

SYLLABUS ¹

1. Information about the program

1.1 Higher education institution	Politehnica University Timisoara
1.2 Faculty ² / Department ³	Faculty of Civil Engineering/ CMMC - 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	Master
1.6 Study program (name/code/qualification)	Civil engineering (in English)/ 10/ Engineer

2. Information about discipline

2.1 Name of discipline/The educational classe ⁵	Introduction to fire design						
2.2 Coordinator (holder) of course activities	Prof.dr.ing. ZAHARIA Raul						
2.3 Coordinator (holder) of applied activities ⁶	Sl. Dr. ing. PINTEA Dan						
2.4 Year of study ⁷	1	2.5 Semester	2	2.6 Type of evaluation	E	2.7 Type of discipline ⁸	DA

3. Total estimated time (direct activities (fully assisted), partially assisted activities and unassisted activities⁹)

3.1 Number of hours fully assisted/week	3 ,of which:	3.2 course	2	3.3 seminar/laboratory/project			1
3.1* Total number of hours fully assisted/sem.	42 ,of which:	3.2* course	28	3.3* seminar/laboratory/project			14
3.4 Number of hours partially assisted/week	,of which:	3.5 project, research		3.6 training		3.7 hours designing M.A. dizertation	
3.4* Number of hours pasrtially assisted/ semester	,of which:	3.5* project of research		3.6* training		3.7* hours designing M.A. dizertation	
3.8 Number of hours of unassisted activities/ week	3 ,of which:	Additional documentation in the library, on specialized electronic platforms, and on the field					1
		Study using a manual, course materials, bibliography and lecture notes					1
		Preparation of seminars/ laboratories, homework, assignments, portfolios, and essays					1
3.8* Total number of hours of unasssited asctivities/ semester	42 ,of which:	Additional documentation in the library, on specialized electronic platforms, and on the field					14
		Study using a manual, course materials, bibliography and lecture notes					14
		Preparation of seminars/ laboratories, homework, assignments, portfolios, and essays					14
3.9 Total hrs./week ¹⁰	6						
3.9* Total hrs./semester	84						
3.10 No. of credits	6						

4. Prerequisites (where applicable)

4.1 Curriculum	•
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¹ The form corresponds to the Syllabus promoted by OMECTS 5703/18.12.2011 (Annex 3), updated based on the Specific Standards ARACIS of December 2016.

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 Fill in the code provided in HG no. 376/18.05.2016 or in HG similars annually updated.

⁵ The educational classes of subjects (ARACIS – specific standards, art./paragraph 4.1.2.a) are: fundamental subjects, field subjects, majoring/specialization subjects.

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

⁷ The year of study to which the discipline is provided in the curriculum .

⁸ The types of subjects (ARACIS – specific standards, art./paragraph 4.1.2.a) are: extended knowledge subject / advanced knowledge subject and synthetic subject (DA / DCAV and DS).

⁹ Within UPT, the number of hours from 3.1*, 3.2*,...,3.9* are obtained by multiplying by 14 (weeks) the number of hours from 3.1, 3.2,..., 3.9.

¹⁰ The total number of hours/week is obtained by summing up the number of hours from 3.1, 3.4 și 3.8.

4.2 Competencies	•
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5. Conditions (where applicable)

5.1 of the course	• Classroom of medium capacity
5.2 to conduct practical activities	• Classroom of medium capacity

6. Specific competencies acquired through this discipline

Specific competencies

- Understanding of the design models for fire design of structures within the specific Eurocodes

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Professional competencies ascribed to the specific competencies	• Proiectare în construcții cu posibilitatea asumării responsabilității de conducător • Activitate de cercetare, dezvoltare în domeniul structurilor pentru construcții • Consultanță, asistență tehnică și verificări de proiecte
Transversal competencies ascribed to the specific competencies	• Documentation in Romanian and foreign language, in view of professional and personal development, via continuous learning and efficient adaptation to the internationalization trends and new international requirements

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

7.1 The general objective of the discipline	• The aim of the course is to give to the students an understanding of the design models for fire design of structures within the specific Eurocodes. The lectures and the applications are concentrated on the fire design of steel and composite steel-concrete elements using the simplified calculation models of Eurocodes, but the course provides also more general information on the topic of fire design.
7.2 Specific objectives	• After completion of the course, the student should be able to determine the fire resistance of a structural element according to the Eurocodes.

8. Content

8.1 Course	Number of hours	Teaching methods
1. INTRODUCTION	2	
2. MECHANICAL LOADING	2	
3.THERMAL ACTION	2	
4.THERMAL ANALYSIS	2	
5.MECHANICAL ANALYSIS	2	
6.CONNECTIONS	2	
7.FIRE DESIGN OF COMPOSITE STEEL AND CONCRETE ELEMENTS	2	

Bibliography ¹¹ Andrew H. Buchanan - Structural Design for Fire Safety, John Wiley & Sons Ltd., 2001 J.M. Franssen, V. Kodur, R. Zaharia - Designing Steel Structures for Fire Safety - CRC Press Taylor & Francis Group – Balkema, London, UK, 2009		
8.2 Applied activities¹²	Number of hours	Teaching methods
Thermal analysis	2	Conversations, explanations, examples
Verification of members subjected to tension	1	
Verification of members subjected to compression	1	
Verification of members subjected to bending	1	
Verification of members subjected to bending and compression	1	
Fire models	1	
Bibliography ¹³ Andrew H. Buchanan - Structural Design for Fire Safety, John Wiley & Sons Ltd., 2001 J.M. Franssen, V. Kodur, R. Zaharia - Designing Steel Structures for Fire Safety - CRC Press Taylor & Francis Group – Balkema, London, UK, 2009		

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 graduates should be able to determine the fire resistance of a structural element according to the Eurocodes

10. Evaluation

Type of activity	10.1 Evaluation criteria ¹⁴	10.2 Evaluation methods	10.3 Share of the final grade
10.4 Course	2 questions from the presented lectures	Written examination	50%
10.5 Applied activities	S: 1 application	Written examination	50%
	L:		
	P:		
	Pr:		
	Tc-R¹⁵:		

¹¹ At least one title must belong to the department staff teaching the discipline, and at least one title must refer to a relevant work for the discipline, a national and international work that can be found in the UPT Library.

¹² The types of applied activities are those mentioned in 5. If the discipline contains more types of applied activities then they are marked, consecutively, in the table below. The type of activity will be marked distinctively under the form: „Seminar:“, „Laboratory:“, „Project:“ and/or „Practice/Training:“.

¹³ At least one title must belong to the staff teaching the discipline.

¹⁴ The Syllabus must contain the evaluation method of the discipline, specifying the criteria, the methods and the forms of evaluation, as well as mentioning the share attached to these within the final mark. The evaluation criteria must correspond to all activities stipulated in the curriculum (course, seminar, laboratory, project), as well as to the methods of continuous assessment (homework, essays etc.)

¹⁵ Tc-R= Homework-Reports

10.6 Minimum performance standard (minimum amount of knowledge necessary to pass the discipline and the way in which this knowledge is verified¹⁶)

- The final mark must accumulate a minimum score of 5 points out of 10 possible

Date of completion

**Course coordinator
(signature)**

**Coordinator of applied activities
(signature)**

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**Head of Department
(signature)**

**Date of approval in the Faculty
Council ¹⁷**

**Dean
(signature)**

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¹⁶ For this point turn to "Ghid de completare a Fișei disciplinei" found at: http://univagora.ro/m/filer_public/2012/10/21/ghid_de_completare_fisa_disciplinei.pdf

¹⁷ The approval is preceeded by discussing the study program's board's point of view with redgards to the syllabus.