



<b>Syllabus for the Course</b>	<b>Natural Hazards &amp; Disaster Response</b>	
<b>Location</b>	American University of Central Asia Applied Geology Department 7/6 Aaly Tokombaev Street 720060 Bishkek, Kyrgyzstan	
<b>Course Code</b>	ENV – 0000	
<b>Semester</b>	Fall 2022 (September – December)	
<b>Mode / Credits</b>	Lecture & Seminar / 6 credits	
<b>Duration</b>	15 weeks	
<b>Times</b>	14:30 – 17:00 on Fridays (and 1 time <b>also on Wednesday!</b> ) > September: 2, 9, 16, 23, 30 > October: 7, 14, 21, 28 > November: 4, (11 = fall break), 18, <b>24</b> & 25 (= <b>WE</b> & FR) > December: 2, 9, (16 = exam week) > January: (6 = publishing grades)	



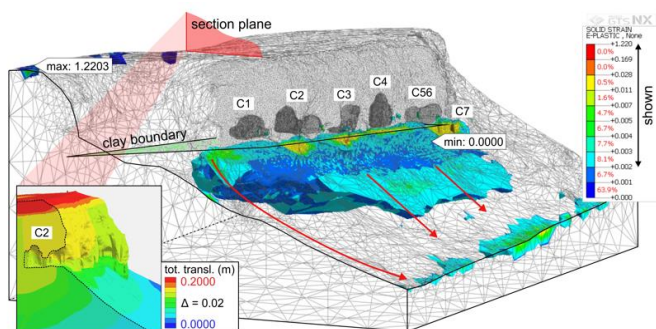
<b>Course Instructor</b>	<b>Dr. Dipl.-Ing. Gisela Domej</b> > contact: <a href="mailto:g.domej@gmail.com">g.domej@gmail.com</a> > office hours: upon appointment or online > personal page: <a href="https://giz-geo.jimdofree.com">https://giz-geo.jimdofree.com</a> > ResearchGate: <a href="https://www.researchgate.net/profile/Gisela-Domej">https://www.researchgate.net/profile/Gisela-Domej</a> > LinkedIn: <a href="https://www.linkedin.com/in/gisela-domej-0051a519b/">https://www.linkedin.com/in/gisela-domej-0051a519b/</a>	
<b>Affiliation</b> (until February 2022)	<b>University of Milano-Bicocca</b> <b>Department of Earth and Environmental Sciences</b> Piazza della Scienza 1/U4 20126 Milan, Italy <a href="https://en.unimib.it/gisela-domej">https://en.unimib.it/gisela-domej</a>	
<b>Affiliation</b> (from March 2022)	<b>Vilnius University</b> <b>Faculty of Chemistry and Geosciences</b> <b>Institute of Geosciences</b> <b>Department of Hydrogeology and Engineering Geology</b> M. K. Čiurlionio Street 21/27 03101 Vilnius, Lithuania	

## About the lecturer

Gisela Domej is a geologist and a natural hazard engineer holding a Ph.D. in geotechnical engineering from the Université Gustave Eiffel in France.

Her main fields of research are natural hazards and, in particular, earthquake-induced mass movements, mainly landslides, and related topics such as tectonics, geological and geophysical assessment methods, geomorphology, geostatistics, and numerical modeling in 2D and 3D. Currently, she is on a Post-Doc position at the Università Milano–Bicocca and will switch in March 2022 to a lecturer position at the Vilnius University in Lithuania.

Her current topics deal with 3D point clouds, their processing into geomodels, and 3D stability modeling under static or dynamic conditions.



(3D numerical stability model of the Sabereebi Cave Complex in Georgia, Caucasus)

## About the course

In this course, we will discover various types of natural hazards such as earthquakes, volcanoes, coastal hazards and tsunamis, floods and river run-off, drought and desertification, mass movements, atmospheric events and wildfires, climate change and pollution.

As the population on our planet grows and with constant expansion into new living areas, also the exposition to natural hazards increases.

The first classes of this course will introduce the students to the main concepts of hazard and risk, and likewise to perception and response strategies. After each theoretic part, the last 30 minutes are dedicated to active exercises on the topic.

In addition to classic lectures with exercises, there is an important component of active student work, and we will simulate the process of a conference event in a so-called “editorial game”. After a short course on scientific work principles for articles, posters, and presentations, we will divide the students into groups of 2-3. Each group will pick one of the topics of the class, for which 2 (easy-to-understand) case-study publications will be provided. The goal is to identify and expose the hazard interplay, synthesize the information into a mini-article of 4-5 pages, and to present the group work in a presentation of 15 minutes. According to the content of the short course on scientific work, the mini-articles should be formatted and collected in a compendium, as if they were small conference proceedings.

## Course materials and resources

Exercises and the planned group work require a computer; if software (other than basics such as an office suite) is required, it will be provided by the lecturer for free of charge.

There is no textbook for the class; material, as well as presentations, will be provided by the lecturer upon progress for the preparation of the final exam.

### Textbook suggestion:

F. G. Bell, 1999. Geological Hazards Their Assessment, Avoidance and Mitigation. CRC Press, 656 p. (ISBN 9780415318518)

## Grading scheme

> active participation in the class/exercises:	10%
> active participation in the “editorial game”:	35%
> quizzes (at different times during the class):	10%
> final group presentation:	20%
> final exam:	25%
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	100%

SEP 2, Friday (2.5h)	Introduction to the course  ----- Natural hazards – general	> introduction of lecturer & participants > scope of the course, fitting to study program > time plan, expectations of lecturer/students > communication & grading concept  ----- > overview, general concepts of hazard & risk
SEP 9, Friday (2.5h)	Natural hazards – general	> 2:00 h of general concepts of hazard & risk > 30 min of active exercise related to the content
SEP 16, Friday (2.5h)	Topic class – earthquakes	> 2:00 h of topic lecture > 30 min of active exercise related to the content
SEP 23, Friday (2.5h)	Topic class – volcanoes	> 2:00 h of topic lecture > 30 min of active exercise related to the content
SEP 30, Friday (2.5h)	Topic class – coastlands, tsunamis	> 2:00 h of topic lecture > 30 min of active exercise related to the content

OCT 7, Friday (2.5h)	Topic class – floods, river run-off	> 2:00 h of topic lecture > 30 min of active exercise related to the content
OCT 14, Friday (2.5h)	Topic class – drought, desertification	> 2:00 h of topic lecture > 30 min of active exercise related to the content
OCT 21, Friday (2.5h)	Topic class – mass movements	> 2:00 h of topic lecture > 30 min of active exercise related to the content
OCT 28, Friday (2.5h)	Topic class – atmospheric events, fires	> 2:00 h of topic lecture > 30 min of active exercise related to the content

NOV 4, Friday (2.5h)	Topic class – climate change, pollution	> 2:00 h of topic lecture > 30 min of active exercise related to the content
NOV 11, Friday	<i>fall break</i>	
NOV 18, Friday (2.5h)	Scientific work (a quick introduction)	> concepts for articles, posters & presentations > bibliography & citations > small tricks for writing English properly > outline of the “editorial game” in week 4 > active participation throughout the class
NOV 24, <b>Wednesday</b> (2.5h)	Editorial game – supervised class activity	> group work on the chosen topic > reduction of a synthesis paper (4-5 pages)
NOV 25, Friday (2.5h)	Editorial game – supervised class activity	> preparation of a 10-15 min presentation

DEC 2, Friday (2.5h)	Editorial game – supervised class activity	> collection of synthesis papers in a compendium > preparation/repetition of presentations
DEC 9, Friday (2.5h)	Editorial game – final presentation	> Let’s invite guests and show what we learned!
DEC 16, Friday	<i>exam week</i>	

JAN 6, Friday	<i>publishing grades</i>	
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