

SYLLABUS ¹

1. Information about the program

1.1 Higher education institution	Universitatea Politehnica Timișoara
1.2 Faculty ² / Department ³	Faculty of Civil Engineering / Department of Steel Structures and Structural Mechanics
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	Composite Steel Concrete Structures/DS						
2.2 Coordinator (holder) of course activities	Assistant Prof. PhD, Ioan Marginean						
2.3 Coordinator (holder) of applied activities ⁶	Assistant Prof. PhD, Ioan Marginean						
2.4 Year of study ⁷	4	2.5 Semester	8	2.6 Type of evaluation	E	2.7 Type of discipline ⁸	DOI

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			0.5
		hours of individual study after manual, course support, bibliography and notes			1
		training seminars / laboratories, homework and papers, portfolios and essays			0,5
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			7
		hours of individual study after manual, course support, bibliography and notes			14
		training seminars / laboratories, homework and papers, portfolios and essays			7
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"> Strength of Materials, Reinforced Concrete Structures, Steel Structures, Structural Analysis
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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.

4.2 Competencies	<ul style="list-style-type: none"> Physics and Mathematical operations
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5. Conditions (where applicable)

5.1 of the course	<ul style="list-style-type: none"> Large capacity room. Support materials: laptop, video projector, projection screen, blackboard/ whiteboard
5.2 to conduct practical activities	<ul style="list-style-type: none"> Seminar room, blackboard/ whiteboard, computers

6. Specific competencies acquired through this discipline

Specific competencies	<ul style="list-style-type: none"> Acquire practical skills necessary to design steel-concrete structure elements
Professional competencies ascribed to the specific competencies	<ul style="list-style-type: none"> Recognizing typical structures and structural elements, specific to the graduated study programme Design of structural elements in civil engineering, specific to graduated study programme
Transversal competencies ascribed to the specific competencies	<ul style="list-style-type: none"> 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 to develop the practical skills necessary to design steel-concrete structure elements for static actions using EUROCODES.
7.2 Specific objectives	<ul style="list-style-type: none"> First of all, the phenomena underlying the composite action of elements made up of different materials are explained. The course focuses on the calculation of composite elements made of metallic profiles attached to concrete elements. Only the elements commonly found in current practice are studied: composite beams, composite columns, composite floors and joints. At the end of the course, the student must be able to imagine and design such composite systems

8. Content¹¹

8.1 Course	Number of hours	Teaching methods ¹²
Introduction.	4	The course is presented on a PC using screen sharing software on students' PC's. The requirements for the lab works are given
Composite steel-concrete beams (elastic, plastic and tension stress on composite beams.	8	
Columns with composite steel-concrete cross-section (compression (buckling) and flexural compression (interaction curve M-N	4	
Composite connections.	8	

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.).

Composite steel-concrete slabs.	4	individually as pdf documents to the students. e

Bibliography ¹³

- Oehlers D.J., Bradford M.A., Composite Steel and Concrete Structural Members, ISBN 0 08 041919 Pergamon, 1995 ;
- David A. Nethercot, Composite Construction, Spon Press, Tazlor and Francis, 2004, ISBN ISBN 0-203-45733-1

8.2 Applied activities ¹⁴

	Number of hours	Teaching methods
Presentation of the structure to be designed, static calculation	42	demonstrations, structural analysis (at the computer), model verification
Design of the composite beam	8	
Design of the composite beam steel-concrete connection and SLS calculus.	4	
Design of the column with composite cross-section.	8	
Connection design.	4	
s.	\	
	2	

Bibliography ¹⁵

- prEN 1994-1-1. EUROCODE 4: Part 1.1 – Design of composite steel and concrete structures Brussels: CEN, European Committee for Standardisation, Final Draft, August / September 2003

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 discipline is in accordance with the requirements needed by civil engineers to be able to design composite structures
- The content was updated to keep in touch with the requirements of the work market

10. Evaluation

Type of activity	10.1 Evaluation criteria ¹⁶	10.2 Evaluation methods	10.3 Share of the final grade
10.4 Course	Subjects presented at the course	Oral examination – 3 subjects	50%
10.5 Applied activities	S:		
	L:		
	P ¹⁷ : Project defence	Model and computations verification	50%
	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)			

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.

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.

- Both grades, for evaluating the course skills and the practical works skills must be at least 5

Date of completion

**Course coordinator
(signature)**

**Coordinator of applied activities
(signature)**

**Head of Department
(signature)**

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

**Dean
(signature)**

12.02.2018

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