Title of BIP: UNITA Nature: Natural Hazard Common Days

General information

Objectives and Description:

This program aims to provide students a strong foundation in assessment, quantification and spatial mapping of natural hazards and its role in disaster risk management.

Methods and outcomes:

The BIP will consist of a total 150 working hours for students:72 hours physical and virtual activity, 78 individual study.

Methods: Exposure, discussion, conversation, definition, lecture, example, individual and teamwork.

Outcomes

- knowledge and in-depth understanding of the concepts of hazard, vulnerability, risk and the methods of integrated risk analysis and management;

- the ability to carry out bibliographic studies, consult and critically use scientific databases and other sources of information;

- critical awareness of economic, organizational and management aspects (such as project management, risk and change management).

- communicate effectively, in written form, ideas and arguments regarding risk and natural hazards;

Field of Education: Civil engineering

0732 Building and civil engineering

0788 Engineering, manufacturing and construction, inter-disciplinary programmes

Target audience / Participants profile:

The "Natural Hazard Common Days" virtual component is designed for undergraduate, master and Ph.D students who have an interest in the study and management of natural hazards. The target audience includes individuals from diverse academic backgrounds such as:

- Civil and Environmental Engineering, focusing on infrastructure resilience, risk assessment, and hazard mitigation strategies.
- Disaster Management, emergency preparedness, aiming to enhance their understanding of the complexities of natural hazard mitigation and response.
- Environmental Science, ecology, or conservation biology with an interest in understanding the interactions between natural hazards and ecosystems.
- Policy and Planning, urban planning, or public administration, with a focus on integrating natural hazard considerations into governance frameworks and decision-making processes

No of ECTS issued: 6 ECTS

Language of instruction and requirements: English (minimum level B2)

Dates for physical activity: 24- 28 June 2024

Location of physical activity: Brasov, Romania, Transilvania University of Brasov, Faculty of Civil engineering

Dates for virtual component: 01.07 – 12.07.2024

Virtual Component Description:

Interactive Lectures: Engaging multimedia presentations covering key concepts, case studies, and expert insights into natural hazards.

Simulation Exercises: Realistic scenarios simulating natural hazard events, allowing students to make decisions, assess risks, and implement mitigation strategies.

Discussion Forums: Online platforms for collaborative discussions, debate, and knowledge sharing on topics related to natural hazards.

Guest Speaker Sessions: Live or recorded sessions featuring experts from academia, government agencies, and non-profit organizations sharing their experiences and expertise in natural hazard management.

Multimedia Resources: Access to a curated collection of videos, articles, and documentaries providing additional insights into natural hazards and their impacts.

Assessments and Feedback: Quizzes, assignments, and posters designed to evaluate students' understanding and provide constructive feedback for continuous improvement.

Organizing Board

Receiving/Host university:

Transilvania University of Brașov, Romania

(Prof. Dr. Eng. Carmen Elena MAFTEI, Faculty of Construction, carmen.maftei@unitbv.ro)

Sending/Partner universities:

P1. University of Brescia, Italy

P2. University Beira Interior, Portugal

P3. Haute École Spécialisée de Suisse Occidentale, Switzerland

P4. Instituto Politécnico da Guarda, Portugal

P5. Université Savoie Mont Blanc, France

P6. Other UNITA partner universities

Invited specialists/experts (if applicable) and their role in the implementation of the BIP:

Kostandinos Papatheodorou – full professor at Helenic International University, Greece

Buta Constantine – associate professor at Ovidius University, Romania, specialist hazard and risk management

Radu Vacareanu - full professor at Technical University of Construction Bucharest, Romania, expert in seismic risk assessment

Detailed programme

1. **Planned activities during virtual component:** Virtual mobility **1st July - 12th July 2024**

01.07.2024

9.00-9.45 Opening remarks and Logistics

10.00-14.00 Landslide hazard and risk assessment - GIS application

02.07.2024

10.00-12.00 River floods assessment - fundamentals of hydrology and river systems.

14.00-16.00 Soil liquefaction potential assessment - introduction to soil liquefaction.

03.07.2024

9.00-11.00 River floods assessment - determination of the extremes of some data series.

14.00-16. 00. Soil liquefaction potential assessment - soil properties relevant to liquefaction

04.07.2024

9.00-11.00 River floods assessment - hydrodynamic modeling basics.

14.00-16.00. Soil liquefaction potential assessment - site investigation methods, instrumentation, and monitoring

05.07.2024

9.00-11.00 River floods assessment - hands-on experience with modeling software (opensource)

14.00-16.00. Soil liquefaction potential assessment - hands-on experience with methods for liquefaction assessment.

08.07.2024

9.00-9.45 Opening remarks and Logistics

10.00-12.00 Flood hazard and risk assessment

13.00-15.00 GIS application

09.07.2024

9.00-11.00 Earthquake hazard and risk assessment - Earthquakes and Seismic Monitoring,

13.00 – 15.00 Dissemination and communication activity (scientific paper)

10.07.2024

9.00-11.00 Earthquake hazard and risk assessment – seismic hazard and risk analysis

13.00-15.00 Dissemination and communication activity (poster)

11.07.2024

9.00-15.00 poster presentation

12.07.2024 –

9.00-11.00 conclusions, closure time together

2. Planned activities during physical component:

1st day: 24.06.2024

9.00-9.30 Opening remarks;

09:30-09:45 Logistics

10.00-13.00 Session 1. Natural hazards (hydrological and geomorphological hazard). Introduction to the topics.

15.00-18.00. Session 2. Data Acquisition and Organization

2nd day: 25.06.2024

9,00-12,00 Session3. GIS and Remote Sensing Technique used in natural risks assessment.

14,00-17,00 Session 4 Dissemination and communication activity

3rd day: 26.06.2024

9,00-12,00 Session5. Landslide hazard and risk assessment - Basic landslide types (occurrence and relative size/range, velocity travel, triggering mechanism, direct and indirect effects, predictability)

14,00-17,00 Session 6. Application GIS

4th day: 27.06.2024

9,00-12,00 Session7. Landslide hazard and risk assessment - Landslides causes;soil properties relevant to landslides.

14,00-17,00 Session 8. Application GIS

5th day: 28.06.2024

9,00 – 12.00 Landslide hazard and risk assessment - Landslides susceptibility assessment methods and Landlslide Hazard assessment computation

13.00 – 17.00 Romanian water agency visit

Application procedure

Students send the applications to their home university.

Home university nominates the students at UNITBV (outgoing@unitbv.ro) by 15 May 2024.

Up to 5 participants per institution are welcome.

Facilities provided to participants:

- Free accommodation in university dormitories

- One meal/ day