g**i**z Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH

Practical field and laboratory course for students and NEA in rockfall reconnaissance, modelling and mitigation design

(version 26.10.2022)

Day 1 Tuesday 1st November 2022:
Office GIZ: Presentation and Theory

14:00 General introduction

14: 30 Rockfall Analysis – Part 1

- o Socio-economic relevance of rockfall
- o Rockfall mechanics

Break and Discussion

15:30 Rockfall Analysis – Part 2

- o Rockfall documentation
- o Rockfall models (empirical and GIS-based)

Break and Discussion

16:30 Rockfall Analysis – Part 3

- o Mitigation Measures
- o Case study

17:00 Introduction to Tskneti landslide area

17:30 Preparation for Field day

Day 2 Wednesday 2nd November 2022:
Field trip to Tskneti-Akhaldaba landslide

Inspection of the landslide site with focus on rockfall hazards:

- Introduction to site and regional geology in different locations
- Features of mass flow events
- Explanation of mitigation system
- Explanation of monitoring system with exemplary inclinometer measurement
- Rockfall protection fence: Georgia's first rockfall protection fence according to European standards (CE-certified, ETAG)
- Detail investigation of site regarding input parameters of rockfall modelling codes
  - o Interpretation of detachment zones (starting points)
  - o Interpretation of deposits (block size, block shape)
  - o Interpretation of travel paths (forest, roughness of surface)…

Day 3 Thursday 3rd November 2022:
Rockfall modelling Part 1

10:00 – 16:00 Workshop

- specific introduction to different rockfall modelling codes
- specific introduction to standards on design of rockfall protection
- preparation of field data from day 2 for rockfall modelling
- demonstration of rockfall modelling with field data from day 2
- discussion

Day 4 Friday 4th November 2022:
Rockfall modelling Part 2 / Outlook on Monitoring

10:00 – 12:00 Workshop

- exercise: rockfall modelling in groups (under supervision)
- discussion

Break and Discussion

14:00 Workshop on Monitoring

- Introduction
- Monitoring tools – presentation and training
- Discussion

Break and Discussion

15:00 Keynote lecture

Insights into Early Warning Systems based on modern IOT technologies in spectacular landslides in Medellin, Colombia

16:00 Closing and Outlook