

## SYLLABUS

### 1. Data about the program of study

1.1	Institution	The Technical University of Cluj-Napoca
1.2	Faculty	Faculty of Constructions
1.3	Department	Civil engineering and management
1.4	Field of study	Civil Engineering
1.5	Cycle of study	Bachelor of Science
1.6	Program of study/Qualification	CE
1.7	Form of education	Full time
1.8	Subject code	26.00

### 2. Data about the subject

2.1	Subject name				Fire safety of Constructions						
2.2	Subject area				Engineering sciences						
2.3	Course responsible/lecturer				Şef lucr. Dr. ing. MSc Ruxandra M Dârmon ruxandra.darmon@ccm.utcluj.ro						
2.4	Teachers in charge of seminars				Şef lucr. Dr. ing. MSc Ruxandra M Dârmon ruxandra.darmon@ccm.utcluj.ro						
2.5	Year of study	2	2.6	Semester	1	2.7	Assessment	C	2.8	Subject category	DD/DI

### 3. Estimated total time

3.1	Number of hours per week	1	3.2	of which, course:	1	3.3	applications:	-
3.4	Total hours in the curriculum	50	3.5	of which, course:	14	3.6	applications:	-
Individual study								hours
Manual, lecture material and notes, bibliography								28
Supplementary study in the library, online and in the field								7
Preparation for seminars/laboratory works, homework, reports, portfolios, essays								-
Tutoring								-
Exams and tests								1
Other activities								-
3.7	Total hours of individual study	36						
3.8	Total hours per semester	50						
3.9	Number of credit points	2						

### 4. Pre-requisites (where appropriate)

4.1	Curriculum	N/A
4.2	Competence	N/A

### 5. Requirements (where appropriate)

5.1	For the course	N/A
5.2	For the applications	-

## 6. Specific competences

Professional competences	<p>C5.1 Identification, selection of the specific terminology, concepts and design methods for fire safety in constructions</p> <p>C5.2 The use and application of the specific fire safety design methods</p> <p>C5.3 Application of the design and quality standards for fire safety structural design.</p> <p>C5.4 The elaboration of the specific documentation and fire safety assessments, in line with the modern criteria and code requirements.</p>
Cross competences	<p>CT1 The application of the work place strategy in agreement with the norms and professional ethics code.</p> <p>CT2 The application of the team working strategy based on the professional hierarchy.</p> <p>CT3 Research of the latest technical advances and Continual personal development.</p>

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

7.1	General objective	<p>The student should understand and be able to apply:</p> <ul style="list-style-type: none"> <li>the basic concepts of fire safety engineering sciences.</li> <li>the standard fire safety regulations in use</li> </ul>
7.2	Specific objectives	<ul style="list-style-type: none"> <li>The knowledge and the application of the specific standard regulations for fire safety in structural engineering;</li> <li>The application of the specific design principles and methods;</li> <li>The capacity to elaborate, to present and to analyse the technical documents related to a fire safety strategy.</li> <li>Team work skills.</li> </ul>

## 8. Contents

8.1. Lecture (syllabus)	Teaching methods	Notes
1. Introduction. Reliability concept		
2. Enclosure fire. Fire severity. Stages of a natural fire		
3. Criteria for flashover. Heat release rate		
4. Fire modeling. Thermal load density		
5. Fire behaviour of structural elements. Testing methods		
6. Fire protection of the structural elements		
Bibliography		
<ul style="list-style-type: none"><li>• Darmon R. Fire safety of constructions – lecture notes.</li><li>• SR EN 1991-1-2 Eurocod 1: Acțiuni asupra construcțiilor, Partea 1-2: Acțiuni generale. Acțiuni asupra structurilor expuse la foc</li><li>• Buchanan, A.,H., Structural Design for Fire Safety, John Wiley &amp; Sons, LTD, Chichester, New York, Weinheim, Brisbane, Singapore, Toronto, 2001</li></ul>		


<ul style="list-style-type: none"> <li><a href="http://www.difisek.eu">http://www.difisek.eu</a></li> </ul>		
8.2. Applications/Seminars	Teaching methods	Notes
Bibliography		

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

The competencies achieved will be required for the employees working in consulting companies and contractors (site and supplying).

**10. Evaluation**

Activity type	10.1 Assessment criteria	10.2 Assessment methods	10.3 Weight in the final grade
10.4 Course			
10.5 Applications			
10.6 Minimum standard of performance			

Date of filling in:		Title Surname Name	Signature
11.10.2020	Lecturer	Şef lucr. Dr. ing. MSc DÂRMON Ruxandra	
	Teachers in charge of application		

Date of approval in the department ..... _____	Head of department Conf.dr.ing. ACIU Claudiu
Date of approval in the faculty ..... _____	Dean Conf.dr.ing. CHIRA Nicolae