DESCRIPTION OF A STUDY COURSE – SYLLABUS

Title of a course	**Theory of combustion and fire-extinguishing**				
Head of course	**Dinko Jurjević, Lecturer**				
Study programme	**Professional undergraduate study Occupational Safety**				
Status of a course	Obligatory				
Year of study	1.	**Semester**	II	**ECTS credits**	5
Teaching plan (L + E + S+ Pr)	2+2+0+0				

Goals of a course

To acquaint students with legislation in the field of fire protection, theory of combustion, equations of combustion, diagrams of development of fire, calculation of fire risk, theory of extinguishing.

Conditions for enrolling course

No conditions

Learning outcomes on a level of a study programme which includes course

Outcome 4: Evaluate protective measures with respect to danger encountered in the work process.
Outcome 16: Identify safety factors in the field of fire protection and explosion protection.

Expected learning outcomes on a level of a course

1. Describe the basics of burning theory,
2. Analyse combustion equations,
3. Analyse fire development diagrams,
4. Calculate fire risk,
5. Identify the basics of fire-extinguishing theory, fire categories and fire-extinguishing agents

Content of a course

Physical and chemical fundamentals of combustion process: Definition of combustion, conditions needed for combustion, thermodynamics, kinetic of combustion process, limits of explosiveness, fire hazards and methods of prevention, categorization of inflammables and partial and full combustion products. Quantity of reactors and products of combustion as to their volume and mass. Zones of hazard, storing and decanting of inflammable liquids and gasses. Hazard assessment. Physical and chemical fundamentals of fire-extinguishing process: Definition and conditions needed for fire extinguishing. Assessing the needed quantity of fire-extinguishers. Mobile, partially mobile and fixed systems of fire extinguishing; fire alarm systems in chemical plants. Legislative regulations.

Teaching modes	☒ lectures ☐ auditory exercises ☒ seminars and workshops ☐ distance learning ☐ field classes	☒ individual assignments ☐ multimedia and network ☐ laboratory ☐ supervisor's work ☐ other _____
Comments		

Students' obligations

The requirement for admission to the exam is a completed project assignment.

Grading, evaluation and monitoring of students' work continuously during lectures and exams

Grading is based upon evaluation of course's learning outcomes' adoption. Grading is performed continuously during lectures and/or during exam, in compliance with the provisions of Regulation on the assessment of students.

Continuous check-up:

Outcomes	**Pre-exam I**	**Project task**	**Threshold***	**Max****
Outcome 1	20 %		*10 %*	20 %

Outcome 2	20 %		*10 %*	20 %
Outcome 3	20 %	20%	*10 %*	20 %
Outcome 4		20 %	*10 %*	20 %
Outcome 5			*10 %*	20 %
Percentage of ECTS	*3*	*2*	-	-
Total	60 %	40 %	*50 %*	100 %

A student has passed the exam if he has acquired a percentage of credits for each learning outcome higher or equal to defined threshold.

Exam term:

Outcomes	Written exam*	Oral exam*	Max**
Outcome 1	10 %	10 %	20 %
Outcome 2	10 %	10 %	20 %
Outcome 3	10 %	10 %	20 %
Outcome 4	10 %	10 %	20 %
Outcome 5		20 %	20 %
Percentage of ECTS	*2*	*3*	
Total	40 %	60 %	100 %

A student has passed the exam if he has acquired a percentage of credits for each learning outcome higher or equal to defined threshold.

Grading:

A student has passed the exam if he has acquired at least 50% of anticipated credits of a specific learning outcome.

If a student has passed learning outcomes of all courses, the accomplished credits (percentages) of all passed learning outcomes are being added, while the final grade is defined upon following table:

Range of credits (percentages)	Numerical grade	ECTS grade
90,00 – 100,00	Excellent (5)	A
75,00 – 89,99	Very good (4)	B
60,00 – 74,99	Good (3)	C
50,00 – 59,99	Sufficient (2)	D
0,00 – 49,99	Insufficient (1)	F

Obligatory literature

1. Tehnička enciklopedija, svezak 13 1997. Leksikografski zavod Miroslav Krleža, Zagreb

Additional literature