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Knowledge **FO**r Resilient so**CI**Ety

REPORT ON LLL COURSES BY VTSNS

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The main K-FORCE project objectives



Wider objective: To strengthen the area of DRM&FSE in WBC



Specific project objectives:

1. Modernization/development and implementation of DRM&FSE master study programmes/modules;
2. Development and implementation of DRM&FSE doctoral study programme;
3. **Continuous professional development in DRM&FSE sector through creation and implementation of certified lifelong learning courses for employees;**
4. Improved cooperation between project partners aiming to modernize teaching and training.





Continuous professional education and training – WP6

Lifelong learning courses are:

- ✓ Based on the newly developed master programme;
- ✓ Made of selected master courses (subjects) with accompanying credits and are certified;
- ✓ Offered to professionals who have completed the basic studies in the field of DRM&FSE;
- ✓ Delivered in blended way with necessary training materials provided.

— The number of course participants planned for the VTSNS is 70 in total.





WP 6.1 Report on WBC needs for LLL courses

The proposed contents and structure based on Sections 5 and 6 of the survey may be summarised as follows:

- theoretical and practical topics should be covered evenly (50% – 50 % of the content);
- 70% of the course contents should be new topics and 30 % of refresher topics;
- the attendance format should be 60% classroom and 40 % of online;
- the topics to be covered are (in the order of preference of respondents in %):
 - International standards in my field 69%
 - Fire safety engineering 61%
 - National design codes 60%
 - Risk assessment 55%
 - Data gathering and analysis 51%
 - Computer modelling 47%
- Increased theoretical knowledge and practical skills are very important;
- slightly less important is formal recognition and credits earned through the LLL scheme;
- the LLL courses should run in shorter blocks more often (e.g. a day every 2 months);
- there is significant interest to take part in the future LLL courses, even if it is a voluntary scheme;
- the participants predominantly expressed interest in taking part, only if the courses are free of charge, i.e. post-project funding will be necessary or the scheme should become mandatory for recertification purposes.





National certification scheme for LLL courses

- ✓ According to the draft Rules on short programme of higher education from September 2017, such short educational forms will be registered in the Ministry of Education, Science and Technological Development provided they have the minimum of 30 ECTS.
- ✓ The accreditation procedure is not required, but the Ministry, after considering the request of a HE institution, issues a permit to the institution to deliver the course with the corresponding certificate.
- ✓ The VTSNS will apply for the permit for delivering one of its three courses as soon as the procedure of enacting the Rules and bringing it into force is over. Meanwhile, the course will be delivered internally with 30 ECTS on the certificate.





Course types in VTSNS

Type 1

- ✓ industry-oriented four-day training courses
- ✓ two courses planned
- ✓ each based on one master course
- ✓ selected topics covered
- ✓ delivered at weekends on monthly basis
- ✓ realization in the third project year
- ✓ provided training materials
- ✓ certified without ECTS.

Type 2

- ✓ two-month LLL educational courses
- ✓ one course planned
- ✓ three complete master courses contained
- ✓ organized on weekdays
- ✓ realization in the second project year
- ✓ offered to the professionals in the field of protection
- ✓ seen as a step towards enrolling the master programme
- ✓ provided training materials
- ✓ certified with ECTS.





Three LLL courses in VTSNS

Course type 1

- ✓ **Evacuation modelling**
- ✓ **Fire and rescue PPE**

Course type 2

- ✓ **Risk resilience**





LLL course Evacuation modelling

Code	Master course title	Semester	Course type	Course status	Active teaching			Other classes	ECTS
					L	E	OTF		
SECOND YEAR									
M12	Calculation and model of evacuation	3	PA	Elective	4	3			10.0

Master course objective: Improvement of existing evacuation models

Master course topics covered by the LLL course: Software modelling of evacuation, and calculating methods

Percentage of the master course content in the LLL course: 2%

LLL course topics included: National design codes, Computer modelling, Engineering/advanced design approach, Risk assessment, Data gathering and analysis, Emergency response, Disaster preparedness, Case studies, National legislation

Main LLL course outcomes: Increased both theoretical and practical knowledge in software application, and capability of designing evacuation plans

LLL course title	Lectures per day	Weeks	Duration	ECTS	Based on master course
Evacuation modelling	4	4	16 hours	–	Calculation and model of evacuation



LLL course Evacuation modelling

Enrolment prerequisites: Basic professional studies, work experience, and theoretical background

Specific course requirements: Computer equipment, labs, literature

Ratio of theoretical vs. practice content: 5 (0 – entirely practical, 10 – entirely theoretical)

Attendance format: 5 (0 – electronic only, 10 – classroom only)

NQF/EQF level the course is associated with: None

A few multiple-death fires in the recent years in the city of Novi Sad have shown the problem of evacuation is crucial in such events. The course is tailored to cover different types of facilities (public, industrial, educational, sports, etc.) and to familiarize participants with software tools and issues related to evacuation. The participants are professionals in charge of occupational safety in companies or institutions they work for.



LLL course Evacuation modelling

Attendance recognition: Certificates on attendance and completion of the LLL courses will be issued.

Formal outcome of the LLL course: Certificate of attendance, Certification of passed exam, Count of hours attended





LLL course Fire and rescue PPE

Code	Master course title	Semester	Course type	Course status	Active teaching			Other classes	ECTS
					L	E	OTF		
FIRST YEAR									
M04	Personal protective equipment	2	SP	Obligatory	4	2			8.0

Master course objective: Introduction to PPE used in emergency situations

Master course topics covered by the LLL course: Equipment necessary in professional response in disasters

Percentage of the master course content in the LLL course: 2%

LLL course topics included: Risk assessment, Natural disasters, Man-made disasters (industrial, etc.), Emergency response, Disaster preparedness, International standards in the field, Case studies, Technical aspects, National legislation

Main LLL course outcomes: Increased theoretical knowledge in PPE

Course title	Lectures per day	Weeks	Duration	ECTS	Based on master course
Fire and rescue PPE	4	4	16 hours	–	Personal protective equipment



LLL course Fire and rescue PPE

Enrolment prerequisites: Work experience, and theoretical background

Specific course requirements: Computer equipment, and literature

Ratio of theoretical vs. practice content: 8 (0 – entirely practical, 10 – entirely theoretical)

Attendance format: 5 (0 – electronic only, 10 – classroom only)

NQF/EQF level the course is associated with: None

The training course is designed for professionals and volunteers dealing with firefighting and rescue. Serbian professional firefighters are engaged in industrial and chemical accidents and all other types of rescue, such as from snow, water, etc. Continuous informing on personal protective equipment issues is of great importance for their safe work and health protection.



LLL course Fire and rescue PPE

Attendance recognition: Certificates on attendance and completion of the LLL courses will be issued.

Formal outcome of the LLL course: Certificate of attendance, Certification of passed exam, Count of hours attended



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Risk resilience LLL course

Made of three master courses

No.	Code	Course title	Semester	Course type	Course status	Active teaching			Other classes	ECTS
						L	E	OTF		
FIRST YEAR										
1	M01	Risk management in protection	1	SP	Obligatory	4	3			10.0
2	M02	Applied risk modelling methods	1	AGE	Obligatory	4	3			10.0
3	M03	Monitoring and control in protection	1	SP	Obligatory	4	2	1		10.0
	Total					12+8+1				30

Most candidates are our alumni who have completed basic and/or specialist professional studies dealing with fire safety, civil protection and emergency rescue, environmental protection and occupational safety. The LLL course is seen as a step towards enrolling the master programme in the future by those who have completed it. For the candidates not intending to enrol the master studies, the LLL course provides advanced knowledge in the area of professional engagement.





Risk resilience LLL course content

Risk management in protection

Theoretical teaching

The course teaches the methods and procedures for identifying hazards, methods of hazard study, Hazop studies, risk assessment, risk matrix, risk ranking, practical risk assessment methods, and documented assessment, as well as legal bases for risk assessment; standards and their application (ISO 14001, OHSAS 18001).

Practical teaching

Exercises and seminar papers – practical risk assessment in occupational safety and health, environmental protection and fire protection using the discussed methods.

Applied risk modelling methods

Within the course, theoretical basics in mathematics in the field of probability, statistics and random variables are studied, which will help students use mathematical methods for presenting, processing and analyzing various data from the narrow expertise areas. Risk analysis and the role of modeling in the risk analysis process are also studied. Modeling and simulation of characteristic emergency situations are thought using current modeling and simulation software, with the aim of reducing risks with catastrophic consequences.

Practical teaching

Group and individual task preparation from the field of study. Setting up and solving specific tasks in the field of catastrophic events and fire using the programmes Pathfinder and PyroSim.

Theoretical teaching

The place, role and significance of monitoring in the field of protection are studied; Organization of monitoring systems at international, state and local level; Environmental monitoring and environmental monitoring system; Monitoring of phenomena and hazards that can have the characteristics of emergencies: hydrological monitoring (monitoring of water levels and flood forecasts), meteorological monitoring, seismological monitoring, epidemiological monitoring, and monitoring of radiation and chemical contamination.

Practical teaching

Development of theoretical areas on concrete examples through seminar papers. Measurement of individual characteristic parameters of environmental pollution (field work and in the laboratory).

Risk management in protection



Risk resilience LLL course

Master course topics covered by the LLL course: All topics planned for the three constituent master courses

Percentage of the master course content in the LLL course: 40-100% depending on the structure of the group, for there are two types of potential participants, those with completed basic professional studies and those with specialist professional studies

LLL course topics included: Computer modelling, Risk assessment, Data gathering and analysis, Natural disasters, Man-made disasters (industrial, etc.), Emergency response, Disaster preparedness, Case studies

Main LLL course outcomes: Increased theoretical knowledge in risk resilience, gained understanding of risk and protection in disasters, participants are capable of working with companies in the field of protection engineering as professionals



Risk resilience LLL course content

Enrolment prerequisites: Basic professional studies

Specific course requirements: computer equipment, software, literature

Ratio of theoretical vs. practice content: 6 (0 – entirely practical, 10 – entirely theoretical)

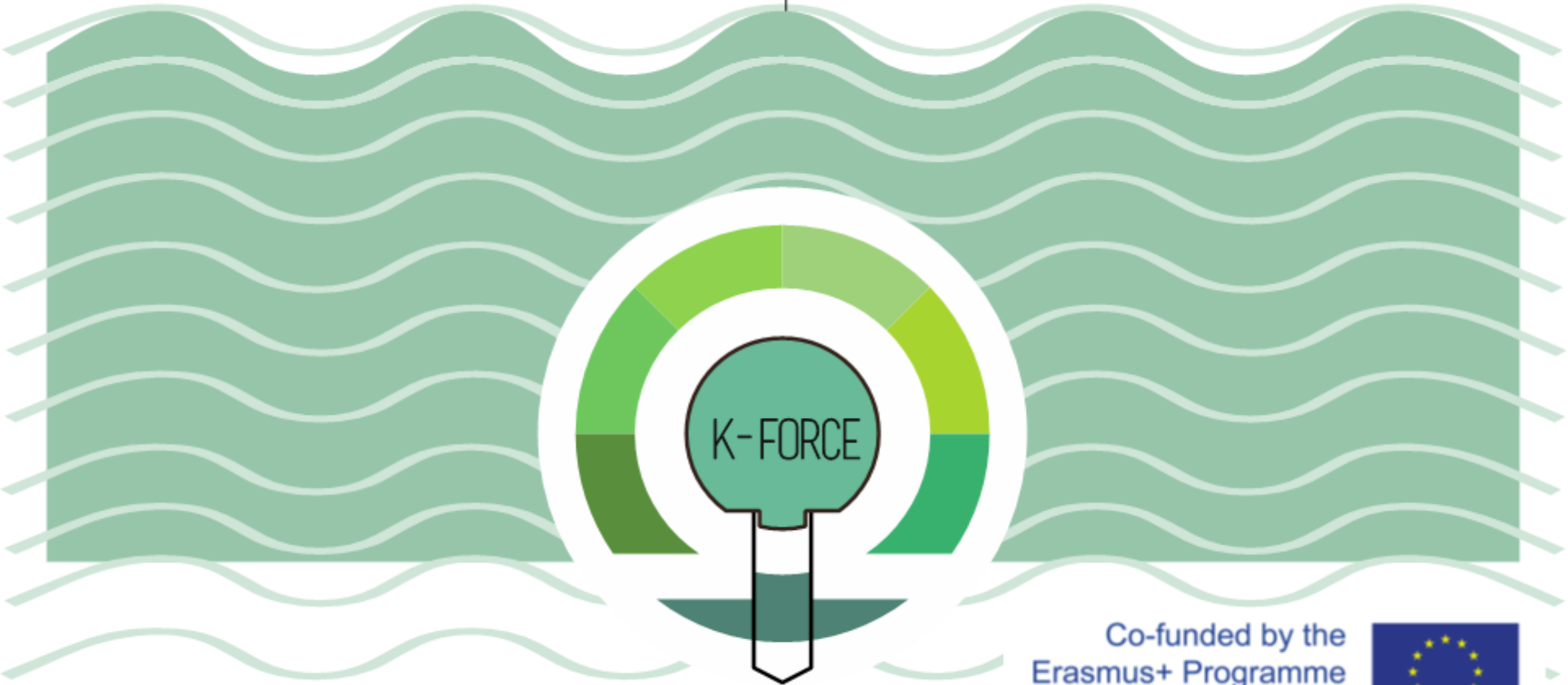
Attendance format: 8 (0 – electronic only, 10 – classroom only)

NQF/EQF level the course is associated with: None

Attendance recognition: Certificates on attendance and completion of the LLL courses will be issued.

Formal outcome of the LLL course: Certificate of attendance, Certification of passed exam, Count of hours attended, ECTS credits accountable towards higher education





Thank you
for your attention

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