

SYLLABUS ¹

1. Information about the program

1.1 Higher education institution	POLITEHNICA UNIVERSITY TIMIȘOARA
1.2 Faculty ² / Department ³	Civil Engineering/Management
1.3 Chair	—
1.4 Field of study (name/code ⁴)	CIVIL ENGINEERING / 80
1.5 Study cycle	Bachelor
1.6 Study program (name/code/qualification)	CIVIL ENGINEERING IN ENGLISH / 10 / ENGINEER

2. Information about the discipline

2.1 Name of discipline/ formative category ⁵	Management of constructions and building sites / DS						
2.2 Coordinator (holder) of course activities	Ș.I. dr. ing. NEGRUȚ Mircea Liviu						
2.3 Coordinator (holder) of applied activities ⁶	Ș.I. dr. ing. NEGRUȚ Mircea Liviu						
2.4 Year of study ⁷	IV	2.5 Semester	7	2.6 Type of evaluation	E	2.7 Type of discipline ⁸	DI

3. Total estimated time – hours / semester: direct teaching activities (fully assisted or partly assisted) and individual training activities (unassisted) ⁹

3.1 Number of fully assisted hours / week	4 of which:	3.2 course	2	3.3 seminar / laboratory / project	2
3.1* Total number of fully assisted hours / semester	56 of which:	3.2* course	28	3.3* seminar / laboratory / project	28
3.4 Number of hours partially assisted / week	of which:	3.5 training		3.6 hours for diploma project elaboration	
3.4* Total number of hours partially assisted / semester	of which:	3.5* training		3.6* hours for diploma project elaboration	
3.7 Number of hours of unassisted activities / week	2 of which:	additional documentary hours in the library, on the specialized electronic platforms and on the field			
		hours of individual study after manual, course support, bibliography and notes			1
		training seminars / laboratories, homework and papers, portfolios and essays			1
3.7* Number of hours of unassisted activities / semester	28 of which:	additional documentary hours in the library, on the specialized electronic platforms and on the field			
		hours of individual study after manual, course support, bibliography and notes			14
		training seminars / laboratories, homework and papers, portfolios and essays			14
3.8 Total hours / week ¹⁰	6				
3.8* Total hours /semester	84				
3.9 Number of credits	4				

4. Prerequisites (where applicable)

4.1 Curriculum	<ul style="list-style-type: none"> • Technology 1 • Management
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¹ The form corresponds to the Discipline File promoted by OMECTS 5703 / 18.12.2011 and to the requirements of the ARACIS Specific Standards valid from 01.10.2017.

² The name of the faculty which manages the educational curriculum to which the discipline belongs

³ The name of the department entrusted with the discipline, and to which the course coordinator/holder belongs.

⁴ The code provided in HG no.140 / 16.03.2017 or similar HGs updated annually shall be entered.

⁵ Discipline falls under the educational curriculum in one of the following formative disciplines: Basic Discipline (DF), Domain Discipline (DD), Specialist Discipline (DS) or Complementary Discipline (DC).

⁶ Application activities refer to: seminar (S) / laboratory (L) / project (P) / practice/training (Pr).

⁷ Year of studies in which the discipline is provided in the curriculum.

⁸ Discipline may have one of the following regimes: imposed discipline (DI), optional discipline (DO) or optional discipline (Df).

⁹ The number of hours in the headings 3.1 *, 3.2 *, ..., 3.8 * is obtained by multiplying by 14 (weeks) the number of hours in headings 3.1, 3.2, ..., 3.8. The information in sections 3.1, 3.4 and 3.7 is the verification keys used by ARACIS as: (3.1) + (3.4) ≥ 28 hours / wk. and (3.8) ≤ 40 hours / wk.

¹⁰ The total number of hours / week is obtained by summing up the number of hours in points 3.1, 3.4 and 3.7.

	<ul style="list-style-type: none"> • Practical training
4.2 Competencies	<ul style="list-style-type: none"> • Mathematics III

5. Conditions (where applicable)

5.1 of the course	<ul style="list-style-type: none"> • Classroom, accompanying material: laptop, projector, screen, blackboard, examples, case studies.
5.2 to conduct practical activities	<ul style="list-style-type: none"> • Classroom, blackboard, standards collections for construction work processes.

6. Specific competencies acquired through this discipline

Specific competencies	<ul style="list-style-type: none"> • Acquire technical and applicative knowledge related to the planning of the execution of the construction works
Professional competencies ascribed to the specific competencies	<ul style="list-style-type: none"> • Technological and economical design for the erection, operation and maintenance works in civil engineering, specific to graduated study programme • Organization and management of the execution, operation and maintenance procedures for civil, industrial and agricultural constructions
Transversal competencies ascribed to the specific competencies	<ul style="list-style-type: none"> • Application of efficient and responsible work strategy, implying punctuality, seriously and personal responsibility, based on the principles, rules and values of professional ethics • Application of efficient team work techniques on miscellaneous hierarchical tiers • Documentation in Romanian and foreign language, in view of professional and personal development, via continuous learning and efficient adaptation to the new technical specifications

7. Objectives of the discipline (based on the grid of specific competencies acquired - pct.6)

7.1 The general objective of the discipline	<ul style="list-style-type: none"> • The course aims is to teach students the technical and applicative knowledge related to the planning of the execution of the construction works. Students will learn three planning methods and will understand the transposition of different technologies into calendar charts. • This knowledge are necessary for the future civil engineer, both in the preparation of tender documentation / public procurement of the construction works, and in the preparation and tracking of construction production.
7.2 Specific objectives	<ul style="list-style-type: none"> • Organizing and conducting work processes, specific to the study program. • Planning of construction works by Gantt charts, CPM and chain method, resource scheduling and optimization of human resource consumption. Organizing the construction site and material repository.

8. Content ¹¹

8.1 Course	Number of hours	Teaching methods ¹²
1. The Planning Subsystem	2	Interactive methods. Lecture (exposition) supported by PPT
2. Methods of production scheduling 2.1. The Gantt method	2	

¹¹ It details all the didactic activities foreseen in the curriculum (lectures and seminar themes, the list of laboratory works, the content of the stages of project preparation, the theme of each practice stage). The titles of the laboratory work carried out on the stands shall be accompanied by the notation "(*)".

¹² Presentation of the teaching methods will include the use of new technologies (e-mail, personalized web page, electronic resources etc.).

2.2. Critical Path Method	4	presentations, discussions, explanations, examples, case studies.
2.3. Programming, allocating and leveling resources	2	
2.4. The "chain" method	4	
3. Technical and Material Supply	4	
4. The mechano-energetic subsystem	4	
5. The Research & Development Subsystem (R & D)	4	
6. Production Subsystem	2	

Bibliography ¹³ 1. Government Decision no. 907 of 29 November 2016 (* updated *) on the elaboration phases and the framework content of the technical and economic documentation related to the public-financed investment objectives / projects.

2. NEGRUȚ Mircea, Course Notes – Organizarea lucrărilor de construcții, UPT, 2017, ppt format;

3. Univ.-Prof. Dr.-Ing. Josef Zimmermann, Basic Course Construction Process Management Project development, production and Cost planning - TU Munchen, Lehrstuhl für Bauprozessmanagement und Immobilienentwicklung, 2011;

4. Univ.-Prof. Dr.-Ing. Josef Zimmermann, Supplementary Course Building Process Management - TU Munchen, Lehrstuhl für Bauprozessmanagement und Immobilienentwicklung, 2011;

5. Univ.-Prof. Dr.-Ing. Josef Zimmermann, Cybernetics of Planning Processes - TU Munchen, Lehrstuhl für Bauprozessmanagement und Immobilienentwicklung, 2011;

6. Univ.-Prof. Dr.-Ing. Josef Zimmermann, Turnkey building construction and civil engineering - TU Munchen, Lehrstuhl für Bauprozessmanagement und Immobilienentwicklung, 2011;

7. Univ.-Prof. Dr.-Ing. Josef Zimmermann, Business process management in the construction industry - TU Munchen, Lehrstuhl für Bauprozessmanagement und Immobilienentwicklung, 2011;

8. Univ.-Prof. Dr.-Ing. Josef Zimmermann, Principles of Project Management - TU Munchen, Lehrstuhl für Bauprozessmanagement und Immobilienentwicklung, 2011;

9. Ignaton E. – Management în construcții, Timișoara, Editura „Politehnica”, 2010

10. Oana. T.L. – Analiza de sistem a întreprinderilor de construcții., Editura Politehnica, Timișoara, 2004

11. P. Alan - „Ingineria organizării șantierelor de construcții”, Ed. Eurobit, Timișoara, 2000.

8.2 Applied activities ¹⁴	Number of hours	Teaching methods
1. Programming the execution of construction works using the Gantt chart.	8	Interactive methods, discussions, explanations, examples, case studies
2. Programming the execution of construction works by the Critical Path Method – PERT	8	
3. Programming the execution of construction works by the chain method	6	
4. Organization of the construction site	4	
5. Project presentation / evaluation.	2	

Bibliography ¹⁵ 1. Negruț Mircea, 2017, - Works notes for the elaboration of technical and economic documentation in constructions, pdf format.

2. Government Decision no. 907 of 29 November 2016 (* updated *) on the elaboration phases and the framework content of the technical and economic documentation related to the public-financed investment objectives / projects.

3. Univ.-Prof. Dr.-Ing. Josef Zimmermann, Basic Course Construction Process Management Project development, production and Cost planning - TU Munchen, Lehrstuhl für Bauprozessmanagement und Immobilienentwicklung, 2011;

4. Univ.-Prof. Dr.-Ing. Josef Zimmermann, Supplementary Course Building Process Management - TU Munchen, Lehrstuhl für Bauprozessmanagement und Immobilienentwicklung, 2011;

5. Univ.-Prof. Dr.-Ing. Josef Zimmermann, Cybernetics of Planning Processes - TU Munchen, Lehrstuhl für Bauprozessmanagement und Immobilienentwicklung, 2011;

6. Univ.-Prof. Dr.-Ing. Josef Zimmermann, Turnkey building construction and civil engineering - TU Munchen, Lehrstuhl für Bauprozessmanagement und Immobilienentwicklung, 2011;

7. Univ.-Prof. Dr.-Ing. Josef Zimmermann, Business process management in the construction industry - TU Munchen, Lehrstuhl

¹³ At least one title must belong to the discipline team and at least one title should refer to a reference work for discipline, national and international circulation, existing in the UPT library.

¹⁴ Types of application activities are those specified in footnote 5. If the discipline contains several types of applicative activities then they are sequentially in the lines of the table below. The type of activity will be in a distinct line as: "Seminar:", "Laboratory:", "Project:" and / or "Practice/training".

¹⁵ At least one title must belong to the discipline team.

für Bauprozessmanagement und Immobilienentwicklung, 2011;
 8. Univ.-Prof. Dr.-Ing. Josef Zimmermann, Principles of Project Management - TU Munchen, Lehrstuhl für Bauprozessmanagement und Immobilienentwicklung, 2011;
 9. Ignaton E. – Management în construcții, Timișoara, Editura „Politehnica”, 2010
 10. Oana. T.L. – Analiza de sistem a întreprinderilor de construcții., Editura Politehnica, Timișoara, 2004
 11. P. Alan - „Ingineria organizării șantierelor de construcții”, Ed. Eurobit, Timișoara, 2000.

9. Corroboration of the content of the discipline with the expectations of the main representatives of the epistemic community, professional associations and employers in the field afferent to the program

- The content of the course is aligned with the current requirements of employers in construction companies and real estate developers.

10. Evaluation

Type of activity	10.1 Evaluation criteria ¹⁶	10.2 Evaluation methods	10.3 Share of the final grade
10.4 Course	<ul style="list-style-type: none"> - Learning the terminology; - Allocation, Programming and Leveling of Resources; - Workloads for workers and equipment. - The role of different subsystems in the construction company. 	Written exam (concept and knowledge assessment test and practical application)	50%
10.5 Applied activities	S:		
	L: Verification of laboratory works + evaluation of the presentation / understanding of the planning methods for the execution of construction works and site organization.	Project presentation, questions and answers.	50%
	P¹⁷:		
	Pr:		
10.6 Minimum performance standard (minimum amount of knowledge necessary to pass the discipline and the way in which this knowledge is verified ¹⁸)			
<ul style="list-style-type: none"> • learning the terminology; • understanding the planning methods for the execution of construction works; • organization of the construction site. 			

Date of completion

25.01.2018

**Head of Department
(signature)**

.....

**Course coordinator
(signature)**

**Date of approval in the Faculty
Council ¹⁹**

12.02.2018

**Coordinator of applied activities
(signature)**

**Dean
(signature)**

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¹⁶ Syllabus must contain the procedure for assessing the discipline, specifying the criteria, methods and forms of assessment, as well as specifying the weightings assigned to them in the final grade. The evaluation criteria shall be formulated separately for each activity foreseen in the curriculum (course, seminar, laboratory, project). They will also refer to the forms of verification (homework, papers, etc.)

¹⁷ In the case where the project is not a distinct discipline, this section also specifies how the outcome of the project evaluation makes the admission of the student conditional on the final assessment within the discipline.

¹⁸ It will not explain how the promotion mark is awarded.

¹⁹ The endorsement is preceded by the discussion of the board's view of the study program on the discipline record.