

**POLYTECHNIC OF RIJEKA  
OCCUPATIONAL SAFETY DEPARTMENT**

**PROGRAMME OF STUDY**

**SPECIALIST PROFESSIONAL GRADUATE STUDY OF  
OCCUPATIONAL SAFETY**

- **List of courses**

### Specialist professional graduate study of occupational safety

#### 1<sup>st</sup> year of study – Semester I (winter semester)

Course unit number	Courses	Hours per week				ECTS points	Exams
		L	S	E	P		
1	Administrative procedure	2	2	-	-	6	1
2	Alarm systems used in safety	2	1	1	-	6	1
3	Marketing in safety	2	2	-	-	6	1
4	Technology of the protection of people and property	2	-	2	-	6	1
5	Examination of a work environment	2	-	2	-	6	1
	<b>Total in the semester</b>	<b>10</b>	<b>5</b>	<b>5</b>		<b>30</b>	<b>5</b>

Note: L = lecture, S = seminar, E = exercise, P = practical

#### 1<sup>st</sup> year of study – Semester II (summer semester)

Course unit number	Courses	Hours per week				ECTS points	Exams
		L	S	E	P		
6	Risk assessment and protection planning	2	-	2	-	6	1
7	Waste management	2	1	1	-	6	1
8	Safety management	2	1	1	-	6	1
9	International law, safety and health protection	2	2	-	-	6	1
10	Integral quality management system	2	2	-	-	6	1
	<b>Total in the semester</b>	<b>10</b>	<b>6</b>	<b>4</b>		<b>30</b>	<b>5</b>

2<sup>nd</sup> year of study – Semester III (winter semester)

Course unit number	Courses	Hours per week				ECTS points	Exams
		L	S	E	P		
11	Management in safety	2	-	1	-	5	1
12	Assessment and management of fire protection	2	-	2	-	5	1
	<b>Specifics</b>						
13	Protection of information systems	2	-	2	-	5	1
26	Sea and coastal ecology	2	1	1	-	5	1
27	Protection against terrorism	2	-	1	-	5	1
	Adult education					5	
	<b>Total in the semester</b>	<b>12</b>	<b>1</b>	<b>8</b>		<b>30</b>	<b>6</b>

2<sup>nd</sup> year of study – Semester IV (summer semester)

Course unit number	Courses	Hours per week				ECTS points	Exams
		L	S	E	P		
28	Specialist professional internship*	-	-	-	x	15	-
29	Specialist final work	-	-	x	-	15	1
	<b>Total in the semester</b>	-	-	(x)	(x)	<b>30</b>	<b>1</b>

\* Specialist professional internship lasts 260 hours.

Total of the entire programme of specialist professional graduate study of occupational safety.

Semester	Hours of teaching per semester					ECTS points	Exams
	L	S	E	P	Total		
1 <sup>st</sup> semester	150	75	75	-	300	30	5
2 <sup>nd</sup> semester	150	90	60	-	300	30	5
3 <sup>rd</sup> semester							
<i>Occupational safety in industry</i>	180	15	120	-	315	30	6
<i>Fire protection</i>	180	30	105	-	315	30	6
<i>Safety in civil engineering and forestry</i>	180	30	105	-	315	30	6
<i>General safety</i>	180	15	120	-	315	30	6
4 <sup>th</sup> semester	-	-	(x)	(x)	(x)	30	1
<b>Total</b>							
<i>Occupational safety in industry</i>	480	180	255	(x)	915	120	17
<i>Fire protection</i>	480	195	240	(x)	915	120	17
<i>Safety in civil engineering and forestry</i>	480	195	240	(x)	915	120	17
<i>General safety</i>	480	180	255	(x)	915	120	17

During the studies students enrol in a total of 915 hours of various forms of classes, and with the completion of all study obligations they earn a total of 120 ECTS points.

## **COURSE DESCRIPTION OF SPECIALIST PROFESSIONAL GRADUATE STUDY OF OCCUPATIONAL SAFETY**

### **ADMINISTRATIVE PROCEDURE**

**Course number: 1**

**Weekly hours: 2+2+0+0/ I**

**ECTS points: 6**

#### **General contents of the subject**

Legal rules in administrative procedure. Principles of administrative procedure. Parties. The rights and obligations of the parties in the procedure. Types of administrative procedure. Jurisdiction. Statements. Appealing. Minutes. Time limits. Evidence. Expenses. Settlement. Special procedures to the rights of occupational safety and fire protection. Implementation. Administrative dispute.

#### **The development of general and specific competences (knowledge and skills)**

The knowledge and skills which are expected from the students when they finish the study enable the practice of basic general and special administrative procedures to the rights of occupational safety, and especially in inspection procedures with all employers. Also expected is the professional legal help of others.

#### **Formats of teaching and method of verifying knowledge**

The course is carried out weekly, in the form of consultancy.

**ALARM SYSTEMS USED IN SAFETY****Course number: 2****Weekly hours: 2+1+1+0/ I****ECTS points: 6****General contents of the subject**

General information about systems of technical protection. Safety systems: characteristics, analysis of threats, principles of safety implementation. Basic parts of a system: sensors (detectors), transmission lines, central devices, power supply. Safety systems for various purposes. Consideration of the approaches to the designing of safety systems. Legal regulations.

**The development of general and specific competences (knowledge and skills)**

The students will become familiar with the basic safety (alarm) systems and their use in the protection of people and property. As safety engineers they will be able to participate in making a threat assessment, making a safety report and the definition of a project task.

**Formats of teaching and method of verifying knowledge**

The course is carried out weekly, in the form of consultancy.

**MARKETING IN SAFETY****Course number: 3****Weekly hours. 2+2+0+0 / I****ECTS points: 6****General contents of the subject**

The concept of marketing, basic terms, the evolution of the concept. Social responsibility of marketing. The notion and dimensions of the market and characteristics of the market in safety. Specifics of marketing in the protection of people and property. The entities that offer protection of people and property. The planning and control of marketing activities. The organisation of marketing activities in economic entities specialised in the protection of people and property. Functions of marketing in safety. Segmentation of the market and positioning in the market. Specifics of the marketing mix in safety. Consumer protection in the Republic of Croatia's market.

**The development of general and specific competences (knowledge and skills)**

By passing the exams the students gain knowledge of the possibilities of the applications of marketing in various economic activities, the influence of the implementation of marketing concepts on the successfulness of business on a micro level, and on the quality of life and overall economic and social development. After attending the course the students will be in the situation to perceive the social consequences of marketing decisions with an emphasis on the importance of the protection of the interests of the consumers, employees and wider social communities.

**Formats of teaching and method of verifying knowledge**

The course is carried out weekly, in the form of consultancy.

**PROTECTION OF PEOPLE AND PROPERTY****Course number: 4****Weekly hours: 2+0+2+0/ I****ECTS points: 6****General contents of the subject**

Introduction. Sources, forms and most common methods of threats. Legal regulation of the protection of people and property. The activity of state and private protection of people and property. Implementation of safety. Legal foundations for the organisation of a security company and an internal security service. The organisation, work and functioning of a security company and an internal security service. The creation of conditions of safety. Training of staff and quality of equipment. Detective business affairs. Protection activity registers. Exercises.

**The development of general and specific competences (knowledge and skills)**

Familiarisation with the basics of the structure, work and operation of the main entities of the protection of people and property in the Republic of Croatia. The acquired knowledge and skills enable the independent management of matters of physical protection and sufficient knowledge for the possibilities of using technical protection.

**Formats of teaching and method of verifying knowledge**

The course is carried out weekly, in the form of consultancy.



**EXAMINATION OF A WORK ENVIRONMENT****Course number: 5****Weekly hours: 2+0+2+0/ I****ECTS points: 6****General contents of the subject**

Introduction to the examination of a working environment. Terminology, definitions and glossary. Legal regulations in the control of the working environment. Elements of the EN ISO 14001 standard. Sources of hazards in industry: chemical hazards (metals, paints and degreasing agents, organic solvents, plastics, gases, acids, alkalis); biological hazards (bacteria, viruses, fungi); physical hazards (electromagnetic radiation, noise, vibration, lighting). Aspects of the environment and impacts on the environment. Measurements of individual aspects of the environment. Methods of measurement and measuring instruments. Criteria for the assessment of individual aspects of the environment. Analysis of measurement results. Technical and personal measures of protection. Measures for improving the condition of the working environment.

**The development of general and specific competences (knowledge and skills)**

In the framework of the subject the students gain the basic knowledge about the methods of the supervision of a working environment.

**Formats of teaching and method of verifying knowledge**

The course is carried out weekly, in the form of consultancy.

**RISK ASSESSMENT AND PROTECTION PLANNING****Course number: 6****Weekly hours: 2+0+2+0/ II****ECTS points: 6****General contents of the subject:**

Introduction: Existing legislation with which the obligations of owners and users are set in the planning and implementation of protection from fire and explosion. Urban planning and construction measures of fire protection. Technological measures of protection. The contents and production of threat assessment of legal entities and local government and administration. Methods of producing a threat assessment (buildings, building elements, local, regional and state levels). Dangers of fire, fire loading and planning measures of protection. The categorisation of buildings and their components in classes of threat. Prescribed and recommended measures of protection. Economic acceptability and cost-effectiveness study of taken measures, possible consequences. Control over measures of protection. The role of insurer and relations with the owner of a building or territory.

**The development of general and specific competences:**

Students prepare for the independent production of acceptable assessments and plans of protection at all levels of danger from the appearance and spread of fire.

**Formats of teaching and method of verifying knowledge:**

The course is carried out weekly, in the form of consultancy.

**WASTE MANAGEMENT****Course number: 7****Weekly hours: 2+1+1+0/ II****ECTS points: 6****General contents of the subject**

*Introduction to the problem of waste:* Definition, waste matter, waste. Historical overview of the quantity, types and methods of waste disposal. Strategic guidelines and goals of waste management.

*Waste disposal:* Dumping of waste: advantages and disadvantages, dangers to the environment and measures for reducing harmful effects. Mechanical biological treatment: types of procedure, basic concepts, advantages and disadvantages. *Waste incineration:* advantages and disadvantages, dangers to the environment and measures for reducing harmful effects. The recycling of waste matter, composting of biodegradable waste: advantages and disadvantages.

**The development of general and specific competences (knowledge and skills)**

Familiarisation with the basic concepts from the field of waste matter and various technologies of waste disposal. The impact on the environment and possible material and energy utilisation is specially dealt with. The students gain knowledge with which they are capable to assess waste in the sense of the impact on the environment and the possible use for material energetic needs.

**Formats of teaching and method of verifying knowledge**

The course is carried out weekly, in the form of consultancy.

**SAFETY MANAGEMENT****Weekly hours: 2+1+1+0/ II****Course number: 8****ECTS points: 6****General contents of the subject**

Introduction to occupational safety. Terminology, definitions and glossary. A trading company as a business-production system. Definitions and types of fundamental processes. The system and regulation of occupational safety. Legal regulations of occupational safety. Elements of OHSAS 18001:1996. Requirements of an occupational health and safety management system (in Croatian SUZIS). Documentation of SUZIS. Independent assessment of SUZIS. Confirmation (certification) of SUZIS. Monitoring and recertification visits. Removal of non-compliance and methods for improving SUZIS.

**The development of general and specific competences (knowledge and skills)**

Within the framework of the subject the students gain the basic knowledge about the systematic approach to safety management.

**Formats of teaching and method of verifying knowledge**

The course is carried out weekly, in the form of consultancy.

**INTERNATIONAL LAW, HEALTH AND SAFETY****Course number: 9****Weekly hours: 2+2+0+0/ II****ECTS points: 6****General contents of the subject**

Universal sources of safety laws, health protection and health insurance, special occupational safety and protection of the health of workers. The programme has three parts: Universal source of laws of safety and health protection; Industrial relations (social partners and industrial actions); International law of occupational safety and health protection.

**The development of general and specific competences (knowledge and skills)**

Familiarisation with universal and regional sources of law, especially of those which are ratified in the Republic of Croatia, and which relate directly to occupational safety and health protection.

**Formats of teaching and method of verifying knowledge**

The course is carried out weekly, in the form of consultancy.

**INTEGRAL QUALITY MANAGEMENT SYSTEM****Course number: 10****Weekly hours: 2+2+0+0/ II****ECTS points: 6****General contents of the subject**

The concept of quality. Historical development of the integral quality management system. Strategic quality management. Quality of products, services, processes and organisations. Quality management systems ISO 9000:2000 and ISO 14 000:1996, HACCP, OHSAS 18 001, SA 8000 and others. Measurability and standardisation of quality. Instruments of quality measurement. Principles of the quality management system ISO 9000:2000. Requirements of standards. Quality policies. Documentation. Motivation. Guidance. Teamwork. Process and project approach. Examples of successful and unsuccessful applications of systems of quality management. The Croatian experience in the field of quality management.

**The development of general and specific competences (knowledge and skills)**

The use of key concepts of quality management systems. The formation of preconditions necessary for the establishment of a system of quality in a company, and the application of methods for their maintenance and improvement. Differentiation of specificities of quality systems in various activities.

**Formats of teaching and method of verifying knowledge**

The course is carried out weekly, in the form of consultancy.

**MANAGEMENT IN SAFETY****Course number: 11****Weekly hours: 2+0+1+0 / III****ECTS points: 5****General contents of the subject**

Lectures: Introductory discussions. The development of the theory of management in the world: Conventional, unconventional theories and modern trends (management of overall quality, business process reengineering, the learning organisation). World management and comparative analyse of management. Management as a system. Strategic management. Entrepreneurial management. Project management. Management changes. Business ethics. Organisational culture. Career management. Creativity in management. Management of conflicts.

Seminars (processing of business cases): Organisation of management in large businesses. Examples of business and strategic plans. E-business. Conduct of meetings. Practice of effective directors. Managerial decision-making.

**The development of general and specific competences (knowledge and skills)**

The development of general and specific competences in connection to the management of businesses, and organisations in general, with the emphasis on modern trends and practical application.

**Formats of teaching and method of verifying knowledge**

The course is carried out weekly, in the form of consultancy.

**ASSESSMENT AND MANAGEMENT OF FIRE PROTECTION****Course number: 12****Weekly hours: 2+0+2+0/III****ECTS points: 5****General contents of the subject:**

Introduction: The structure of protection and rescue service in the Republic of Croatia. The experience of other countries. Management of protection regarding dangers. Obligations and responsibilities within systems of protection and rescue, obligations of local authorities and government, regional and state authorities. The planning and management of fire protection in legal entities with increased fire dangers (chemical processing facilities, wood industry, forests, agricultural land and open space, energy facilities). Competences and structure of the management of fire protection. Dealings in repressive fire protection and management of interventions in line with plans. Plans of protection and rescue and their use. Organisation of a fire brigade service and the training of intervention personnel. The use of human and technical resources which are not included in the protection system, possibilities and solutions. Standard operational procedures and the tactical solution of specific interventions of fire extinguishing, rescue and accidents. Planning in the fire service.

**The development of general and specific competences:**

Students are prepared for the independent management of interventions, planning needs and realisation of the necessary organisational technical procedures with the aim of organising operational and economically acceptable effective repressive fire protection.

**Formats of teaching and method of verifying knowledge:**

The course is carried out weekly, in the form of consultancy.



**SECURITY OF INFORMATION SYSTEMS****Course number: 13****Weekly hours: 2+0+2+0/ III****ECTS points: 5****General contents of the subject**

An information system, its place and significance in a business organisation. The significance of an information system for owners and users. The significance of the security of information systems; the term security, ensuring the efficiency of an information system, forms of securing an information system. The approach to designing and organising the security of information systems: Planning security of information systems, standards in designing security, analysis of risk, measures of security, security plan of an information system. Organisational, programmatic, technical and physical measures of security: methods of security, means of security. Securing data during processing and storage. Other aspects of protection. Security, basic concepts and aspects (reliability, integrity, authenticity, authorisation, accessibility). Review of security according to network layers. Training about security for all participants who use IT. Implementation of the security of an information system. Security and control components of an information system. Legal aspects of information system protection. Planning, organising and protection of an information system.

**The development of general and specific competences (knowledge and skills)**

The students are introduced to the concept and importance of the security and protection of an information system and methods of the prevention and detection of risks from attacks to the information system.

**Formats of teaching and method of verifying knowledge**

The course is carried out weekly, in the form of consultancy.

**SEA AND COASTAL ECOLOGY****Course number: 26****Weekly hours: 2+1+1+0/ III****ECTS points: 5****General contents of the subject**

Fundamental definitions and principles of ecology. Biological diversity and sustainability. Pollution of the sea, coastline and land. Modelling in ecosystems. Conservation of natural resources: air, sea and land. Management of the environment. Strategic assessment of the impact on the landscape. Urbanisation of the landscape. Technological development and the environment. Acceptable technologies.

**The development of general and specific competences (knowledge and skills)**

Familiarisation with the fundamental knowledge of ecology, and the conservation of natural resources of the sea and coast.

**Formats of teaching and method of verifying knowledge**

The course is carried out weekly, in the form of consultancy.

**PROTECTION AGAINST TERRORISM****Course number: 27****Weekly hours: 2+0+1+0/ III****ECTS points: 5****General contents of the subject**

New forms of threats and security. Unconventional forms of warfare. Terrorism, history and origin. Terrorism in the 20<sup>th</sup> century. Terrorism in the 20th century. Exponents of terrorism. Goals of terrorism. Forms and methods of terrorism. Means of terrorism. Targets of terrorism. Protection from terrorism. Exercises.

**The development of general and specific competences (knowledge and skills)**

Familiarisation with the fundamental precepts of global threats to the individual, society and the whole world and methods and ways of combating terrorism as such. Training for independent and effective handling in a system of personal, social and global security.

**Formats of teaching and method of verifying knowledge**

The course is carried out weekly, in the form of consultancy.

**SPECIALIST PROFESSIONAL INTERNSHIP**

**Course number: 28**

**Weekly hours: 0+0+0+(x)/ IV**

**ECTS points: 5**

**General contents of the subject**

**The development of general and specific competences (knowledge and skills)**

**Formats of teaching and method of verifying knowledge**

**List of literature needed for the course and taking of the exam**

**List of recommended additional literature**

**The point's value of the subject determined in accordance with the ECTS is as follows:**

**Method of taking exam**

Written and oral.

**Method of following the quality and success of the teaching**

**Preconditions for enrolment in the subject**

**SPECIALIST FINAL WORK****Course number: 29****Weekly hours: 0+0+(x)+0/ IV****ECTS points: 5****General contents of the subject****The development of general and specific competences (knowledge and skills)****Formats of teaching and method of verifying knowledge****List of literature needed for the course and taking of the exam****List of recommended additional literature****The point's value of the subject determined in accordance with the ECTS is as follows:****Method of taking exam**

Written and oral.

**Method of following the quality and success of the teaching****Preconditions for enrolment in the subject**