

DESCRIPTION OF A STUDY COURSE – SYLLABUS

Title of a course	Safety systems				
Head of course	Ivan Grakalić, Lecturer				
Study programme	Professional undergraduate study Occupational Safety				
Status of a course	Obligatory				
Year of study	3.	Semester	V	ECTS credits	5
Teaching plan (L + E + S+ Pr)	2+1+0+0				
Goals of a course					
Introduce students to the basics of technical protection systems (burglar alarms, video surveillance and access control), security systems (automatic fire alarms and related systems) and the legislative framework of these systems.					
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 12: Recommend solutions in the field of occupational ergonomics, security and safety in technological processes.					
Expected learning outcomes on a level of a course					
<ol style="list-style-type: none"> 1. Describe the regulatory environment for the design and implementation of technical protection systems. 2. Describe the functions of the individual elements of anti-burglary systems and access control systems 3. Describe the functions and operation of the automatic fire alarm, gas alarm and smoke extraction system 4. Compare classic and online video surveillance 5. Describe the specifics of power supply and signal transmission for all covered systems 					
Content of a course					
Analysis of the necessity to introduce security systems. Sources, types and level of hazards. Types of security. Characteristics of passive and active detectors. Central devices and appliances for sound alarming. Transmit of alarm signal. Physical barriers. Security systems: pressure detectors, ultrasound, piezoelectric effect, electromagnetic field, photoelectric effect, and infrared radiation. An example of safety alarm systems for indoors and outdoors, models of security, security in transport, detecting and alarming other hazardous events. Video control and its usage in security systems. Examples of security systems in industry, banking business, commerce, computing centres, transport and tourism. Use of computers in security systems.					
Teaching modes	<input checked="" type="checkbox"/> lectures <input type="checkbox"/> auditory exercises <input checked="" type="checkbox"/> seminars and workshops <input type="checkbox"/> distance learning <input type="checkbox"/> field classes		<input checked="" type="checkbox"/> individual assignments <input type="checkbox"/> multimedia and network <input type="checkbox"/> laboratory <input type="checkbox"/> supervisor's work <input type="checkbox"/> other _____		
Comments					
Students' obligations					
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	Pre-exam 2	Independent work	Threshold	Max

Outcome 1			20%	10%	20%
Outcome 2	30%			15%	30%
Outcome 3		20%		10%	20%
Outcome 4		10%		5%	10%
Outcome 5	10%	10%		10%	20%
Percentage of ECTS	2	2	1		
Total	40%	40%	20%	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	15%	5%	20%
Outcome 2	25%	5%	30%
Outcome 3	15%	5%	20%
Outcome 4	5%	5%	10%
Outcome 5	15%	5%	20%
Percentage of ECTS	3,75	1,25	5
Total	75%	25%	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. Teaching materials published on the course web site
2. Brodić, Osnove sigurnosne tehnike
3. Private Protection Act

Additional literature

1. Delišimunović, Suvremeni koncepti i uređaji zaštite
2. Damjanovski, CCTV (second edition)

