonare, Editura OID.ICM, Bucuresti 1994.
8. A. Syed - Advanced Building Technologies for Sustainability, Wiley & Sons, 2012.
9. Standard Construction Procedures, Part E: General Earthworks Information, USA 2004.
10. Specification of Soil Handling and Disposal, Div.2, Sec 02115, USA.
11. EN 1992-1-1. Eurocode 2: Design of concrete structures - Part 1: General rules and rules for buildings.

12. Design and Execution of Earthworks, Section 1: Studies and Execution of Work - Technical Guide, Setra (Service d'Etude Technique) 2007.		
8.2.Applications/Seminars	Teaching methods	Notes
1. Design and analysis of subassemblies of a building. Theme presentation and working instruction	Exposure, discussions	Class board, video projector
2. Goal setting. Technical regulations in the field.		
3. Establishing the related technological processes		
4. Selecting of materials, machinery and technical equipment		
5. Efficiency investigation upon the technological solutions chosen within the theme. Result analysis and discussion.		
6. Developing documentary syntheses regarding the adopted building technology. Recommendations.		
7. Final verification of the project.		

Bibliography

1. AT Mircea - Concepte şi tehnologii de mediu în construcţia de locuinţe, Ed. UTPress 2001.
2. AT Mircea - Planşee dală pentru clădiri de locuit - Cerinţe tehnologice şi de proiectare, Ed. UTPress 2009.
3. AT Mircea "Construction Equipment for Earthwork Operations - Student Handbook", Ed. UTPress 2013.
4. AT Mircea - Lucrări de terasamente - Maşini de construcţii terasiere, Ed. UTPress 2014.
5. AT Mircea - Tehnologia construcţiilor - Finisaje, Ed. UTPress 2017.
6. A. Trelea, R. Popa, V. Vescan, J. Domşa, ş.a. - Tehnologia construcţiilor, vol.I, Ed. Dacia 1997.
7. J. Domsa, A. Ionescu - Utilaje, echipamente tehnologice si procedee performante de betonare, Editura OID.ICM, Bucuresti 1994.
8. A. Syed - Advanced Building Technologies for Sustainability, Wiley & Sons, 2012.
9. Standard Construction Procedures, Part E: General Earthworks Information, USA 2004.
10. Design and Execution of Earthworks, Section 1: Studies and Execution of Work - Technical Guide, Setra (Service d'Etude Technique) 2007.
11. EN 1992-1-1. Eurocode 2: Design of concrete structures - Part 1: General rules and rules for buildings.
12. Design and Execution of Earthworks, Section 1: Studies and Execution of Work - Technical Guide, Setra (Service d'Etude Technique) 2007.

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

Acquired skills will be necessary to the civil engineers who work in structural design, construction companies and consultancy offices.

10. Evaluation

Activity type	10.1 Assessment criteria	10.2 Assessment methods	10.3 Weight in the final grade
10.4 Course	Fulfilling requirements for examination of theoretical part with min grade 5/10	Written paper (W)	75 %

10.5 Applications	Declared admissible, with min. grade 5/10	Verification and discussion (A)	25 %
10.6 Minimum standard of performance			
Grade 5/10, with the condition that W ≥ 5 and A ≥ 5			

Date of filling in: 30.09.2019		**Title Surname Name**	**Signature**
	Lecturer	Lecturer PhD. Eng. Andreea-Terezia MIRCEA	
	Teacher in charge of application	Lecturer PhD. Eng. Andreea-Terezia MIRCEA	

Date of approval in the Department CCM

_____

Head of department
Conf. PhD. Eng. Claudiu ACIU

Date of approval in the Faculty of Civil Engineering

_____

Dean
Conf. PhD. Eng. Nicolae CHIRA