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IMRB

AUSTRIA 2025 ✨

MINE RESCUE AS PART OF ACADEMIC EDUCATION AT THE TU BERGAKADEMIE FREIBERG AND INTERNATIONAL COOPERATION

Building competences for the next generation through lectures, training and competitions

Louis Schaarschmidt, Erik Farys, Prof. Dr.-Ing. Helmut Mischo, Pr. Eng.

TU Bergakademie Freiberg

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REASONING

“The most important thing to come out of a mine is the miner.”

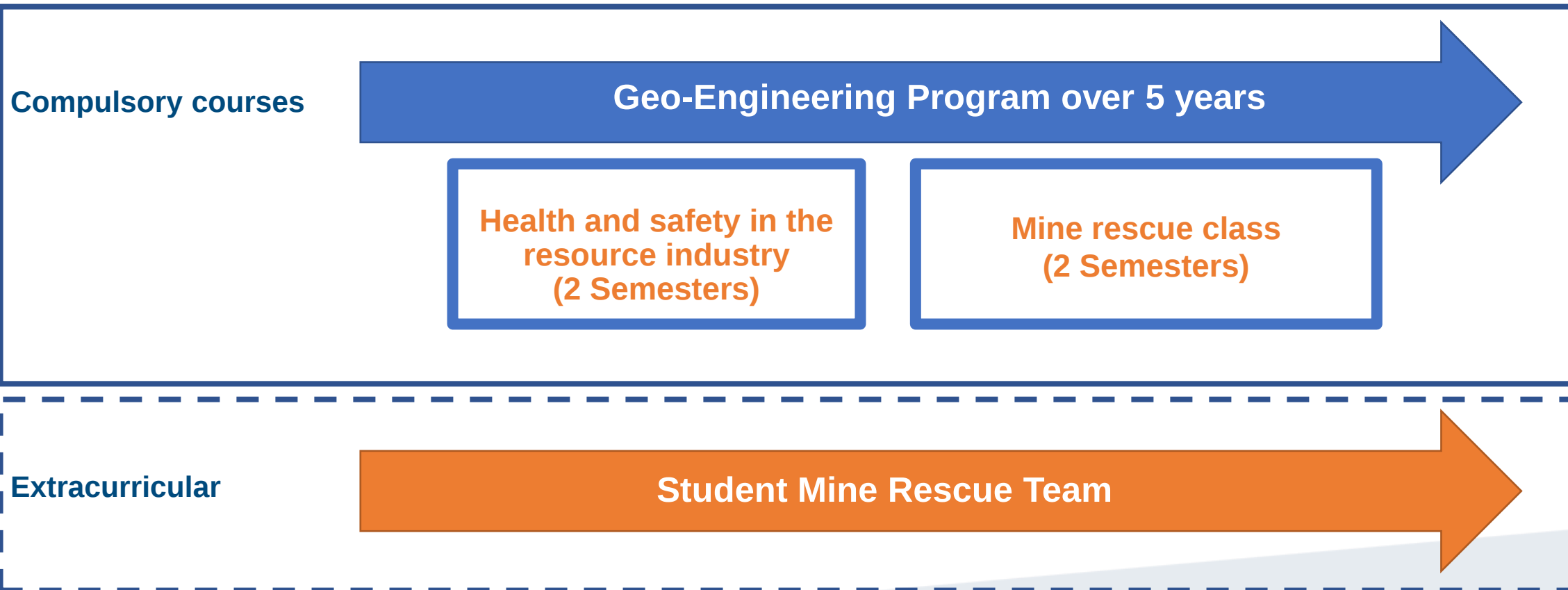
Frédéric Le Play (1806-1882)

French sociologist and inspector general of mines of France

REASONING

- As a university we are responsible for the education and training of the future generation of engineers
- Foster health and safety culture as early as possible to raise awareness
- Especially in smaller and medium sized companies engineers can be required early in their career to deal with healthy and safety issues and require competences

IMPLEMENTATION



HEALTH AND SAFETY IN THE RESOURCE INDUSTRY

First Semester:

- Legal frameworks
- General health and safety topics
- Firefighting
- Theoretical introduction to mine rescue

Second Semester:

- Guest lectures
- Workshops with industry partners



Source: Deutsche Grubenrettung

MINE RESCUE CLASS

First Semester:

- Best practice for mine rescue
- Communication systems
- Team member roles and responsibilities
- International mine rescue differences
- Mine rescue simulator training in preparation for underground

Second Semester:

- Guest lectures
- Practical underground training in our own research mine „Reiche Zeche“
- Workshops with industry partners for technical equipment (firefighting, roping, physical training,...)



Mine rescue simulator training (Source: J. Weyer)

STUDENT MINE RESCUE TEAM

- Founded in 2017 as a student working group
- Includes additional trainings underground and on the surface
- Taking part in international mine rescue competitions
- Field trips to industry partners
- Training with selected stakeholders
- Co-operation with Underground Mining Chair
- Currently around 20 active members



Training exercise in Zielitz Mine with K+S (Source: Schaarschmidt)



MERD competition in the US (Source: Farys)

STUDENT MINE RESCUE TEAM

- Competing in MERD since 2013
- Top 3 placements in the past two MERD competitions
- Utilizing MERD as international platform to network with teams from all over the world



MERD underground scenario (Source: Mischo)



MERD awards (Source: Farys)



MERD Team 2025 (Source: Schaarschmidt)

FUTURE GOALS

- Strengthen international cooperation in mine rescue and mine safety related topics
- Leverage differences between international rules for continuous improvement (learn from each other)
- Educate as many students as early as possible about mining safety related topics
- Research and knowledge transfer

The MINERS-Project – What is that?

- „Mine Emergency Response and Rescue School“
- International Co-operation between:
 - Montanuniversität Leoben
 - TU Bergakademie Freiberg
 - University of Zagreb
 - Trinity College Dublin
 - Willi Schön, Consultant
 - Boliden AB as an industry partner



Logo of the MINERS-Project

Granted by:



- Goal: Implementation of a **University Course** which provides **knowledge of mine rescue tasks** and the **management of emergency situations**

The MINERS-Project – What is that?

- Helping future mining engineers to understand the importance and difficulties of mine rescue
- Giving the chance to gain experience in high pressure situations (e.g. working with breathing apparatus)
- Strengthening the international co-operation between the partners
- Using the assets of every partner to their fullest potential (pooling and sharing of capabilities)



The MINERS-Project – What is that?

- Theoretical side of the project:
 - Course handbook
 - Theoretical lessons
 - Seminar thesis



Lecture on ventilation measurements (Source: Dalibor Kuhinek)

- Practical side of the project:
 - 3 consecutive 5-day workshops (Zagreb, Freiberg, Leoben)
 - Working with breathing apparatus



Ventilation measurements underground (Source: Dalibor Kuhinek)

The MINERS-Project – First Iteration of the Course

- Realized from March to October 2019 with 27 participants in total
- Besides the project partners, the program received support from:
 - Industry: Wismut GmbH, BGRCI Leipzig, FLB Freiberg
 - Public Institutions: Colorado School of Mines, Austrian Military, Fire Brigades Leoben and Zagreb, AG Grubenwehr

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Participants and coordinators of the 2. MINERS workshop
(Source: J. Weyer)

The MINERS-Project – First Iteration of the Course

Workshop Zagreb

- Chief organizer: Prof. Dalibor Kuhinek
- Focus: Individual mine rescue skills
- Practice:
 - First aid
 - Ropework
 - Gas and ventilation measurements

Workshop Freiberg

- Chief organizer: Prof. Helmut Mischo
- Focus: Working as a mine rescue team
- Practice:
 - CCBA usage and maintenance
 - Communication skills
 - Rescue exercises with breathing protection

Workshop Leoben

- Chief organizer: Ass. Prof. Hannes Kern
- Focus: Emergency management
- Practice:
 - Incident mapping and hazard assessment
 - Planning of rescue operations
 - Combined rescue exercise

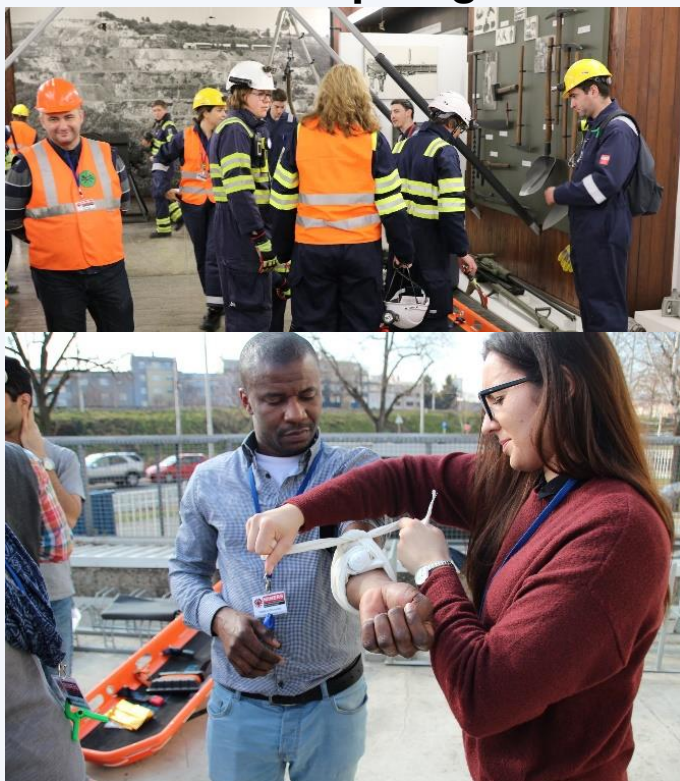
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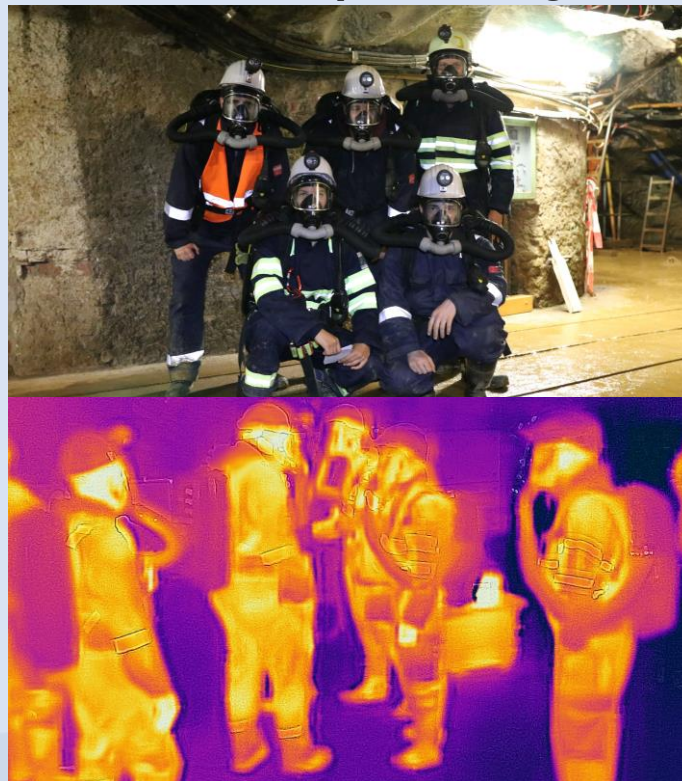
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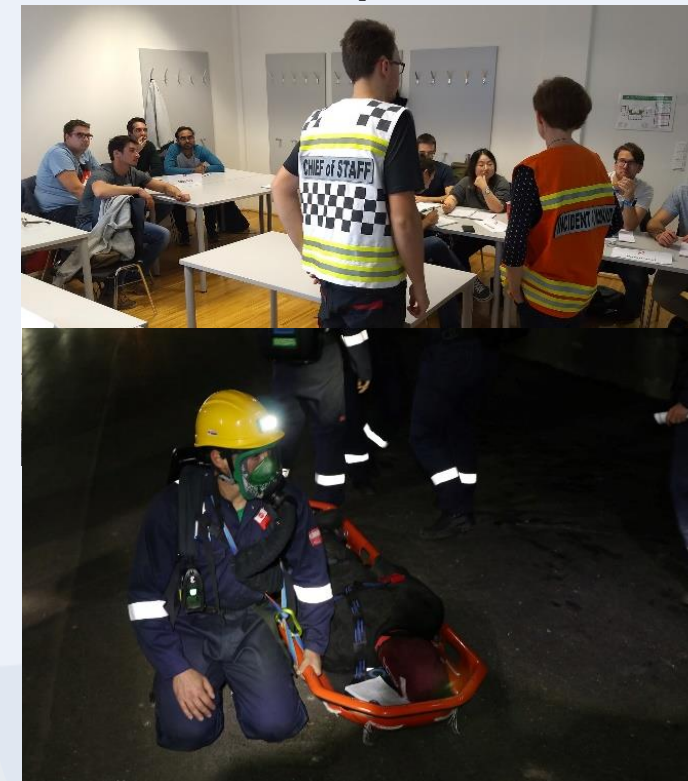
Workshop Zagreb



Workshop Freiberg



Workshop Leoben



The MINERS-Project – Why are we talking about it now?

- Due to COVID, repetitions of the program were temporarily prevented
- The need for and interest in increased safety in mining and international cooperation have only continued to grow since then
- We are currently working on launching a successor, the **MINERS 2.0** project in **2026**
- Already involved are: Montanuniversität Leoben, University of Zagreb, Technical University of Ostrava, and TU Bergakademie Freiberg
- **We would be delighted to find additional interested parties and look forward to engaging in discussions with You**



University of
Zagreb

VŠB TECHNICKÁ
UNIVERZITA
OSTRAVA

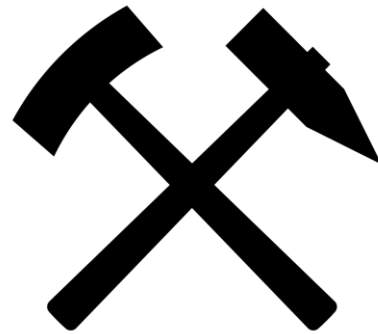


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Thank you and “Glück Auf!”



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