



*Date: 29 January 2018*

*Place: Ziline, Slovakia*

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

## Report on defined LLL outcomes

*University of Zilina*



Co-funded by the  
Erasmus+ Programme  
of the European Union



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**The following WBC HEIs will deliver LLL courses under the K-Force project:**

University of Novi Sad

Higher Education Technical School of Professional Studies in Novi Sad

University of Tuzla

University of Banja Luka

University of Tirana

Epoka University



- **Title of LLL course:**

Natural disasters and other accidents risk assessment

Evacuation calculation and modeling

Financial resilience to hazards

- **Linked master programme course topics to be covered**

Disaster risk assessment methodology, according to Serbian Law on Emergencies. Natural disaster and natural catastrophe (earthquakes, floods, landslides). Technical-technological accidents and wild fires. Preventive measures.

Basic concepts and definitions of evacuation, Evacuation decision making and human behaviour in fire, Egress strategies, Evacuation stages, Evacuation corridors, Evacuation walking speeds, Calculation of evacuation, Computer modeling of evacuation, Evacuation drills, Evacuation plans and procedures, Occupancy calculation.

Economic framework, Defining financial resilience to hazards, Financial resilience in the disaster management cycle , Risk assessment , Catastrophic risk modeling for financial solutions, Financial protection: diagnosis, strategy and action plans, Analytical tools for financial decision-making, Disaster risk financing, Financial mechanisms and tools (domestic and international), The importance of disaster risk financing in disaster risk management., EU Civil Protection Mechanism Directive

- **Linked master programme year of study**

First year, winter semester	First year, Summer semester	4 ECTS
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- **List any prerequisites for the LLL course enrolment / attendance:**

diploma: BSc in Engineering, Technology, Security	Diploma: BSc in Architecture, Engineering, Technology, Security	Diploma: BSc in Economics, Engineering, Technology, Security
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- **Main outcomes of the LLL course**

Increased theoretical knowledge in disaster risk management Capable to identify and classify and assess risks according to Serbian Law Capable to assess vulnerability of people and environment Capable to design preventive and mitigation measures engineering as a professional.	Increased theoretical knowledge in evacuation decision making and human behaviour in fire Gained understanding of evacuation strategies Capable to calculate and use simulation software for evacuation plans	Increased theoretical knowledge in risk economics and financing Gained understanding in financial preparedness Capable of calculation of potential financial losses
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- **What will be the formal outcome of the LLL course (tick all that apply):**

Certificate of attendance, Count of hours attended	Certificate of attendance, Count of hours attended	Certificate of attendance, Count of hours attended
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# Higher Education Technical School of Professional Studies in Novi Sad

- **Title of LLL course**

Risk resilience	Evacuation modelling	Fire and rescue PPE
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- **Linked master programme course topics to be covered**

All topics planned in the curriculum will be covered.	Software modelling of evacuation, and calculating methods.	Equipment necessary in professional response in disasters.
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- **Linked master programme year of study**

First year	Second year	First year
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## Higher Education Technical School of Professional Studies in Novi Sad

- **List any prerequisites for the LLL course enrolment / attendance:**

BSc	BSc, years of experience, and theoretical background.	Years of experience, and theoretical background
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- **Main outcomes of the LLL course**

Increased theoretical knowledge in disaster risk management Capable to identify and classify and assess risks according to Serbian Law Capable to assess vulnerability of people and environment Capable to design preventive and mitigation measures engineering as a professional.	Increased theoretical knowledge in evacuation decision making and human behaviour in fire Gained understanding of evacuation strategies Capable to calculate and use simulation software for evacuation plans	Increased theoretical knowledge in risk economics and financing Gained understanding in financial preparedness Capable of calculation of potential financial losses
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## Higher Education Technical School of Professional Studies in Novi Sad

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- **What will be the formal outcome of the LLL course (tick all that apply):**

Certificate of attendance, Count of hours attended	Certificate of attendance, Count of hours attended	Certificate of attendance, Count of hours attended





- **Title of LLL course**

Constructive Rules for Fire safety of Building

Earthquake resistant design

- **Linked master programme course topics to be covered**

Common fires. Fire sectors. Fire resistance of construction structures. Classification and typology of buildings from the aspect of fire safety. Current legislation in the field of fire protection. Fire resistance of building materials and constructions. Regulation on Construction Products 305/2011/EC. Testing methods for the building materials fire resistance according to European standards.

Fire protection preventive construction measures. Evacuation from areas affected by fire. Fire protection systems in buildings.

Introduction to Earthquake Engineering. Earthquakes: phenomenon hypocenter and epicenter, events on the Earth's surface. Earthquake intensity scale.

Principles of seismic analysis. Basic principles of design and construction of buildings in seismically active areas. The choice of the structural system. Principles of design of building structures to the effects of the earthquake. Chapter overview of current seismic regulations.

- **Linked master programme year of study**

1st

1st

- **List any prerequisites for the LLL course enrolment / attendance:**

240ECTS and more

240 ECTS and more

- **Main outcomes of the LLL course**

Candidates master the basic concepts of fire, its origin and consequences. In particular, the candidates master the necessary knowledge of construction measures of fire protection and their application.

Identification and analysis of problems in seismic structural analysis. Problem solving in seismic structural analysis.



## University Banja Luka

- **What will be the formal outcome of the LLL course (tick all that apply):**

**Certificate of attendance, Certification of  
passed exam**

**Certificate of attendance, Certification  
of passed exam**



- **Title of LLL course**

Disaster Risk Modeling	Risk Assessment	not applicable (N/A)
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- **Linked master programme course topics to be covered**

Approaches to Risk Assessment and Quantification; The Process of Modeling; Full Integrated Risk Modelling: Decision-Support Benefits; Simulation in Practice; Using Excel/VBA for Simulation Modelling;	Risk: principles and applications, and the dynamic risk assessment process; Risk analysis; Risk evaluation and risk treatment; Different ways of evaluating risk;	(N/A)
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- **Linked master programme year of study**

Second year of master studies	First year of Master Studies	(N/A)
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- **Main outcomes of the LLL course**

Gained understanding of basics of finite volume modelling, Introduce in CFD tools, increase of theoretical knowledge with possible application in modelling	Computer modelling, Risk assessment, Data gathering and analysis, Natural disasters, Economic risk and vulnerability	(N/A)
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- **What will be the formal outcome of the LLL course (tick all that apply):**

Certificate of attendance, Count of hours attended	Certificate of attendance, Count of hours attended	
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- **Linked master programme year of study**

spring semester, 2018-2019  
academic year year

winter semester, 2018-2019  
academic year year

spring semester, 2018-2019  
academic year year

- **Main outcomes of the LLL course**

To be able to describe the scientific foundation for risk management, 'To be able to describe different perspectives of the concept of risk and be aware of the implications of adopting the different perspectives in a risk management context. To be able to describe methods for risk analysis, evaluation and management, their areas of applicability, especially in the area of safety, health, environment and society. To be able to describe different ways of presenting risk, their limitations and strengths and how they can be applied to evaluate risks. To be able to describe different types of uncertainty and how they can be addressed and handled in a risk analysis and evaluation context.

To adopt the Principles of Construction o learn the Principles of fire safety, To understand the Behavior of materials under the effect of fire , To develop studies, projects related to the improvement of fire safe structures

Review trends in human behavior and factors which affect the behavior of people in fire situations.. To create interest in fire safety risk management. To present the range of available preparedness and mitigation measures, consider their appropriateness, opportunities, limitations of implementation in the regional context



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**Epoka University**

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- **What will be the formal outcome of the LLL course (tick all that apply):**

<b>Certificate of attendance, Count of hours attended</b>	<b>Certificate of attendance, Count of hours attended</b>	<b>Certificate of attendance, Count of hours attended</b>
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- **Title of LLL course**

Computer Explosion  
Modeling for Improvement  
preventive protection

Floods and Soil Contamination

Assessment of damaged civil  
engineering structures

- **Linked master programme course annotation and objectives**

Introduction in finite volume modelling,  
tools and basics of modelling, CFD  
simulations

Basics of  
geotechnic  
s, foods as  
natural  
disasters,  
floods  
contamina  
nts

Introduction to  
up-to-date  
methods for  
assessment of  
damaged civil  
engineering  
structures



- **Linked master programme year of study**

2

1; 2

1

## Main outcomes of the LLL course

Gained understanding of basics of finite volume modelling, Introduce in CFD tools, increase of theoretical knowledge with possible application in modelling

Increased theoretical knowledge in floods risk, risk of soil contaminations from heavy metals after the flood

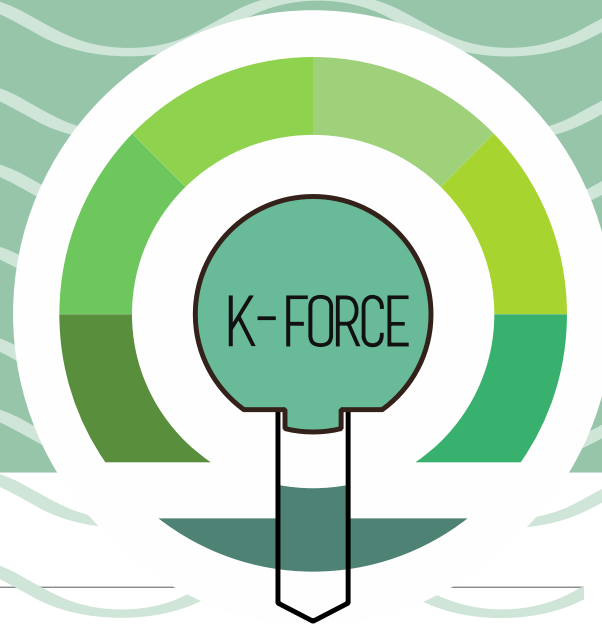
Increased theoretical knowledge in assessment of damages on civil engineering structures, Capable of measuring of damages in construction elements

- **What will be the formal outcome of the LLL course (tick all that apply):**

Certificate of attendance

Certificate of attendance

Certificate of attendance



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Thank you  
for your attention

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**Knowledge FOR Resilient soCiEty**