

## 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 Constructions and Management
1.4	Field of study	Civil Engineering
1.5	Cycle of study	Bachelor of Science
1.6	Program of study/Qualification	Civil Engineering (CCIA-eng)
1.7	Form of education	Full time
1.8	Subject code	45.20

### 2. Data about the subject

2.1	Subject name	Fire safety of constructions									
2.2	Subject area	Civil engineering									
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	-									
2.5	Year of study	2	2.6	Semester	II	2.7	Assessment	C	2.8	Subject category	DS/DOP

### 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:	28	3.6	applications:	-
Time distribution								hours
Manual, lecture material and notes, bibliography								28
Supplementary study in the library, online and in the field								18
Preparation for seminars/laboratory works, homework, reports, portfolios, essays								-
Tutoring								2
Exams and tests								2
Other activities								-
3.7	Total hours of individual study	50						
3.8	Total hours per semester	78						
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	N/A

## 6. Specific competences

Professional competences	<p>C5.1 The student should be able to identify and to select the appropriate technical methods for fire safety design of civil structures</p> <p>C5.2 The student should be able to understand the specific terms and methods of fire safety engineering in order to design a fire safety strategy for a building.</p> <p>C5.3 The student should be familiar with the fire safety regulations for buildings</p> <p>C5.4 The student should be able to elaborate the technical documentation for a building, in line with the fire safety code requirements.</p>
Cross competences	<p>CT1 The application a good working strategy, based on efficiency and responsibility.</p> <p>CT2 Responsibility at the working place and good team work strategy.</p> <p>CT3 Continuous personal development and the ability to adopt new technologies and technical specifications.</p>

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

7.1	General objective	<p>Constructive and functional conformation of buildings concerning fire safety.</p> <p>Qualitative evaluation of constructions fire behaviour</p>
7.2	Specific objectives	<p>The student should be able to apply the fire safety regulations for buildings.</p> <p>Design a fire safety strategy for different types of buildings</p>

## 8. Contents

8.1. Lecture (syllabus)	Teaching methods	Notes
1. Introduction. Combustion theory.	Presentation, discussion	Projector
2. Empirical correlations for fire plumes.		
3. Stages of an enclosure fire.		
4. Flashover criteria.		
5. Simple fire models according to SR EN 1991-1-2		
6. Advanced fire models according to SR EN 1991-1-2		
7. Material fire behaviour. Fire reaction tests.		
8. Structural fire behaviour. Fire resistance tests.		
9. Fire behaviour and fire protection of steel structures		
10. Fire behaviour and fire protection of concrete structures		
11. Fire behaviour and fire protection of timber structures		
12. Romanian fire safety regulations – P118/99		
13. Fire safety strategy according to P118/99		
Bibliography		
<p>1. R.Darmon <i>Introduction to fire safety engineering</i> – lecture notes.</p> <p>2. Buchanan, A.,H., <i>Structural Design for Fire Safety</i>, John Wiley &amp; Sons, LTD, Chichester, New York, Weinheim, Brisbane, Singapore, Toronto, 2001</p>		

3. <a href="http://www.difisek.eu">http://www.difisek.eu</a>		
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 achieved competences will be a requirement for the employees working for 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	Theory questions and/or multiple-choice test paper	Written exam: 2 hours	100%
10.5 Applications	-		
10.6 Minimum standard of performance			
Grade 5			

Date of filling in:		Title Surname Name	Signature
18.10.2018	Lecturer	Şef lucr. dr ing MSc Ruxandra DĂRMON	
	Teachers in charge of application		

Date of approval in the department .....	Head of department Prof.dr.ing. Conf.dr.ing. Claudiu Aciu
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Date of approval in the faculty .....	Dean Prof.dr.ing. Conf.dr.ing. Nicolae Chira
___20.07.2018___	