



Date: 10-09-2019

Place: Tirana

Knowledge **FOR** Resilient soCiEty

B-LEARNING MATERIAL Preparation and Evaluation

University of Novi Sad
Ss. Cyril and Methodius University in Skopje



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



The European Commission support for the production of this publication does not constitute an endorsement of the contents which reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.



WP 3

Improve teaching methodologies and embed the ICT in learning material

Activity 3.4 Develop b-learning materials for MPs and PhD

Description of activity:

The main objective of this WP is development of teaching and learning materials for DRM&FSE Master and PhD programs.

Learning materials will be jointly developed and produces by PA partners with active steering and peer review by PR partners.

Materials will be published in EN/SR/AL/B&H languages in electronic form PDF and available for student in K-FORCE online library as newly developed OER (Open Educational Resource) and on flexible ICT learning platform.

Thematic of the textbooks will be according to interdisciplinary nature of the DRM&FSE field and partners will decide its content in training and consultations.



WP 3

Improve teaching methodologies and embed the ICT in learning material

Activity 3.4 Develop b-learning materials for MPs and PhD

INDICATORS OF PROGRESS:

- At least **1 script** and **10 presentations/webinars** per developed/modernised subject
- At least **1 lecture/tutorial** per subject held by professionals - **practical case studies**
- **6 textbooks** by PA published



WP4

Implementation of Master Programmes

Activity 4.4 Selected MP lectures held by K-FORCE guest lecturers

Description of activity:

Organised WEBINARs and Live Lectures to students.

Newly created course material will be distributed to students.

Webinars are Improving teaching process as using contemporary teaching methods in cost effective and efficient way.

Local press will report about use of new ITC based laboratories in education purposes and about possibilities of WEBINARs in controlled environment.



WP5

Implementation of PhD Programme

Activity 5.3 Selected PhD lectures held by K-FORCE guest lecturers

Description of activity:

Organised WEBINARs and Live Lectures.

Newly created course material will be distributed to students.

Webinars insure the improvement of teaching process by using contemporary teaching methods in cost effective and efficient way.

Local press will report about use of new ITC based laboratories in education purposes and about possibilities of WEBINARs in controlled environment.

Lecturers from P2-P6, P9 and P11 in 3rd project year will hold lectures on P1 PhD programme.



WP4

Implementation of Master Programmes

*Activity 4.4 Selected MP lectures held by K-FORCE guest lecturers
and*

WP5

Implementation of PhD Programme

Activity 5.3 Selected PhD lectures held by K-FORCE guest lecturers

INDICATORS OF PROGRESS:

- **60 authorized guest lectures** and presentations held
- **5 case studies** for tutorials and project work issued (professionals)





WP6

Implementation of LLL courses

Activity 6.3 Create K-FORCE Glossary

Description of activity:

K-FORCE Glossary of key words and terms is a result of several work packages. Glossary represents the selection of key words and the terms characteristic for the DRM&FSE area.

This glossary will provide definitions of at least 100 terms used in the field of DRM&FSE. The definitions will be developed by project team members in aim to establish a common agreement on the translation of professional and technical names and terms.



WP6

Implementation of LLL courses

Activity 6.3 Create K-FORCE Glossary

INDICATORS OF PROGRESS:

- K-FORCE Glossary published in pdf and printed in 200 copies



WP6

Implementation of LLL courses

Activity 6.4 Adapt selected learning material for LLL courses

Description of activity:

Learning material developed within WP3 will be adapted and used for LLL purposes.

WBC HEIs involved in project will choose 3 courses from Master studies with complete learning material to deliver to at least 400 professionals in blended way. Material selection will be done according to WBC needs for LLL courses defined in 6.1.



K-FORCE support the creation and dissemination of Open Educational Resources in diverse European languages: study programs will be available in WBC HEIs in EN and regional languages as well as the blended learning material offered by *Flexible ICT learning platform, Glossary of DRM&FSE key words and terms and On-line Library.*



E-LIBRARY

Conference-Journal Paper

Student projects

Curricula

Lectures (SMS)

Workshops and Case studies

LLL Courses

LEARNING PLATFORM



canvas

- + K-FORCE SYMPOSIA PROCEEDINGS
- + TEXTBOOKS
- + GLOSSARY





E-LIBRARY

CONFERENCE-JOURNAL PAPER



English



Serbian/Bosnian


No
Title
Authors

1

Knowledge (education) as an important factor in decreasing population vulnerability (experiences from UNS-FTS)

M. Jevtić, T. Novaković, M. Laban, T. Tamaš



2

Insurance and disaster risk management: reducing vulnerability and risk

T. Novaković, M. Jevtić, J. Bondžić, Lj. Popović, Đ. Ćosić, S. Popov, M. Laban, V. Radonjanin


No
Title
Authors

1

Osiguranje kao finansijski instrument održivog razvoja

T. Novaković, M. Jevtić, T. Tamaš, Đ. Ćosić, Lj. Popović, M. Laban









No
Title
Authors
1
Učinak inertizacije na plinski sastav nakon eksplozije ugljene prašine
J. Marković, S. Mićević



No

Title

Authors

1	Sustainable management of natural hazards in the region of South-East Asia and South Asia	<i>M. H. Faber, A. Kos, B. Becker, M. Kaufmann, P. Stamp, K. Seeland, A. Grün</i>  119
2	Risk and Safety in Civil Engineering, Lecture Notes	<i>Prof. Dr. M. H. Faber</i>  198
3	A framework and guidelines for volcanic risk assessment	<i>H. Narasimhan, F. Cacace, G. Zuccaro, M.H. Faber, D. De Gregorio, B. Faggiano, A. Formisano, F.M. Mazzola, M. Indirli</i>  114
4	On the Application of Bayesian Probabilistic Networks for Earthquake Risk Management	<i>Y. Y. Bayraktarli, J. P. Ulfkjaer, U. Yazgan, M.H. Faber</i>  84
5	Assessing and Managing Risks due to Natural Hazards	<i>M. H. Faber</i>  83

No
Title
Authors

1

The Process of Verification and Validation of Building Fire
Evacuation Models
NIST Technical Note 1822

*E. Ronchi, E. Kuligowski, P.
Reneke, R. Peacock, D.
Nilsson*

 139

2

Ascending evacuation in long stairways: Physical exertion,
walking speed and behaviour
Final report of the Swedish research project

*E. Ronchi, J. Norén, M. Delin,
K. Kuklane, A. Halder, S.
Arias, K. Fridolf*

 84









3

Assessment of Total Evacuation Systems for Tall Buildings
Final Report

E. Ronchi, D. Nilsson





 164



No	Title	Authors
1	Complex Model for Risk Assessment of Industrial Processes	<i>K. Holla</i>  95
2	Testing of Fire Retardants	<i>A. Fanfarová, L. Makovická Osvaldová, S. Gašperco</i>  105
3	Portal of security and safety engineering as a tool to increase the sustainable development of higher education in security in the European Union and beyond	<i>T. Lovecek, J. Ristvej, K. Kampova, J. Vaculík, R. Gamboa, A. Zagorecki</i>  91
4	Explosive compounds and their implication in accidents and terrorist attacks	<i>M. Vandlíčková, L. Figuli, Z. Zvaková, S. Picot</i>  115
5	Fire –technical characteristics of chosen combustible food dusts	<i>M. Vandlickova</i>  100
6	Occupational Safety and Health During Rescue Activities	<i>L. Makovicka Osvaldova, M. Petho</i>  105
7	Results of survey among SEVESO establishments in the Slovak Republic	<i>K. Holla, J. Ristvej, V. Moricova, L. Novak</i>  226
8	Smoke and heat emissions from boundaries of fire compartments and the impact of installation methods	<i>M. Smolkaa, V. Mozer, A. Osvald</i>  126



No	Title	Authors
----	-------	---------

1	Fire safety of energy efficient buildings	<i>M. Cvetkovska</i>  59
2	Fire resistance prognostic model for reinforced concrete columns	<i>M. Lazarevska, M. Knežević, M. Cvetkovska, N. Ivanišević, T. Samardzioska, A. Trombeva-Gavriloska</i>  57
3	Post earthquake fire resistance of rc frame	<i>M. Cvetkovska, R. Pejovic, A. Trombeva Gavriloska, M. Lazarevska, B. Stevanovic</i>  44
4	Instructions for earthquake preparedness	<i>M. Garevski</i>  73



CONFERENCE-JOURNAL PAPER

Project partner	UNS	VTSNS	UNTZ	UBL	UT	EPOKA	DTU	AAL	LU	UNIZA	UKIM
Number of publications	3	0	1	0	0	0	0	5	3	8	4

Minimum 2 papers per project year –excluding papers published at KFORCE Symposia.



LECTURES (SMS)

2017/2018 School year



Open lectures at UNS, Novi Sad, Serbia

2018/2019 School year



Open lectures at UNS, Novi Sad, Serbia



Open lectures at VTSNS, Novi Sad, Serbia



Open lectures at UNTZ, Tuzla, Bosnia & Herzegovina



Open lectures at UBL, Banja Luka, Bosnia & Herzegovina



Open lectures at UT, Tirana, Albania



Open lectures at EPOKA, Tirana, Albania

Output 4.4
Lectures held by guest lecturers



**INDICATOR OF
PROGRESS:**

60 authorized guest lectures
and presentations held


2017/2018 school year

No	Title	Lecturer
Lecture 1	Risk assessment and treatment in accidents prevention	<i>K. Hollá, UNIZA</i>
Lecture 2	Enterprise risk management for business resilience	<i>K. Bugarová, UNIZA</i>
Lecture 3	Multi-hazard risk assessment and decision making	<i>J. Keçi, EPOKA</i>
Lecture 4	Financial resilience to hazards and climate finance: a comprehensive approach of tools and methods for disaster risk finance	<i>E. Luçi, UT</i>
Lecture 5	Risk communication. Risk perception	<i>E. Nukic, UNTZ</i>
Lecture 6	Methods supporting fire risk assesment and management	<i>F. Markert, DTU</i>
Lecture 7	Fire signatures and their use to detect fires	<i>B. Husted, LU</i>
Lecture 8	An introduction to human behaviour in fire and evacuation modelling	<i>E. Ronchi, LU</i>
Lecture 9	Application of service oriented geographic information system in risk analysis	<i>G.Jakovljević, UBL</i>
Lecture 10	Basics of decision analysis in disaster risk management	<i>M. Havbro Faber, AAL</i>
Lecture 11	Earthquake geotechnical risks. What we know, what we should know, lessons learned	<i>V.Šešov, UKIM</i>



2018/2019 school year

No	Title	Lecturer
Lecture 1	Performance-based fire safety engineering	<i>L. Schiøtt Sørensen, DTU</i>
Lecture 2	Disasters, Poverty and Development: A comprehensive view from individual level to society	<i>E. Pojani, UT</i>
Lecture 3	The importance of Concrete Durability in RC Structures	<i>E. Luga, EPOKA</i>
Lecture 4	Fire safety engineering-From theory to practice	<i>M. Cvetkovska, UKIM</i>
Lecture 5	Spatial planning in function of flood protection – methodological approaches for Balkan countries	<i>B. Milojević, UBL</i>
Lecture 6	Landslide Hazard and Risk Assessment	<i>K. Mandžić, UNTZ</i>

**2018/2019 school year**

No	Title	Lecturer
Lecture 1	Contribution of insurance and CAT bonds to disaster risk management	<i>P. Grabova, UT</i>
Lecture 2	Panic and mass behaviour under fire cases	<i>A. Hasa, EPOKA</i>
Lecture 3	Risk understanding and standardization as a factor of disaster risk management	<i>E. DeliĆ, UNTZ</i>
Lecture 4	Contemporary methods for reconstruction of concrete structures	<i>A. Trombeva Gavriloska, UKIM</i>
Lecture 5	An introduction to human behaviour in fire and evacuation	<i>E. Ronchi, LU</i>
Lecture 6	Properties of concrete under fire conditions	<i>G. Broćeta, UBL</i>
Lecture 7	Fire safety in timber buildings	<i>M. Cvetkovska, UKIM</i>

**2018/2019 school year**

No	Title	Lecturer
Lecture 1	Natural Hazards Risk Management	<i>M. Havbro Faber, AAL</i>
Lecture 2	Industrial Accidents prevention	<i>K. Hollá, UNIZA</i>
Lecture 3	Fire damages of reinforced concrete structures and repair possibilities	<i>V. Radonjanin, UNS</i>
Lecture 4	Stakeholders in disaster risk management and decision making	<i>D. Koci, UT</i>
Lecture 5	Structural assessment of historical constructions and selected retrofitting techniques	<i>E. Mustafaraj, EPOKA</i>
Lecture 6	Risk management of investment projects	<i>M. Lazarevska, UKIM</i>
Lecture 7	Methods supporting fire risk assessment and management	<i>F. Markert, DTU</i>

**UBL****LECTURES (SMS)****Open lectures at UBL, Banja Luka, B&H****2018/2019 school year**

No	Title	Lecturer
Lecture 1	Community based climate change adaptation and disaster risk reduction	<i>L. Phu Doma, LU</i>
Lecture 2	Risk analysis and management in tunnelling	<i>Z. Zafirovski, UKIM</i>
Lecture 3	Insurance and reinsurance in risk disaster management	<i>G. Sharku, UT</i>
Lecture 4	Maintenance as an important activity in fire protection	<i>B. Savic, VTSNS</i>
Lecture 5	Management of risks due to natural hazards	<i>M. Havbro Faber, AAL</i>
Lecture 6	Risk-informed performance-based fire safety design	<i>V. Mozer, UNIZA</i>
Lecture 7	Fire damages of reinforced concrete structures and repair possibilities	<i>M. Malešev, UNS</i>
Lecture 8	Influence of design parameter in fire safety of structural steel beams	<i>E. Hoxha, EPOKA</i>

UT

LECTURES (SMS)



Open lectures at UT, Tirana, Albania

2018/2019 school year

No	Title	Lecturer
Lecture 1	Risk Management of Investment Projects	<i>M. Lazarevska, UKIM</i>
Lecture 2	General Risk Theory	<i>R. Šišić, UNTZ</i>
Lecture 3	Application of service oriented GIS system in risk analysis	<i>G. Jakovljevic, UBL</i>
Lecture 4	Framework for Risk Assessment using Scenarios	<i>H. Hassel, LU</i>
Lecture 5	Critical Infrastructure Protection against Disasters in European Legislation	<i>M. Magdolen, UNIZA</i>
Lecture 6	Preventive Measures in Function of Fire Insurance Cost	<i>Lj. Popovic, UNS</i>
Lecture 7	Resilience in the context of insurance	<i>M. Havbro Faber, AAL</i>



**2018/2019 school year**

No	Title	Lecturer
Lecture 1	Fire safety engineering-From theory to practice	<i>M. Cvetkovska, UKIM</i>
Lecture 2	Fire safety in buildings	<i>M. Laban, UNS</i>
Lecture 3	Vulnerability assessment of physical protection systems	<i>T. Lovešek, UNIZA</i>
Lecture 4	System identification of bridges using ambient vibration measurements and numerical simulations	<i>D. Zenunovic, UNTZ</i>
Lecture 5	Risk assessment in public spaces	<i>J. G. Rangel- Ramirez, AAL</i>
Lecture 6	Fire investigation	<i>S. Spaić, VTSNS</i>
Lecture 7	Urban and architectural measurements for the protection of the fire / Case study- Banja Luka	<i>M. Čvoro, UBL</i>
Lecture 8	Performance-based fire-safety engineering	<i>L. Schjøtt Sørensen, DTU</i>



LECTURES (SMS)















Host institution	UNS	VTSNS	UNTZ	UBL	UT	EPOKA	TOTAL
Number of lectures held	17	7	7	8+2	7	8	56



INDICATOR OF PROGRESS: 60 authorized guest lectures and presentations held

+ additional mobilities (guest lectures) for implementation of PhD studies
(3 unused mobilities for AAL)



 31	Fire safety engineering LUND
 37	Building Fire Safety Protection in Slovakia
 32	Fire Safety Of Facades NUZOP
 30	Protection and Rescue Directorate of RM
 26	6 stages of RESCUE PRDRM
 27	Types of structural collapse PRDRM
 29	Disaster Risk Management of Cultural Heritage UKiM – IZIIS
 40	Disaster Risk Management of Cultural Heritage UTZ
 35	Disaster Risk Management of Cultural Heritage UBL
 23	Critical Infrastructure Destruction - Bridges over Danube 1999 UNS
 42	Earthquake Testing UKiM – IZIIS
 30	Rescue from the water PRDRM
 32	EYP Workshop materials
 38	Workshop - Student Centered Learning



E-LIBRARY

LLL COURSES



UNS



VTSNS



UNTZ



UBL



UT



EPOKA



The logo features a large, light gray stylized letter 'Q' on the left. Inside the 'Q' is the text 'UNS' in a bold, red, sans-serif font. To the right of the 'Q' is a gray arrow pointing to the right, containing the text 'E-LIBRARY' in a bold, black, sans-serif font.

UNS

E-LIBRARY

LLL COURSES



Overview



Search



Up

Category: UNS



Natural disasters and other accidents risk assessment



Evacuation calculation and modeling



Financial resilience to hazards



VTSNS

E-LIBRARY

LLL COURSES

[Overview](#)[Search](#)[Up](#)

Category: VTSNS



[Risk resilience](#)



[Evacuation modelling](#)



[Fire and rescue personal protective equipment](#)





UNTZ

E-LIBRARY

LLL COURSES



Overview



Search



Up

Category: UNTZ



Computer Explosion Modeling for Improvement preventive protection



Floods and Soil Contamination



Assessment of damaged civil engineering structures





UBL

E-LIBRARY

LLL COURSES



Overview



Search



Up

Category: UBL



Constructive Rules for Fire safety of Building



Earthquake resistant design



The logo features a large, light gray stylized letter 'C' on the left. Inside the 'C' is the text 'UT' in a bold, red, italicized sans-serif font. To the right of the 'C' is a horizontal bar with a sawtooth or gear-like edge on its left side. Inside this bar, the text 'E-LIBRARY' is written in a bold, black, italicized sans-serif font.

UT

E-LIBRARY

LLL COURSES



Overview



Search



Up

Category: UT



Disaster Risk Modeling



Risk Assessment

EPOKA

E-LIBRARY

LLL COURSES

[Overview](#)[Search](#)[Up](#)

Category: EPOKA

[Disaster Risk Management](#)[Fire Engineering](#)[Fire Evaluation Modelling](#)



LLL courses

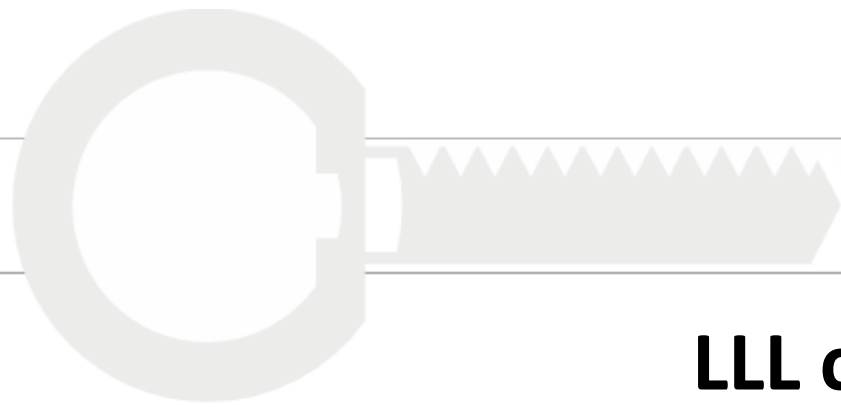
TASK:

FINAL REPORT TO BE PREPARED BY VTSNS AND UNIZA AND PUBLISHED ON WEBSITE.

PROOF TO BE PREPARED:

- News on schedule, programme and call for apply (published on HEI's website and project website)
- News on completed course, accompanied with
 1. Course curriculum
 2. Attendance list
 3. Presentations – all
 4. Pictures
 5. Literature
 6. Certificate template

BLENDED WAY- USE ICT PLATFORM AND WEBINARS RECORDED (GUEST LECTURES).



LLL courses

INDICATORS OF PROGRESS:

- **18 LLL courses delivered**
- **400 trained professionals**
- **500 professionals accessing the ICT platform**

Number of courses?

Number of trained professionals?

Number of professionals accessing the ICT platform?



LLL courses

WHAT HAVE WE DONE SO FAR:

	COURSE	Course curriculum	Announcement	Attendance lists	Presentations	Literature	Certificate	Pictures	News for website
VTSNS	Risk resilience		✓						
	Evacuation modelling	✓	✓	✓	✓			✓	
	Fire and rescue PPE	✓	✓		✓			✓	
UNTZ	Computer Explosion Modeling for Improvement preventive protection								
	Floods and Soil Contamination						✓		
	Dangerous substances						✓		
UBL	Building measures for fire protection		✓		✓		✓		
	Earthquake resistant design		✓		✓		✓		
UT	Disaster Risk Modeling		✓	✓	✓		✓	✓	✓
	Risk Assessment		✓	✓	✓		✓	✓	
EPOKA	Disaster Risk Management		✓						
	Fire Engineering		✓						
	Fire Evacuation Modelling		✓						



LEARNING PLATFORM



canvas

LEARNING PLATFORM



[Need a Canvas Account?](#)
[Click Here, It's Free!](#)
[Browse courses](#)

Email

Password

☐ Stay signed in

[Forgot Password?](#)

Log In



[Help](#) [Privacy policy](#) [Acceptable Use Policy](#) [Facebook](#) [Twitter](#)

 INSTRUCTURE



CANVAS
FREE FOR TEACHER



Account



Dashboard



Courses



Calendar



Inbox



Commons



Help

Dashboard



Evacuation Calculation and Model...
Proračun i modelovanje evaku...



LEARNING PLATFORM



CANVAS
FREE FOR TEACHER



Account



Dashboard



Courses



Calendar



Inbox



Commons



Help

Home

Announcements

Assignments

Discussions

Grades

People

Pages

Files

Syllabus

Outcomes

Quizzes

Modules

Conferences

Collaborations

Attendance

Settings



Proračun i modelovanje evakuacije > Files

Search for files



0 items selected

▼ Evacuation Calculation and Modeling

▶ course_image

▶ Predavanja

▶ Vežbe

Name ▲



course_image



PiME_Zadatak za predmetni projekat.pdf



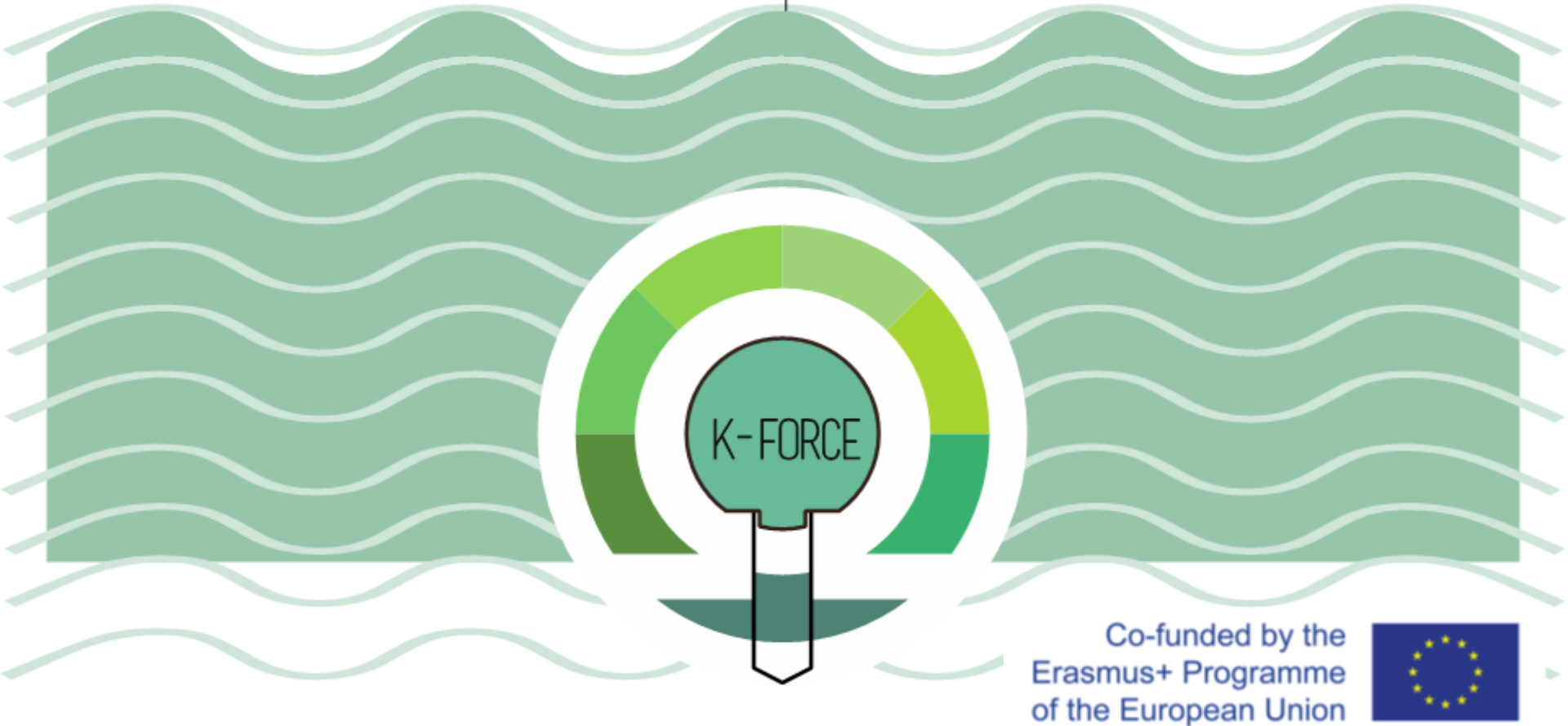
Predavanja



Vežbe



20% of 262.1 MB used



Thank you for your attention

Knowledge FOR Resilient soCiEty