

Appendix 3. Subject's program of 1st cycle of studies		
1.	Title of the subject	Research methodology of fires and explosions
2.	Code	
3.	Study program	Criminology
4.	Organizer of the study program (unit, institute, department, section)	Department for criminology
5.	Grade (1 st , 2 nd , 3 rd cycle)	1
6.	Academic year/semester	2014/2015, 5 th semester
7.	Quantity of ECTS credits	3
8.	Lecturer	PhD Rose Smileski, full professor, Ass. Marjan Gjurovski, MA
9.	Precondition for enrolment of the subject	To enrol the fifth semester
10.	Purposes of the subject's program (competences)	Empower students to work independently in performing various expertise (expert evidence) at various fires and explosions, regardless of whether they are as a consequence of the fires themselves, or in other circumstances caused by various substances and explosive devices.
11.	Subject's summary	<p><i>Topic: LECTURE:</i> Introductory lecture and historical overview of the scientific discipline, introducing to the students the study program, the method of its implementation, pointing out the compulsory and supplementary literature, method of examination, T-1, Combustion - burning (core processes and types of substances)</p> <p><i>Topic: LECTURE:</i> T-2, Ignition and burning of flammable materials depending on the aggregate state (solid, liquid and gaseous) EXERCISES: after topics 1 and 2, making the pattern of burning wood objects, sketch combustion fluid</p> <p><i>Topic: LECTURE:</i> T-3, Cause of fire (heat transfer, electricity as cause of fire, electrical facilities, installations and devices as carriers of fire EXERCISES: after topic -3 Study visit to a hydroelectric plant on the River Treska (introduction to the production and transport of electricity)</p> <p><i>Topic: LECTURE:</i> T-3, Cause of fire - extension (glitches that occur when using electricity, static electricity , natural causes of fire) EXERCISES: after topic -3, extension (look at the materials under fire : traces of wooden items, glass, paper, metal parts, stones, bricks, electrical installations, heaters)</p>

		<p><i>Topic: LECTURE:</i> T-4, Determining the causes of fires T-5, Duration of fire, stress, maximum temperature and methods</p> <p>EXERCISES: after topic - 4 и 5, Traces typical of fires (burnt the place, inside the building, outside the building in the centre of the fire). Inspect the site of the fire</p> <p><i>Topic: LECTURE:</i> T-6, General for explosion, explosives types, characteristic of the explosive reaction, explosive processes</p> <p>EXERCISES: Effect of blast on the environment - traces of explosive substances at the site of explosion</p> <p><i>Topic: LECTURE:</i> T-7, Explosive substances (initial , suppressed, and briznatni, pyrotechnic mixtures)</p> <p>EXERCISES: Study visit of mine Banjani. Purpose of the visit is to introduce the commercial explosives, their effect on the environment (especially a hard rock), and detection of traces of commercial explosives</p> <p><i>Topic: LECTURE:</i> T-8, Types and construction of ammunition EXERCISES: T-8, Effect of munitions on target, within this exercise is necessary to visit " Eurokompozit - 11.Oktomvri " in Prilep</p> <p><i>Topic: LECTURE:</i> T-9, Effects of explosive substances (effect of ammunition on live targets, actions and demolition and cumulative effect) EXERCISES: Laboratory exercises in the laboratories of the Military academy after T-9</p> <p><i>Topic: LECTURE:</i> T-10, Analysis of materials EXERCISES: Laboratory exercises in the laboratories of the Military academy after T-10</p> <p><i>Topic: LECTURE:</i> T-10, Analysis of materials EXERCISES: after T-10</p> <p><i>Topic: LECTURE:</i> T-11, Examination of the chemical stability of the powders, as cause of fires EXERCISES: after T-11</p>
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12	Methods of learning	Independently, and through consultation exercises with visits of planned institutions		
13	Total available fund of time	75		
14	Schedule of the available time	28 lecture 15 exercises		
15	Form of classes activities	15.1	Lectures-theoretic classes	28 hours
		15.2	Exercises (laboratory, auditoria), seminars, team work	15 hours
16.	Other form of activities	16.1	Project's tasks	17 hours
		16.2	Independent tasks	25 hours
17.	Method of assessment			
	17.1.	Tests	80 points	
	17.2.	Seminar work / project (presentation: textual and oral)	10 points	
	17.3.	Activity and participation	10 points	
18	Assessment criteria (points/assessment)		Under 50 points	5(Five) (F)
			From 51 to 60 points	6(Six) (E)
			From 61 to 70 points	7(Seven) (D)
			From 71 to 80 points	8(Eight) (C)
			From 81 to 90 points	9(Nine) (B)
			From 91 to 100 points	10(Ten) (A)

19.	Condition for signature and passing the exam	Permanent attendance at lectures and exercises for full-time students.			
20.	Class language	Macedonian			
21	Method of evaluation of the class quality	Through self-evaluation regularly implemented by authorized internal committee.			
22.	Literature				
	22.1.	Compulsory literature			
		No.	Author	Title	Publisher/Year
		1.	R. Smileski	Research methodology of fires and explosions	Faculty for security, textbook, 2010, Skopje
		2.	Zaklin Akavan	Chemistry of explosives	
	22.2.	Supplementary literature			
		No.	Author	Title	Publisher/Year
		1.	R. Lj. Smileski	Ammunition and explosives - theoretical foundations	Maring, Skopje, 1998;
	2.	R, Lj. Smileski, O. B. Popovski	Internal ballistics	Military academy, Skopje	

		3.	R. Smileski	Keeping ammunition as a condition of high alert	First scientific symposium, defensive - protective system of the Republic of Macedonia - conditions and perspectives, Ohrid 1997;
		4.	R. Dimitrijevic	Appendix maintenance ammunition	New Bulletin, Beograd, 1994, 48
		5.	Mihail Timofejevic Kalashnikov	Note of weapon constructor, Zastava arms	AD, Kraguevac, 2006 (translation)
		6.	Websites of manufacturers of weapons and ammunition		