

101082621 – EMINReM – ERASMUS-EDU-2022-CBHE

MASTER PROGRAM IN ECO-MINING ENGINEERING AND INNOVATIVE NATURAL RESOURCES MANAGEMENT (EMINReM)



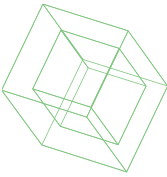
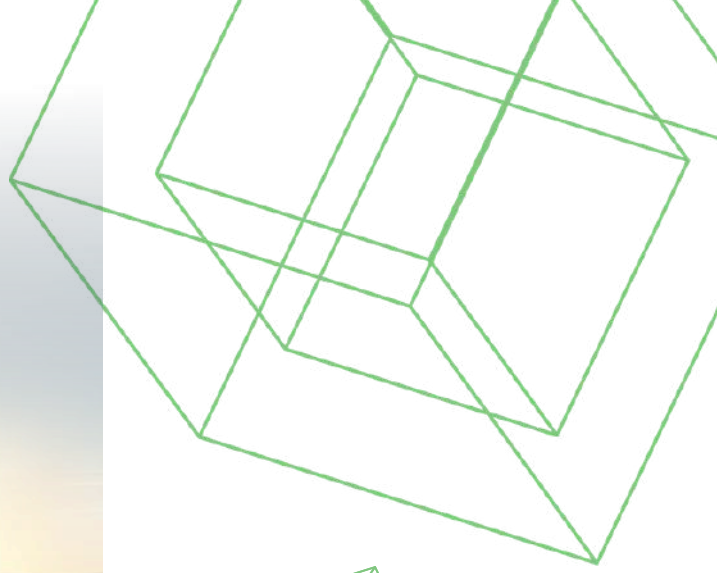
PARTNER UNIVERSITIES



Project Details on
Erasmus+ Platform



Official
Project Website





PROJECT MISSION AND WIDER OBJECTIVE

This Project is aimed at increasing efficiency and ecological sustainability of the mining industry in the NAPC through the EU-NAPCPC HEIs multilateral collaboration. The wider objective is to raise efficiency and ecological sustainability of mining works realization through the Partner-HEIs collaboration for training of new-generation-experts within environmental, economic and management attainments in the field of natural resources extraction and processing. This initiative is created in response to the current challenges of sustainable development and market needs.

PROGRAM AND INTERDISCIPLINARY CURRICULUM

The advanced EMINReM Programme will be an interdisciplinary course. It will be created in response to the current challenges of sustainable development and market needs. Its goal is to prepare future mining engineers for interdisciplinary openness and to train managers capable of understanding technological issues in a systematic and in-depth way. The Program will be focused on innovative and sustainable production, recovery and management of natural resources ensuring interdisciplinary students` competencies development. The curriculum will include mining and processing operations, recovery and recycling technologies.

METHODOLOGY AND DIGITAL TOOLS

Technological feasibility, sustainability and circular economy will receive great attention in the holistic teaching and learning processes. The thematic scope covered by the EMINReM will also combine scientific technological fields with economic, environmental and entrepreneurial aspects. This involves using modeling and evaluation tools, e.g. digital tools: VR, AR, Virtual Learning, IoT, Gamification etc.

TASKS AND COMPETENCIES

Development of the future experts` interdisciplinary openness, capability of understanding technological issues in a systematic and in-depth way, using the tools of modelling and evaluation of potential environmental risks, mitigating them in our fast developing world. MP in EMINReM will be created in response to the current challenges of sustainable development and market needs.

EXPECTED RESULTS AND TOOLS

- It is foreseen to develop the EU-based MP focused on the integration of the best EU practices and approaches in the field of EMINReM and introduce them in the NAPC HEIs;
- To develop Teaching Materials for EMINReM MP;
- To establish EMINReM LABs for students at 7 NAPC HEI;
- To launch Joint Virtual e-Learning Platform;
- To provide EMINReM students pilot and Experts' advanced trainings.

INTERNATIONAL COOPERATION AND STANDARDS

The Project supports transfer of the most recent knowledge and good practices developed at the Programme countries (EUMS/APC) - DE, ES & TR, in the field of Sustainable Eco-Mining Engineering, to other countries not associated to the Erasmus+ Programme (NAPC) - UA, KZ and UZ, considering all challenges that are required by modern EU and national technological, economic and environmental standards and trends (e.g. European Green Deal, Industry 4.0, etc.).

TARGET GROUPS

- Potential HEI Entrants;
- Students;
- Teachers & Staff;
- Industry & NGO Representatives;
- State Authorities;
- Employers;
- Alumni.

PROFESSIONAL PROFILES AFTER GRADUATION FROM EMINREM PROGRAMME

The knowledge and skills EMINReM graduates gain are highly valued in the industry and beyond. Graduates are qualified not only to work in the fields of Mining, Mine-surveying, Building Materials, Non-ferrous Metals Production, Circular Economy of Metals and Mineral Chemistry; possible career paths also include working for:

- Geological surveys;
- Investment banks (resources sector);
- Venture capital (resources sector);
- State Establishments (raw materials and industry);
- National/regional governments (mining laws, implementing circular economy, mineral industry);
- EMINReM also prepares you for further study (PhD) in Mining, Mineral Processing, Resources/Reserves Estimation, Process Development, Mineral Industry, etc.

EXPECTED IMPACT ON EDUCATION AND EMPLOYMENT

Realization of the EMINReM project can give a strong push to significantly increasing the popularity of the Master Program in Eco-mining & Resource Management among UA, KZ and UZ students. This will lead to mining HE quality improvement in the NAPC, enhancement its relevance for the labor market and society; improvement the level of competences, skills and employability potential of students in the NAPC HEIs; teachers` training improvement; stimulating cooperation of institutions, capacity building and exchange of good practice in academic, scientific and academy-business fields.

SYNERGY BETWEEN STAKEHOLDERS AND CALL RELEVANCE

Project address mismatches between the requirements of employers and the offer of HEIs through introducing innovative mining curricula based on the request of employers; implementation of innovative learning and teaching methods through the EU and APC HEIs experience transfer to the NAPC HEIs teachers; introduction of innovative EMINReM EAT Program based on business and government` representative`s needs; fostering dialog between the Project partners not only for academic, but also for scientific cooperation, etc. Hence, the Project is relevant to the scope of the call and addresses its objectives.



INFORMATION ABOUT THE IMPLEMENTATION OF EDUCATIONAL PROGRAMS AND EQUIPMENT PURCHASED FOR **EMINReM** LABS AND RESOURCE CENTRES:

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ZHYTOMYR STATE POLYTECHNIC UNIVERSITY

Specialty:

MINING AND OIL & GAS TECHNOLOGIES

Educational and professional program:

Development of Deposits
and Extraction of Minerals

Profile:

Eco-Mining Engineering and Innovative
Natural Resources Management (EMINReM)



Programme
details



More
information
about
applying



Duration / Credits:
1,5 years / 90 ECTS



Language of instruction:
Ukrainian
(English for some subjects)



Entry requirements:

The programme is aimed at candidates who have a bachelor's degree preferably in Mining Engineering, Mine-surveying, Geological Engineering or Metallurgical Engineering.



Application Period:
June-July
(April-May — registration
for Single Entry Exam)



Tuition fees:
3700 UAH/mon | full-time study
2300 UAH/mon | part-time study



Scholarship:
2500 UAH/mon
(ranking evaluation)

Programme Structure

It is organised into three semesters and accounts for 90 ECTS or 30 ECTS per semester.

The second level of higher education of a Mining Engineer is designed to consolidate the knowledge and skills already acquired, to deepen knowledge in special engineering disciplines. To develop analytical skills for finding problems in the technological processes of the industry, the ability to put forward hypotheses and conduct initial research to confirm or refute the hypotheses put forward.

Attention is paid to the study of modern applied software products, including AutoCAD Civil3D, GIS K-MINE, 3D Survey, etc.

Development of Deposits and Extraction of Minerals (Educational and professional program — 1,5 years)

List of obligatory disciplines | Year 1

- Implementation of Risk Assessment Methods for Occupational Health and Safety (3 ECTS)*
- Civil Protection (3 ECTS)
- Foreign Language for Specific Purposes (3 ECTS)
- Research Methodology and Mathematical Modeling (3 ECTS)
- Applied Software in Mining (5 ECTS)
- Advanced Mineral Processing for Eco-Mining (5 ECTS)*
- Clean Technologies for Open-pit Mining (5 ECTS)*
- Mineral Extraction Technology (Hydromechanical Method) (6 ECTS)

List of obligatory disciplines | Year 2

- Intellectual Property (3 ECTS)
- Subsurface Use, Development and Approval of Project Documentation (4 ECTS)
- Planning of Stone-extraction and -processing Enterprises (5 ECTS)
- Research and Industrial Practice (6 ECTS)
- Pre-Diploma Internship (6 ECTS)
- Master's Thesis (9 ECTS)

**Disciplines implemented within the framework of the EMINReM project*

ZHYTOMYR STATE POLYTECHNIC UNIVERSITY

Specialty:

MINING AND OIL & GAS TECHNOLOGIES

Educational and professional program:

Mine-surveying

Profile:

Eco-Mining Engineering and Innovative
Natural Resources Management (EMINReM)Programme
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applyingDuration / Credits:
1,5 years / 90 ECTSLanguage of instruction:
Ukrainian
(English for some subjects)

Entry requirements:

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(April-May — registration
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posits and Extraction of Minerals (Educational and professional program — 1,5 years)

List of obligatory disciplines | Year 1

- Implementation of Risk Assessment Methods for Occupational Health and Safety (3 ECTS)*
- Civil Protection (3 ECTS)
- Foreign Language for Specific Purposes (3 ECTS)
- Research Methodology and Mathematical Modeling (4 ECTS)
- Geographic Information Systems (GIS) in Mine Surveying (4 ECTS)
- Resource Modeling and Evaluation (4 ECTS)*
- Higher Geodesy (5 ECTS)
- Photogrammetry (4 ECTS)

List of obligatory disciplines | Year 2

- Intellectual Property (3 ECTS)
- Subsurface Use, Development and Approval of Project Documentation (4 ECTS)
- Planning of Mine-surveying, Mining Operations and Management of Technological Processes in Mining (5 ECTS)
- Research and Industrial Practice (6 ECTS)
- Pre-Diploma Internship (6 ECTS)
- Master's Thesis (12 ECTS)

*Disciplines implemented within
the framework of the EMINReM project

ZHYTOMYR POLYTECHNIC STATE UNIVERSITY



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COMPUTERS & SERVERS



3 ITEMS

LENOVO IDEAPAD GAMING 3 15IHU6

Lenovo IdeaPad Gaming laptops are used during fieldwork and laboratory classes for processing GNSS data, operating surveying instruments, performing GIS analysis, and preparing student research projects and Master theses. Their mobility allows students to process spatial data directly in the field.



10 ITEMS

PC: INTEL CORE™ I5 12400F, GEFORCE GTX1650, DDR4 16GB, PHILIPS 221V8/00 MONITORS

The desktop computers are used in the EMINReM digital laboratory for advanced 3D modelling, mine planning simulations, environmental impact analysis, photogrammetric data processing, and geospatial modelling. These computers enable students to work with professional software and large datasets typical for modern eco-mining projects.



SERVER SUPERMICRO

The Supermicro server ensures centralized data storage, processing of large geospatial datasets, support for multi-user laboratory sessions, and long-term sustainability of the digital infrastructure of the EMINReM laboratory.

MULTIMEDIA EQUIPMENT

VIRTUAL REALITY GLASSES OCULUS META QUEST 3 128GB; PROJECTOR ACER XL2530; SCREEN ATRIA MRSM-NTSC-150D; ROUTER TP-LINK ARCHER-AX53; CABLE AND CONSOLE



The virtual reality glasses OCULUS Meta Quest 3 are used to provide immersive training in mine safety, environmental risk assessment, and visualization of 3D geological and mining models. This technology enhances practical understanding of complex mining processes and supports innovative teaching methods. The multimedia equipment, including the projector, screen, and router, is used for hybrid lectures, visualization of GIS maps and 3D models, presentation of laboratory results, and participation in international Erasmus+ online collaboration activities with partner universities.

SOFTWARE



SOKKIA GEOPRO FIELD GPS

The SOKKIA GeoPro Field software is used for field data collection, GNSS data management, coordinate correction, and integration of survey results into GIS and 3D modelling environments.

25 LICENSES

3DSURVEY EDUCATIONAL CLASSROOM LICENSE



The 3Dsurvey educational licenses are used for processing UAV data, creating digital terrain models, calculating volumes of mineral deposits, and developing digital mine planning projects. This software strengthens students' competencies in digital mining technologies.

EMINReM LAB EQUIPMENT



GLOBAL NAVIGATION SATELLITE SYSTEM RECEIVER: SOKKIA GCX3 LI GPS/GLONASS LONG-RANGE BLUETOOTH

SOKKIA IM-55 TOTAL STATION

The GNSS receiver SOKKIA GCX3 and the Sokkia IM-55 total station are used for practical training in topographic surveying, mine boundary mapping, volume calculations, infrastructure alignment, and environmental monitoring. Students gain hands-on experience in professional geodetic measurements and spatial data acquisition.



DEVICE VIKA; ULTRASONIC DEVICE PULSAR 1.1; SCHMIDT HAMMER; PGR CONE AND BEAM SHAPER

The ultrasonic device, Schmidt hammer, PGR cone and beam shaper, and other geomechanical instruments are used for determining rock strength, elastic properties, structural integrity, and material stability. These devices allow students to perform laboratory testing relevant to sustainable mining and safe resource extraction.



DOSIMETER METRICO R600UA; CONDUCTIVITY METER TDS+EZODO, TESTERS GREENTEST, GROLINE+PH, HI98129

The dosimeter, conductivity meter, pH testers, and other environmental monitoring instruments are used to assess radiation levels, water quality, soil contamination, and environmental safety parameters. They support training in environmental impact assessment and sustainable natural resource management.



MICROSCOPES NATIONAL GEOGRAPHIC, BRESSER LCD

The microscopes are used for mineral identification, petrographic analysis, and structural examination of rocks and ores. They support practical classes in mineralogy, geology, and raw materials assessment.

DNIPRO UNIVERSITY OF TECHNOLOGY

Specialty:

MINING AND OIL & GAS TECHNOLOGIES

Educational and professional program:

Surface Mining

Profile:

Eco-Mining Engineering and Innovative
Natural Resources Management (EMINReM)Programme
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applyingDuration / Credits:
1,5 years / 90 ECTSLanguage of instruction:
UkrainianEntry requirements:
The programme is aimed
at candidates who have a
bachelor's degree preferably
in Mining Engineering.Application Period:
June-July
(April-May — registration
for Single Entry Exam)Tuition fees:
3000 UAH/mon | full-time study
1500 UAH/mon | part-time studyScholarship:
2500 UAH/mon
(ranking evaluation)Double Diploma possibilities:
Triple Diploma with Montanuniversität Leoben (Austria) and
TU Bergakademie Freiberg (Germany)

Programme Structure

It is organised into three semesters and accounts for 90 ECTS or 30 ECTS per semester.

The second level of higher education of a Mining Engineer is designed to consolidate the knowledge and skills already acquired, to deepen knowledge in special engineering disciplines. To develop analytical skills for finding problems in the technological processes of the industry, the ability to put forward hypotheses and conduct initial research to confirm or refute the hypotheses put forward.

Attention is paid to the study of modern applied software products, including Micromine, GIS K-MINE, etc.

Surface Mining (Educational and professional program — 1,5 years)

List of obligatory disciplines | Year 1

- Foreign language for professional activity (English/German/French) (4 ECTS)
- Safety management, autonomy and responsibility in professional activity (3 ECTS)
- Innovative technologies of mineral deposits development (3 ECTS)
- Design of transport systems of mining enterprises (3 ECTS)
- Organization of planning and management of a mining enterprise (3 ECTS)
- Design of mines (3 ECTS)
- Technological design of quarries (3 ECTS)
- Design of ventilation of mining enterprises (3 ECTS)
- Rational Use of Mineral Resources (3 ECTS)***
- Resources Modelling and Evaluation (4 ECTS)***
- Open pit mining and processing of construction rocks (4 ECTS)

*Disciplines implemented within the framework of the EMINReM project

DNIPRO UNIVERSITY OF TECHNOLOGY

Specialty:

ECOLOGY

Educational and professional program:

Ecology

Profile:

Eco-Mining Engineering and Innovative
Natural Resources Management (EMINReM)Programme
detailsMore
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about
applying

Duration / Credits:

1,5 years / 90 ECTS



Language of instruction:

Ukrainian



Entry requirements:

The programme is aimed at
candidates who have a
bachelor's degree preferably
in Ecology.

Application Period:

June-July
(April-May — registration
for Single Entry Exam)

Tuition fees:

3000 UAH/mon | full-time study
1500 UAH/mon | part-time study

Scholarship:

2500 UAH/mon
(ranking evaluation)

Programme Structure

It is organised into three semesters and accounts for 90 ECTS or 30 ECTS per semester.

The second level of higher education of an Ecologist is designed to consolidate already acquired knowledge and skills, deepen knowledge in special engineering disciplines. Develop analytical skills to find problems in the technological processes of the industry, the ability to put forward hypotheses and conduct initial research to confirm or refute the hypotheses put forward.

Ecology (Educational and professional program, 1,5 years)

List of obligatory disciplines | Year 1

- Foreign language for professional activity (English/German/French) (6 ECTS)
- Scientific foundations of rational environmental management (4 ECTS)
- Landscape design of industrial areas (4 ECTS)
- System analysis of environmental quality (3 ECTS)
- Sustainable development strategy (3 ECTS)
- Sustainable Business and Project Management (3 ECTS)***
- Strategic environmental assessment (3 ECTS)
- Innovative environmental protection technologies (3 ECTS)
- Modeling of ecosystems and processes (3 ECTS)
- Biomining (4 ECTS)

**Disciplines implemented within the framework of the EMINReM project*

DNIPRO UNIVERSITY OF TECHNOLOGY

Specialty:

TECHNOLOGY OF ENVIRONMENTAL PROTECTION

Educational and professional program:

Technology of Environmental Protection

Profile:

Eco-Mining Engineering and Innovative Natural Resources Management (EMINReM)



Programme details



More information about applying



Duration / Credits:

1,5 years / 90 ECTS



Language of instruction:

Ukrainian



Entry requirements:

The programme is aimed at candidates who have a bachelor's degree preferably in Technology of Environmental Protection.



Application Period:

June-July
(April-May — registration for Single Entry Exam)



Tuition fees:

3000 UAH/mon | full-time study
1500 UAH/mon | part-time study



Scholarship:

2500 UAH/mon
(ranking evaluation)

Programme Structure

It is organised into three semesters and accounts for 90 ECTS or 30 ECTS per semester.

The second level of higher education of an Technology of Environmental Protection is designed to consolidate already acquired knowledge and skills, deepen knowledge in special engineering disciplines. Develop analytical skills to find problems in the technological processes of the industry, the ability to put forward hypotheses and conduct initial research to confirm or refute the hypotheses put forward.

Technology of Environmental Protection (Educational and professional program, 1,5 years)

List of obligatory disciplines | Year 1

- Foreign language for professional activity (English/German/French) (6 ECTS)
- Scientific foundations of rational environmental management (4 ECTS)
- Modeling of ecosystems and processes (3 ECTS)
- Sustainable Business and Project Management (3 ECTS)***
- Environmental and resource-saving technologies (3.5 ECTS)
- Coursework on environmental and resource-saving technologies (0.5 ECTS)
- Ecological and technogenic safety (6 ECTS)
- Strategic environmental assessment (3 ECTS)
- Industrial Waste Management, Resource Recovery and Recycling Technologies (3 ECTS)***
- Geoinformation technologies for environmental protection (4 ECTS)

**Disciplines implemented within the framework of the EMINReM project*

DNIPRO UNIVERSITY OF TECHNOLOGY

Specialty:

TECHNOLOGY OF ENVIRONMENTAL PROTECTION

Educational and professional program:

Resource conservation in the mining and metallurgical complex

Profile:

Eco-Mining Engineering and Innovative Natural Resources Management (EMINReM)



Programme details



More information about applying



Duration / Credits:

2,0 years / 120 ECTS



Language of instruction:

Ukrainian



Entry requirements:

The programme is aimed at candidates who have a bachelor's degree preferably in Technology of Environmental Protection.



Application Period:

June-July
(April-May — registration for Single Entry Exam)



Tuition fees:

3000 UAH/mon | full-time study
1500 UAH/mon | part-time study



Scholarship:

2500 UAH/mon
(ranking evaluation)

Programme Structure

It is organised into three semesters and accounts for 120 ECTS or 30 ECTS per semester.

The researches level of higher education of an Technology of Environmental Protection is designed to consolidate already acquired knowledge and skills, deepen knowledge in special engineering disciplines in Resource conservation in the mining and metallurgical complex. Develop analytical skills to find problems in the technological processes of the industry, the ability to put forward hypotheses and conduct initial research to confirm or refute the hypotheses put forward.

Resource conservation in the mining and metallurgical complex (Educational and scientific program, 2 years)

List of obligatory disciplines | Year 1

- Foreign language for professional activity (English/German/French) (6 ECTS)
- Ecological and technogenic safety (6 ECTS)
- Strategic environmental assessment (3 ECTS)
- Scientific foundations of rational use of nature (4 ECTS)
- Coursework on environmental and resource-saving technologies (0.5 ECTS)
- Sustainable Business and Project Management (3 ECTS)***
- Environmental and resource-saving technologies (3.5 ECTS)
- Modeling of ecosystems and processes (3 ECTS)
- Problems and Innovations in the Process Chain of Mineral Resources (3 ECTS)***
- Resource conservation in the mining and metallurgical complex (4 ECTS)




List of obligatory disciplines | Year 2

- Conducting educational activities (3 ECTS)
- Conducting scientific activities (3 ECTS)
- Innovative environmental protection technologies (4 ECTS)
- Systematic analysis of environmental quality (4 ECTS)

*Disciplines implemented within the framework of the EMINReM project

DNIPRO UNIVERSITY OF TECHNOLOGY

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COMPUTERS & SERVERS



13 ITEMS  

PC PROLOGIX B760I5 -12400 / DDR5/ RAM 64 GB / SSD 1 TB/UHD 730/ATX600W

Use PC Prologix B760I5-12400 in virtual laboratories for conducting experiments and educational process. Allow to automate the process of testing knowledge, providing accurate and fast assessment. Use in the educational process for teaching subjects to masters of specialties related to mining and environmental protection of industrial processes.



13 ITEMS  

MONITOR LENOVO 27 THINK VISION27Q-20

Monitors Lenovo 27 Think Vision for training, which have high resolution (2K) and good color reproduction. This allows you to work effectively with documents and spreadsheets (provides wide viewing angles and accurate color reproduction) and ergonomics (the ability to tilt and adjust in height).



2 ITEMS  

HP LAPTOP 14-EP1019UA (B0QR2EA)

HP Laptop 14-ep1019ua for VR labs provide high performance necessary for working with specialized applications, modeling and simulations. Laptops are also used during field events when capturing 360 video at production facilities, saving large files and transferring them online to specialized servers.



SERVER PROLOGIX (113400.760.64-5.S1.H20.INT.750W)

The VR lab server Prologix is used to deploy, manage and maintain the operation of the virtual environment. It processes data, stores content and provides access to VR applications for users who, using VR glasses, interact with 3D models and simulations that simulate real processes. This allows experiments and training without physical equipment.

MULTIMEDIA EQUIPMENT



INTERACTIVE SMART BOARD STARBOARD FX-89WE2

An Interactive Smart Board StarBoard FX-89WE2 for online teaching allows you to improve interaction between the lecturer and students, increase the efficiency of classes, and better assimilation of the material through multimedia capabilities and collaboration. It allows you to display any content on the screen, make notes, save lessons, and use virtual laboratories.



LOGITECH HD PTZ PRO 2 WEBCAM (960-001186)

A tracking camera Logitech HD PTZ Pro 2 for online teaching allows you to focus on the lecturer as he moves around the classroom, providing better video quality for students and making the learning process more natural and interactive. It allows the teacher to focus on the material, not on the technical aspects, while maintaining a high level of engagement for students who see the online teacher in focus even when he moves.

PERIPHERALS



SSD SAMSUNG T7 4TB SHIELD BLACK (MU-PE4T0S/EU)

An SSD Samsung T7 4TB for a VR lab is needed to speed up program and data loading, ensure smooth operation, and reduce latency, as VR applications require high performance and fast file access. The absence of moving parts also makes SSD more reliable and resistant to mechanical damage compared to HDD during field events and 360 video.



WIRELESS MICROPHONE SYSTEM SYNCO G3 250M 2.4GHZ

A system Synco G3 250m with wireless lapel microphones is necessary for online teaching of lectures and conferences, as it provides freedom of movement and high sound quality. It is easily attached to the clothes of the speaker and the representative of the participants, does not require additional settings (plug-and-play) and is suitable for recording voice during online lessons, streaming, and other events.

TECHNICAL TRAINING



SAMSUNG THE FREESTYLE PORTABLE PROJECTOR (SP-LSP3BLAXUA)

A mobile projector Samsung The Freestyle Portable for teaching is used to visualize educational content, making classes more visual and interactive. It allows you to demonstrate multimedia materials, videos, presentations and graphics on a large screen, improving understanding of complex topics and increasing student engagement.

10 ITEMS 

WEBCAMS LOGITECH BRIO 300 GRAPHITE / FULL HD (960-001436)

Webcams Logitech Brio 300 for online teaching are used to engage students because they allow you to create a more interactive and effective learning environment. They help the teacher communicate with students from any country, better absorb the material. Cameras also allow for recording of lessons for those who were absent and provide feedback, making distance learning more like a real-life process.



DOCUMENT CAMERA EPSON ELPDC13 VISUALISER (V12H757040)

A document scanner Epson ELPDC13 is used to convert paper materials into an electronic format, which simplifies their storage, sharing and use in online learning. This allows the teacher to quickly create digital copies of assignments, handouts or student work, making the learning process more interactive and saving time and paper.




 3 ITEMS  

VIRTUAL REALITY GLASSES OCULUS QUEST 2 256 GB

3D glasses Oculus Quest 2 for online learning are used to create interactive and immersive educational experiences that help to better understand complex topics. They allow students and postgraduates to explore virtual models, conduct experiments and navigate in 3D environments, which makes learning more visual, exciting and effective compared to traditional methods.

INSTA360 PRO 2 PANORAMIC CAMERA

The INSTA360 PRO 2 camera is essential for creating high-quality visual material on the processes of mineral development and environmental safety measures, which is the basis for full immersion in the learning process. Thanks to 360° video shooting, students can independently choose what to look at while studying the material. This creates the effect of presence, improves discipline control, helps to visualize objects and provides more opportunities for creating exciting content.


 2 ITEMS  

INSTA360 ONE RS 1-INCH CAMERA

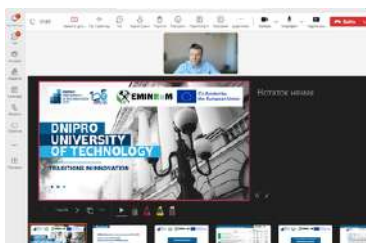
Insta360 ONE RS cameras complement the INSTA360 PRO 2. The cameras are additionally used for online teaching to create the effect of presence, show students, ensure better discipline, track their activity and prevent cheating. They also give the teacher the opportunity to see all students at the same time and control their attendance in classes.

AIR QUALITY ANALYZER CEM DT-9881

The air quality analyzer CEM DT-9881 for research is used to monitor pollution, assess air safety and ensure compliance with environmental standards during the development of mineral deposits. It is also used to measure the concentration of various pollutants. Teaching students air quality research methods is important in the process of training future specialists and increases their competitiveness in the labor market.

SOFTWARE


 100 ITEMS | 100 ITEMS  

2FJ-00005-OFFICE PRO PLUS EDUCATION ALNG LSA OLV E1Y ACAD ENTERPRISE | KW5-00359-WIN DEVICE EDU ALNG UPGRADE SA OLV E 1 Y ACAD ENT

Office 365 is used for online training of master's degree candidates studying within the framework of the EMINReM project. It provides a modern, flexible and secure learning environment, including tools for collaboration, creation of educational content and communication. This allows students and teachers to work from any device, effectively share files and communicate, and provides the administration of educational institutions with tools for management and security.

DONETSK NATIONAL TECHNICAL UNIVERSITY

Specialty:

MINING AND OIL & GAS TECHNOLOGIES

Educational and professional program:

Mining

Profile:

**Eco-Mining Engineering and Innovative
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Duration / Credits:

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Language of instruction:

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Application Period:

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(April-May — registration for Single Entry Exam)



Tuition fees:

3350 UAH/mon | full-time study
2000 UAH/mon | part-time study



Scholarship:

2500 UAH/mon
(ranking evaluation)

Programme Structure

It is organised into three semesters and accounts for 90 ECTS or 30 ECTS per semester.

The second level of higher education in Mining Engineering is intended to strengthen existing competencies and advance knowledge in specialized engineering fields. The program fosters analytical thinking, enabling students to diagnose problems in industrial processes, develop hypotheses, and carry out initial investigations for their validation. Special attention is given to the use of contemporary applied software, such as Datamine, Leapfrog Geo, Micromine.

Mining (Educational and professional program, 1,5 years)

List of obligatory disciplines | Year 1

- **Clean Technologies for Open-pit Mining (5 ECTS)***
- Design and Reconstruction of Mining Enterprises (6 ECTS)
- **Mineral Resources Exploration and Assessment (6 ECTS)***
- Development of Mineral Deposits in Difficult Mining and Geological Conditions (6 ECTS)
- Promising Technologies of Mining (7 ECTS)
- Theory and Practice of Scientific Research (3 ECTS)
- Labor Protection and Industrial Safety (4 ECTS)
- **Resources Modelling and Evaluation (7 ECTS)***
- **Problems and Innovations in the Process Chain of Mineral Resources (8 ECTS)***
- **Gamification in Eco-Mining (8 ECTS)***

**Disciplines implemented within the framework of the EMINReM project*

DONETSK NATIONAL TECHNICAL UNIVERSITY

Specialty:

ECOLOGY

Educational and professional program:

Ecology

Profile:

**Eco-Mining Engineering and Innovative
Natural Resources Management (EMINReM)**Programme
detailsMore
information
about
applying

Duration / Credits:

1,5 years / 90 ECTS

Entry requirements:

The programme is aimed at candidates who have a bachelor's degree preferably in Ecology.



Tuition fees:

**3350 UAH/mon | full-time study
2000 UAH/mon | part-time study**

Language of instruction:

Ukrainian

Application Period:

**June-July
(April-May — registration
for Single Entry Exam)**

Scholarship:

**2500 UAH/mon
(ranking evaluation)**

Programme Structure

It is organised into three semesters and accounts for 90 ECTS or 30 ECTS per semester.

The second cycle of higher education in Ecology is aimed at consolidating previously acquired knowledge and skills, while advancing expertise in specialized engineering and environmental disciplines. The program places strong emphasis on understanding and managing environmental impacts of industrial activities, sustainable use of natural resources, and the application of environmentally sound technologies. It develops advanced analytical competencies, enabling graduates to identify and critically assess environmental challenges within technological processes, formulate scientifically grounded hypotheses, and conduct initial research to verify or refute them in the context of environmental protection and sustainable development.

Ecology (Educational and professional program, 1,5 years)

List of obligatory disciplines | Year 1

- Industrial Waste Management, Resource Recovery and Recycling Technologies (5 ECTS) *
- Assessment of Anthropogenic Impact on the Environment (8 ECTS)
- Geoinformation Systems in Ecology (7 ECTS)
- Environmental Assessment and Inventory Techniques for Mining Industry (6 ECTS)*
- Theory and Practice of Scientific Research (3 ECTS)
- Sustainable Development Strategy (6 ECTS)
- Creativity, Innovation, Leadership and Entrepreneurship (5 ECTS)*
- Introduction to the Circular Economy, Economics and Management of Natural Resources (5 ECTS)*
- Labor Safety in Industry (3 ECTS)
- Implementation of Risk Assessment Methods for Occupational Health and Safety (5 ECTS)*
- Environmental and Economic Justification of Technological Solutions (7 ECTS)

*Disciplines implemented within the framework of the EMINReM project

DONETSK NATIONAL TECHNICAL UNIVERSITY

Specialty:

CHEMICAL TECHNOLOGIES AND ENGINEERING

Educational and professional program:

Chemical Technologies and Engineering

Profile:

Eco-Mining Engineering and Innovative Natural Resources Management (EMINReM)

Programme
detailsMore
information
about
applying

Duration / Credits:

1,5 years / 90 ECTS



Language of instruction:

Ukrainian



Entry requirements:

The programme is aimed at candidates who have a bachelor's degree preferably in Chemical Technologies and Engineering.



Application Period:

June-July
(April-May — registration for Single Entry Exam)



Tuition fees:

3350 UAH/mon | full-time study
2000 UAH/mon | part-time study



Scholarship:

2500 UAH/mon
(ranking evaluation)

Programme Structure

It is organised into three semesters and accounts for 90 ECTS or 30 ECTS per semester.

The second level of higher education in Chemical Technologies and Engineering builds on previously acquired knowledge and skills while deepening expertise in chemical processes, engineering, and environmental protection. The program covers areas such as fossil fuel processing, carbon materials and nanotechnology, computer-based process control, and industrial safety.

It focuses on the efficient and responsible use of mineral resources, environmentally friendly technologies, and the prevention of environmental pollution, especially water contamination related to mining and processing. Students also gain skills in plant design, research methods, and sustainable project management.

The program helps students develop analytical thinking to identify technological and environmental challenges, propose solutions, and carry out research for more sustainable industrial processes.

Chemical Technologies and Engineering (Educational and professional program, 1,5 years)

List of obligatory disciplines | Year 1

- Theory and Practice of Scientific Research (3 ECTS)
- Labor Protection and Industrial Safety (3 ECTS)
- Computer Control in Chemistry and Chemical Technology (7 ECTS)
- Technology of Carbon Coke Production (11 ECTS)
- Rational Use of Mineral Resources (7 ECTS)*
- Design of Fossil Fuel Processing Plants and Use of Computer Technologies (6 ECTS)
- Production of Carbon Nanomaterials and Nanotechnology (5 ECTS)
- Sustainable Business and Project Management (5 ECTS)*
- Prevention of the water resources contamination in the extraction of natural stone and ore (6 ECTS)*
- Advanced Mineral Processing for Eco-Mining (7 ECTS)*

*Disciplines implemented within the framework of the EMINReM project

DONETSK NATIONAL TECHNICAL UNIVERSITY



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9 Shevchenka Str.,
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✉ Yevgen Zbykovskyy zeixtt@gmail.com

COMPUTERS



9 ITEMS  

MONOBLOCK ASUS V241EAK-BA193M

Monoblocks ASUS V241EAK-BA193M are used in EMINReM Labto support experiments, modeling, data analysis, and the educational process within the project. It helps automate knowledge assessment and ensures fast, accurate evaluation of student performance. It is used in teaching disciplines for master's students in eco-mining, chemical technologies, industrial ecology, and environmental protection, providing a modern and efficient workstation for both theoretical and practical training.



5 ITEMS  

LAPTOPS HP PROBOOK 430 G8

HP ProBook 430 G8 laptops are used in VR labs and for online student learning. Their high performance enables them to solve problems using specialized applications, processing large data sets, modeling, and simulations. These laptops are also used during field training for practical work and data collection using METALYSER and Metalometer Deluxe HM2000 laboratory equipment for chemical field experiments.

PERIPHERALS



5 ITEMS  

MOUSE LOGITECH M350S WIRELESS GRAPHITE

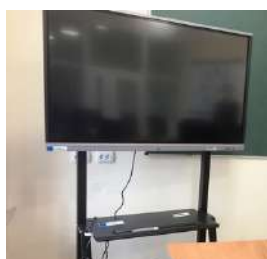
Wireless mouse Logitech M350s Graphite is used together with the HP ProBook 430 G8 laptops to provide comfortable, precise and efficient interaction with educational and modeling software. Their compact design, reliable wireless connection and long battery life ensure stable work both in VR laboratories and during field activities.



MULTIFUNCTIONAL DEVICE CANON I-SENSYS MF443DW

The Canon i-SENSYS MF443DW multifunctional device is used to support the educational and administrative processes within the project by providing fast, reliable and high-quality printing, scanning and copying. The device is used for preparing educational materials, distributing project documentation and digitizing data. The device ensures smooth workflow in EMINReM Lab, enabling quick access to printed materials, seamless sharing of scanned documents and overall improvement of collaboration among students, lecturers and project staff.



INTERACTIVE PANEL 55" PRESTIGIO L SERIES

An Interactive Smart Board StarBoard FX-89WE2 for online teaching enhances interaction between lecturers and students, increasing the effectiveness of classes and improving material comprehension through multimedia tools and collaborative features. It enables the display of any educational content, supports real-time annotations, allows saving of lesson materials, and provides integration with virtual laboratories.



METALOMETER DELUXE HM2000

The Metalometer Deluxe HM2000 mini-laboratory is used within the EMINReM project to provide fast, precise and field-ready analysis of metal concentrations in environmental and mining-related samples. Its compact design and high measurement accuracy allow master students to conduct on-site assessments of water and material quality without the need for a full laboratory setup. The HM2000 supports reliable detection of key metals relevant to the project's tasks, enabling prompt data collection, verification of modelling results and effective monitoring of environmental conditions. For master students, this mini-laboratory offers a practical, efficient and portable solution that enhances analytical capabilities and strengthens activities carried out within the EMINReM project.

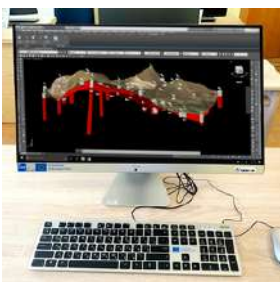
SOFTWARE

14 ITEMS 

MICROSOFT OFFICE 2021 FOR HOME AND BUSINESS



Microsoft Office 2021 for Home and Business is used within the framework of the EMINReM project to support coursework for master's degree candidates. It provides a comprehensive and reliable productivity suite — including Word, Excel, PowerPoint and Outlook — that enables students and teachers to create documents, analyze data, prepare presentations and manage communication from any suitable desktop or laptop. This ensures a stable, secure and familiar working environment, allows efficient offline and online work, easy file sharing and collaboration.



AUTOCAD WITH SPECIALIZED TOOLSETS

AutoCAD with Specialized Toolsets is used within the EMINReM project to support engineering design, spatial analysis and the preparation of technical documentation. Industry-specific toolsets enhance accuracy and efficiency in creating 2D/3D models, infrastructure layouts and standardized drawings. The software enables students and project engineers to produce precise designs, perform calculations and collaborate effectively through shared formats and coordinated workflows. For participating institutions, AutoCAD with Specialized Toolsets provides a reliable professional environment that improves the quality of technical work and supports key research and training activities within the project.

SATBAYEV UNIVERSITY

Specialty:

MINING ENGINEERING

Educational and professional program:

Mining Engineering

Profile:

Eco-Mining Engineering and Innovative Natural Resources Management (EMINReM)

Programme
detailsMore
information
about
applying

Duration / Credits:

2 years / 120 ECTS



Language of instruction:

Kazakh



Entry requirements:

The programme is aimed at candidates who have a bachelor's degree preferably in Mining Engineering.



Application Period:

June-July



Tuition fees:

1 500 000 KZT/year |
full-time study

Scholarship:

117 000 KZT/mon
(ranking evaluation)

Double Diploma possibilities:

Academic mobility programs and internship in TU Bergakademie Freiberg (Germany), Colorado Mining School (USA), Moscow State Mining University, St. Petersburg Mining University, and Beijing Mining and Technological University.

Programme Structure

The programme has a duration of 2 years and comprises 120 ECTS credits, with 60 ECTS credits completed in the first year. Training of specialists in mining engineering, open-pit and underground mineral extraction, and mine and underground construction. The program is accredited by the international agency ASIIN (Germany).

Graduates will be able to:

- interpret technological and design documentation, working drawings, technical specifications of mining and transport equipment, production passports, machinery and equipment certification records of mining enterprises, as well as information on materials and manufactured products.

Graduates will possess knowledge of:

- modern and promising technologies for the integrated development of mineral deposits with minimal losses and dilution
- methodologies for designing mining enterprises based on digital deposit models using information technologies
- innovative methods of drilling and blasting operations

Modular Educational Program 7M07203 "Mining Engineering", 2 years

List of obligatory disciplines | Year 1

- Foreign language (professional) (3 ECTS)
- Management Psychology (3 ECTS)
- History and philosophy of science (3 ECTS)
- Pedagogy of higher education (3 ECTS)
- Digital technology in mining SMART Mine (5 ECTS)

- Problems and Innovations in the Process Chain of Mineral Resources (5 ECTS)*
- Rational Technologies of vertical mining operations (5 ECTS)

List of obligatory disciplines | Year 2

- Clean Technologies for Open-pit Mining (5 ECTS)*

*Disciplines implemented within the framework of the EMINReM project

SATBAYEV UNIVERSITY

Specialty:

MINERAL PROCESSING

Educational and professional program:

Mineral processing

Profile:

Eco-Mining Engineering and Innovative
Natural Resources Management (EMINReM)



Programme
details



More
information
about
applying



Duration / Credits:
2 years / 120 ECTS



Language of instruction:
Kazakh



Entry requirements:

The programme is aimed at candidates who have a bachelor's degree preferably in Mineral processing. *CT disciplines:* Fundamentals of Mineral Processing, Flotation Methods.



Application Period:
June-July



Tuition fees:
1 500 000 KZT/year |
full-time study



Scholarship:
117 000 KZT/mon
(*ranking evaluation*)



Double Diploma possibilities:

Master's degree program: "Processes and devices for processing mineral and man-made raw materials", Tomsk Polytechnic University.

Scientific internships on academic mobility programs are held at Moscow Institute of Steel and Alloys, Tomsk Polytechnic University, Ural State Mining University, Colorado School of Mines (USA), Rhenish-Westphalian Technical University of Aachen (Germany), KTH Royal Institute of Technology (Sweden), Suleyman Demirel University (Turkey).

Programme Structure

The programme has a duration of 2 years and comprises 120 ECTS credits, with 60 ECTS credits completed in the first year. Program is aimed at training the specialists in the field of mineral processing who are able to develop and implement innovative, resource-saving and environmentally friendly technologies that comply with sustainable development principles. Graduates will be able to:

- Demonstrate professional knowledge and practical competencies in the processing of ores and technogenic raw materials for the mining, mineral processing, gold mining, and uranium industries
- Apply advanced knowledge of technological processes in mineral beneficiation and in the processing of mineral and technogenic raw materials
- Perform laboratory research, technological calculations, equipment selection, and design using modern computer technologies and software

Modular Educational Program 7M07226 "Mineral processing", 2 years

List of obligatory disciplines | Year 1

- Foreign language (professional) (3 ECTS)
- Management Psychology (3 ECTS)
- History and philosophy of science (3 ECTS)
- Pedagogy of higher education (3 ECTS)
- Modern technologies of enrichment and processing of mineral raw materials and technogenic waste (5 ECTS)

- Theory and practice of uranium ore and concentrates processing (5 ECTS)
- The theory of the separation of minerals in beneficiation processes (5 ECTS)
- **Advanced Mineral Processing for Eco-Mining (5 ECTS)***

List of obligatory disciplines | Year 2

- Process wastewater concentrations (5 ECTS)

*Disciplines implemented within the framework of the EMINReM project

SATBAYEV UNIVERSITY

Specialty:

MINE SURVEYING

Educational and professional program:

Mine Surveying

Profile:

Eco-Mining Engineering and Innovative Natural Resources Management (EMINReM)

Programme
detailsMore
information
about
applying

Duration / Credits:

2 years / 120 ECTS



Language of instruction:

Kazakh



Entry requirements:

The programme is aimed at candidates who have a bachelor's degree preferably in Mine Surveying. *CT disciplines:* Geodesy, General Course of Surveying.



Application Period:

June-July



Tuition fees:

1 500 000 KZT/year |
full-time study

Scholarship:

117 000 KZT/mon
(ranking evaluation)

Programme Structure

The programme has a duration of 2 years and comprises 120 ECTS credits, with 60 ECTS credits completed in the first year. Training of specialists in the field of spatial and geometric measurements in the earth bowels for constructing underground structures and mining, with subsequent display of measurement results on plans, maps and sections during mining and geological exploration.

Graduates will be able to:

- Use of GIS systems in subsurface use, master modern electronic and laser devices, digital instruments, satellite equipment, visualization technologies and optimization of production processes in surveying and specialized software sphere
- Master the skills of developing the plans and programs for organizing and applying the control systems, as well as adaptation of modern information technologies for geodetic and surveying work
- To ensure the development and rational use of the Earth's subsoil, organize the activities of mining enterprises, control the anthropogenic impact on the environment and perform a full range of engineering support for constructing civil and industrial structures

Modular Educational Program 7M07227 "Mine Surveying", 2 years

List of obligatory disciplines | Year 1

- Foreign language (professional) (3 ECTS)
- Management Psychology (3 ECTS)
- History and philosophy of science (3 ECTS)
- Pedagogy of higher education (3 ECTS)
- Laser scanning in open-pit mines (5 ECTS)
- Monitoring the condition of building and structure surfaces during the construction and operation of the subway system (5 ECTS)

- Mineral Resources Exploration and Assessment (5 ECTS)*

List of obligatory disciplines | Year 2

- Rational Technologies of vertical mining operations (5 ECTS)*
- Remote sensing of the Earth and natural resources (4 ECTS)
- Accuracy analysis of mine surveying works (5 ECTS)
- Visualization of geospatial data (5 ECTS)

*Disciplines implemented within the framework of the EMINReM project

SATBAYEV UNIVERSITY



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VIRTUAL CLASSROOM EQUIPMENT



13 ITEMS

PC: HP PROONEG9 I7

Monoblocks (All-in-One PCs) HP ProOne G9 (Intel Core i7), 13 units are used in the classroom to provide students with access to specialized software, digital learning resources, and practical assignments. These monoblocks enable efficient completion of educational tasks, including data processing, report and presentation preparation, participation in online classes, and use of simulation or virtual laboratory platforms. The availability of 13 units allows simultaneous work for an entire student group, ensuring equal access to digital tools and increasing the effectiveness of the learning process.



SMART BOARD INTERACTIVE PANEL LG 75TR3DK-B UHD IR-TYPE TOUCH

An Interactive Smart Panel LG 75TR3DK-B (75", UHD, IR-Type Touch) is used in the classroom to support interactive teaching, presentations, and collaborative learning. It strengthens communication between lecturers and students, increases lesson effectiveness, and improves comprehension through visual and multimedia content. The panel enables the display of educational materials, diagrams, videos, and presentations in high quality, supports real-time writing and annotation, and allows lesson notes to be saved for further use. Multi-touch functionality makes it possible for several students to work simultaneously on one screen, encouraging teamwork and active participation. The system can be integrated with online learning platforms and external devices, making it suitable for face-to-face, hybrid format.



VIRTUAL REALITY GLASSES DJI GOGGLES INTEGRA

Virtual Reality Glasses DJI Goggles Integra are used in the classroom to provide immersive visualization and interactive training experiences. They help students better understand spatial data, technical processes, and simulation-based scenarios by creating a realistic 3D learning environment. The device supports practical exercises with virtual and drone-related content, improves engagement during lessons, and strengthens applied skills through hands-on digital interaction. DJI Goggles Integra can be used for demonstrations, guided practice, and project-based learning, making classes more dynamic and increasing the effectiveness of technology-enhanced education.



AUTO TRACKING DISTANCE LEARNING CAMERA: PTZ-CAMERA

Auto-Tracking Distance Learning Camera (PTZ Camera) is used in the classroom to support hybrid and distance teaching by providing high-quality video capture and automatic speaker tracking. It improves lesson delivery for both in-person and remote students by keeping the lecturer or demonstration area in focus without manual camera control. The PTZ camera enables smooth pan-tilt-zoom operation, real-time streaming, and recording of lectures, practical sessions, and presentations. It supports clearer visual communication, increases student engagement in online formats, and ensures stable transmission of instructional content. This equipment is especially effective for interactive classes, demonstrations of board work or practical tasks, and the creation of reusable educational video materials, thereby enhancing the overall quality and accessibility of the learning process.

EMINReM LAB EQUIPMENT



HIGH PRECISION LEVELING KIT LS15 (COST OF CO-FINANCING SU)

High-Precision Leveling Kit LS15 — co-financed by Satbayev University (SU) and used for educational and practical training in mine surveying and geodesy. The kit is applied for high-accuracy leveling, elevation control, benchmark establishment, and processing of geodetic measurement data. It supports hands-on student training in precision surveying methods required for mining and engineering applications.

SOFTWARE



10 ACADEMIC LICENSES K-MINE

K-MINE is used in the classroom for teaching mining engineering, geological modeling, mine planning, and digital analysis of mineral deposits. It provides students with practical experience in professional industry software and supports the development of applied competencies required for modern mining projects. The availability of 10 academic licenses allows students to perform hands-on tasks during practical classes, course projects, and research assignments, improving the quality and effectiveness of practice-oriented learning.

ABYLKAS SAGINOV KARAGANDA TECHNICAL UNIVERSITY

Specialty:

MINING

Educational and professional program:

Underground and Open Pit Mining

Profile:

 Eco-Mining Engineering and Innovative
Natural Resources Management (EMINReM)

 Programme
details

 More
information
about
applying

 Duration / Credits:
2 years/120 ECTS

 Language of instruction:
Kazakh


Entry requirements:

The programme is aimed at candidates who have a bachelor's degree preferably in Mining Engineering.


 Application Period:
June-July

 Tuition fees:
641 700 KZT/year |
full-time study

 Scholarship:
117 000 KZT/mon
(ranking evaluation)


Double Diploma possibilities:

 Triple Diploma with Montanuniversität Leoben (Austria)
and TU Bergakademie Freiberg (Germany)

Programme Structure

The programme has a duration of 2 years and comprises 120 ECTS credits, with 60 ECTS credits completed in the first year. The programme is designed to train specialists capable of addressing current challenges in mining production, ensuring the rational use and processing of mineral resources in the context of sustainable development and environmental protection.

Graduates will be able to:

- Apply modern technologies, methods, and approaches to improve the efficiency of mineral extraction and processing
- Solve complex problems and challenges in the mining industry
- Manage the processes of recovery and processing of mineral resources and industrial waste with a focus on environmental sustainability
- Identify key problems within the technological chain of mineral resources
- Develop innovative solutions for responsible and sustainable subsoil use

Modular Educational Program 7M07203 "Mining", 2 years

List of obligatory disciplines | Year 1

- Foreign language (professional) (English/German/French) (4 ECTS)
- Management Psychology (3 ECTS)
- History and philosophy of science (4 ECTS)
- Pedagogy of higher education (4 ECTS)
- Methods of teaching technical disciplines (5 ECTS)
- Kazakh (Russian) language (professional) (5 ECTS)
- Rational Use of Mineral Resources (10 ECTS)*
- Sustainable Business and Project Management (5 ECTS)*
- Gamification in Eco-Mining (5 ECTS)*

- Industrial Waste Management, Resource Recovery and Recycling Technologies (5 ECTS)*
- Problems and Innovations in the Process Chain of Mineral Resources (5 ECTS)*

List of obligatory disciplines | Year 2

- Gamification in Eco-Mining (5 ECTS)*
- Industrial Waste Management, Resource Recovery and Recycling Technologies (5 ECTS)*
- Problems and Innovations in the Process Chain of Mineral Resources (5 ECTS)*
- Advanced Mineral Processing for Eco-Mining (5 ECTS)*

*Disciplines implemented within the framework of the EMINReM project

ABYLKAS SAGINOV KARAGANDA TECHNICAL UNIVERSITY

Specialty:

GEOLOGY AND EXPLORATION OF MINERAL DEPOSITS

Educational and professional program:

Prospecting and exploration of mineral deposits

Profile:

Eco-Mining Engineering and Innovative
Natural Resources Management (EMINReM)Programme
detailsMore
information
about
applying

Duration / Credits:

2 years/120 ECTS



Language of instruction:

Kazakh



Entry requirements:

The programme is aimed at candidates who have a bachelor's degree preferably in geology and mineral exploration.



Application Period:

June-July



Tuition fees:

641 700 KZT/year |
full-time study

Scholarship:

117 000 KZT/mon
(ranking evaluation)

Programme Structure

The program lasts 2 years and includes 120 ECTS credits, 60 of which are earned in the first year. The program is designed to train specialists capable of solving current problems in the field of geological exploration of the subsoil, ensuring effective forecasting, prospecting, exploration, and evaluation of mineral deposits in the context of sustainable development and reproduction of the mineral resource base.

Graduates will be able to:

- Apply modern geological, geophysical, and geochemical methods to predict and identify new deposits of solid minerals, hydrocarbons, and groundwater
- Resolve complex problems and challenges in the geological and economic assessment of deposits and reserve estimation
- Manage geological exploration processes at all stages — from regional studies to detailed exploration and deposit development — with an emphasis on economic efficiency and environmental safety
- Identify key challenges in the geological exploration process chain (including geospatial data processing, 3D modeling, and resource potential assessment)
- Develop innovative solutions for responsible and rational subsoil use, ensuring the renewal of the mineral resource base in accordance with sustainable development principles

Modular educational program 7M07202

"Geology and exploration of mineral deposits," 2 years

List of obligatory disciplines | Year 1

- Foreign language (professional) (English/German/French) (4 ECTS)
- Management Psychology (3 ECTS)
- History and philosophy of science (4 ECTS)
- Higher school pedagogics (4 ECTS)
- Methods of teaching technical disciplines (5 ECTS)
- Kazakh (Russian) language (professional) (5 ECTS)
- Resources Modelling and Evaluation (10 ECTS)*

- Introduction to the Circular Economy, Economics and Management of Natural Resources (10 ECTS)*
- Mineral Resources Exploration and Assessment (10 ECTS)*

List of obligatory disciplines | Year 2

- Creativity, Innovation, Leadership and Entrepreneurship (5 ECTS)*
- Mineral deposits of Kazakhstan (6 ECTS)*
- Geology and geochemistry of solid minerals (5 ECTS)*

*Disciplines implemented within the framework of the EMINReM project

ABYLKAS SAGINOV KARAGANDA TECHNICAL UNIVERSITY

Specialty:

LIFE SAFETY AND ENVIRONMENTAL PROTECTION

Educational and professional program:

Life Safety and Environmental Protection

Profile:

Eco-Mining Engineering and Innovative
Natural Resources Management (EMINReM)



Programme
details



More
information
about
applying



Duration / Credits:
2 years/120 ECTS



Language of instruction:
Kazakh



Entry requirements:

The programme is aimed at candidates who have a bachelor's degree preferably in Geology Engineering.



Application Period:
June-July



Tuition fees:
641 700 KZT/year |
full-time study



Scholarship:
117 000 KZT/year
(ranking evaluation)

Programme Structure

It is organised into four semesters and accounts for 120 ECTS. A life safety and environmental protection engineer possesses the skills, understanding, and conducts the following activities:

- Analysis of technogenic risk management systems and the effectiveness of mitigation measures
- Environmental impact assessment of planned activities
- Assessment of the need to implement and select best available techniques for production
- Analysis of occupational and environmental risk management systems at industrial facilities
- Develops measures to prevent pollution and treat wastewater
- Develops programs and plans to improve environmental and industrial safety

Students are familiar with modern manufacturing trends and conduct research using software (AI elements) and modern laboratory equipment.

Life safety and environmental protection (2 years)

List of obligatory disciplines | Year 1

- Foreign language (professional) (English) (4 ECTS)
- History and philosophy of science (4 ECTS)
- Higher school pedagogy (4 ECTS)
- Psychology of management (3 ECTS)
- Environmental Assessment and Inventory Techniques for Mining Industry 1 (5 ECTS)*
- Implementation of Risk Assessment Methods for Occupational Health and Safety 1 (5 ECTS)*
- Clean Technologies for Open-pit Mining 1,2 (10 ECTS)*
- Modern problems of industrial sanitation (5 ECTS)

- Methods and means of ensuring the safety of technical systems (5 ECTS)
- Management of scientific and innovative activities (5 ECTS)


List of obligatory disciplines | Year 2

- Environmental Assessment and Inventory Techniques for Mining Industry 2 (5 ECTS)*
- Prevention of the water resources contamination in the extraction of natural stone and ore (5 ECTS)*
- Implementation of Risk Assessment Methods for Occupational Health and Safety 2 (5 ECTS)*

*Disciplines implemented within the framework of the EMINReM project

ABYLKAS SAGINOV KARAGANDA TECHNICAL UNIVERSITY

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COMPUTERS



10 ITEMS

PC (CORE I5, DDR-4 16GB, SSD 512GB, GEFORCE GTX1650)

Computers with an Intel Core i5 processor, 16GB DDR4 RAM, a fast 512GB SSD, and a GeForce GTX 1650 graphics card provide a reliable platform for implementing the educational process within the EMINReM project. Combined with K-Mine software, this configuration enables integrated management of all devices, allows for interactive presentations, video conferences, and training sessions, and supports collaborative projects with high performance and ease of use.



3 ITEMS

LAPTOPS ASUS B1502CBA

The ASUS B1502CBA laptops serve as the central hub for all devices: interactive panels, Oculus VR headsets, the Logitech 989-000171 expansion microphone, and the IQView E6510 document camera. Combined with K-Mine software, they provide integrated operation, enabling interactive presentations, video conferences, training sessions, and collaborative educational or work projects with full control and ease of management.

MULTIMEDIA EQUIPMENT



DOCUMENT CAMERA IQVIEW E6510

IQView Document Camera E6510 is a high-quality document camera designed for educational and business presentations. It allows real-time display of books, documents, objects, and 3D models with clear detail and vibrant colors. The device features flexible control options and connectivity to computers and interactive panels, making it a convenient tool for teaching, video conferencing, and interactive presentations.



EXPANSION MICROPHONE LOGITECH 989-000171

Logitech Expansion Microphone 989-000171 is an add-on microphone designed to extend audio coverage in conference rooms. It delivers clear voice transmission and enhances sound quality for medium to large meeting spaces. The microphone connects to compatible Logitech conference systems, increasing voice pickup range and ensuring that all participants are heard clearly. It is an effective solution for professional video conferencing and collaborative work.



VIDEOCONFERENCING SYSTEM LOGITECH 960-001057

The videoconferencing system (Logitech) is used to ensure high-quality international communication among project partners, to organise hybrid training activities, virtual mobilities, webinars and dissemination events. The equipment will contribute to inclusiveness, sustainability and digital transformation objectives of the Erasmus+ programme.



VR GLASSES META QUEST 3

VR glasses Meta Quest 3 are an advanced virtual reality solution that delivers immersive 3D experiences for education, training, and entertainment. Equipped with high-resolution displays and precise motion tracking, they allow users to fully engage with interactive virtual environments in real time. The device supports a wide range of applications and content, providing intuitive controls and wireless freedom of movement. Meta Quest 3 VR headsets enhance engagement, improve learning efficiency, and open new possibilities for presentations, simulations, and interactive experiences.



INTERACTIVE PANEL DIGITOUCH T4-86

An interactive panel DigiTouch T4-86 is a modern all-in-one solution that combines a high-resolution touchscreen, built-in computer, and connectivity features in a single device. It delivers clear, vibrant visuals, supports multi-user interaction, and allows users to write, draw, run applications, and present materials directly on the screen. The panel integrates seamlessly into educational and business environments, supporting internet access, external devices, and video conferencing. It is an effective tool for presentations, collaboration, and increasing audience engagement.

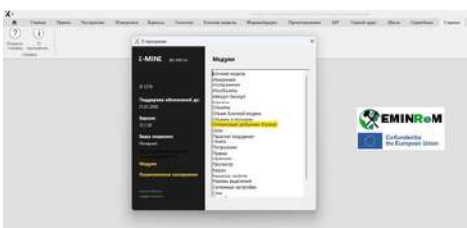
EDUCATIONAL EQUIPMENT



SIMULATOR OF A ROTARY DRILLING RIG (CO-FINANCING ASKTU)

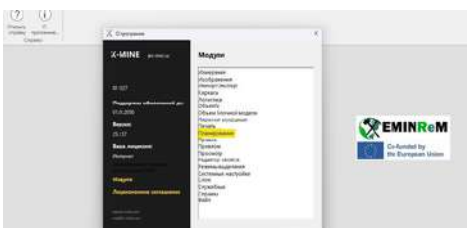
The Simulator of a Rotary Drilling Rig is an advanced training solution designed to provide realistic, hands-on experience in drilling operations. It replicates the controls, equipment, and procedures of a real rotary drilling rig, allowing students to practice safely in a controlled environment. Equipped with interactive displays and responsive controls, the simulator enables users to learn operational techniques, emergency procedures, and teamwork skills efficiently. This tool enhances learning outcomes, reduces training risks, and prepares operators for real-world drilling tasks with confidence.

SOFTWARE



"K-MINE", MODULES "OPTIMIZATION OF EXCAVATION BLOCKS"

The "Optimization of Mining Blocks" module is designed for the automated determination of optimal mining block boundaries in mining operations. The primary goal is to maximize the economic efficiency of ore extraction while considering geological, technological, and economic parameters.



"K-MINE", MODULES "OPEN-PIT MINE PLANNING"

Automation of mine planning processes for open-pit mining (quarries, open-pit coal mines) considering geological data, economic factors, and operational constraints. The "Open Pit Mine Planning" module in K-Mine is a powerful tool for comprehensive mine planning, process optimization, and improving the economic efficiency of open-pit mining operations.

TASHKENT STATE TECHNICAL UNIVERSITY NAMED AFTER ISLAM KARIMOV

Specialty:

METALLURGY

Educational and professional program:

Metallurgy

Profile:

Eco-Mining Engineering and Innovative
Natural Resources Management (EMINReM)Programme
detailsMore
information
about
applying

Duration / Credits:

2 years/120 ECTS



Language of instruction:

Uzbek



Entry requirements:

The programme is aimed at candidates who have a bachelor's degree preferably in Mining Engineering, Metallurgy.



Application Period:

June-July



Tuition fees:

10 313 200 sum/year |
full-time study

Scholarship:

517 000 sum/mon
(ranking evaluation)

Programme Structure

It is organised into four semesters and accounts for 120 ECTS or 30 ECTS per semester.

The second level of higher education of a Metallurgy is designed to contribute to the provision of personnel to society through the creation and application of innovative technologies for the sustainable development of the state based on scientific research at the national and international level, and the development of innovative education. Also, to become the best internationally recognized metallurgical training and scientific research center in the Central Asian region.

Metallurgy (Educational and professional program, 2 years)

List of obligatory disciplines | Year 1

- Methodology of scientific research (4 ECTS)
- New technologies in metallurgy (4 ECTS)
- Thermodynamics and kinetics of metallurgical processes (10 ECTS)
- Technological processes of ore processing (4 ECTS)
- Man-made waste processing technologies (6 ECTS)

List of obligatory disciplines | Year 2

- Methodology of teaching special subjects (4 ECTS)
- New technologies in metallurgy (4 ECTS)
- Technological processes of ore processing (6 ECTS)
- Sustainable Business and Project Management (4 ECTS)***

*Disciplines implemented within the framework of the EMINReM project

TASHKENT STATE TECHNICAL UNIVERSITY NAMED AFTER ISLAM KARIMOV

Specialty:

MINE AND UNDERGROUND ENGINEERING

Educational and professional program:

Mine and underground engineering

Profile:

Eco-Mining Engineering and Innovative
Natural Resources Management (EMINReM)



Programme
details



More
information
about
applying



Duration / Credits:

2 years/120 ECTS



Language of instruction:

Uzbek



Entry requirements:

The programme is aimed at candidates who have a bachelor's degree preferably in Mining Engineering, Metallurgy.



Application Period:

June-July



Tuition fees:

10 313 200 sum/year |
full-time study



Scholarship:

517 000 sum/mon
(ranking evaluation)

Programme Structure

It is organised into four semesters and accounts for 120 ECTS or 30 ECTS per semester.

The second level of higher education of a Mining of mineral deposits is designed to supply mature, educated, capable and up-to-date personnel to the mining enterprises in Uzbekistan, and at the same time to turn the mining enterprises into globally competitive enterprises. Also, to contribute to the provision of qualified personnel to the society through the development of innovative education and the creation and implementation of innovative technologies for the sustainable development of the state based on scientific research at the national and international level.

Mining of mineral deposits (Educational and professional program, 2 years)

List of obligatory disciplines | Year 1

- Methodology of scientific research (4 ECTS)
- Methodology of teaching special subjects (6 ECTS)
- Clean technologies in open pit mining (12 ECTS)***
- Blasting technologies and safety in mining operations (6 ECTS)
- Theoretical basis of design of mining enterprises (4 ECTS)*

- Creativity, Innovation, Leadership and Entrepreneurship in mining (6 ECTS)***

List of obligatory disciplines | Year 2

- Scientific basis of rational use of mining resources and their protection (4 ECTS)
- Theoretical basis of design of mining enterprises (6 ECTS)

**Disciplines implemented within the framework of the EMINReM project*

TASHKENT STATE TECHNICAL UNIVERSITY NAMED AFTER ISLAM KARIMOV

Specialty:

MINING OF MINERAL DEPOSITS

Educational and professional program:

Mining of mineral deposits

Profile:

Eco-Mining Engineering and Innovative
Natural Resources Management (EMINReM)Programme
detailsMore
information
about
applying

Duration / Credits:

2 years/120 ECTS



Language of instruction:

Uzbek



Entry requirements:

The programme is aimed at candidates who have a bachelor's degree preferably in Mining Engineering, Metallurgy.



Application Period:

June-July



Tuition fees:

10 313 200 sum/year |
full-time study

Scholarship:

517 000 sum/mon
(ranking evaluation)

Programme Structure

It is organised into four semesters and accounts for 120 ECTS or 30 ECTS per semester.

The second level of higher education of Mine and underground engineering is designed to Central Asia's best internationally recognized, strong mineral geology, research and exploration training and installation in a research and development center focused on this field. Also, to contribute to the provision of highly qualified personnel to the society through the creation and implementation of innovative technologies for the sustainable development of our country and the development of innovative education, based on national and international scientific research.

Mine and underground engineering (Educational and professional program, 2 years)

List of obligatory disciplines | Year 1

- Methodology of scientific research (4 ECTS)
- Physical processes in geotechnology (12 ECTS)
- Rational use of mineral resources (4 ECTS)*
- Implementation of risk assessment methods for occupational health and safety (6 ECTS)*
- Digital technologies in markscheder work (6 ECTS)

List of obligatory disciplines | Year 2

- Methodology of teaching special subjects (4 ECTS)
- Implementation of risk assessment methods for occupational health and safety (6 ECTS)*

*Disciplines implemented within the framework of the EMINReM project

TASHKENT STATE TECHNICAL UNIVERSITY NAMED AFTER ISLAM KARIMOV



Tashkent State Technical University named after Islam Karimov, Faculty of Geology-Prospecting and Mining-Metallurgy, Room 58, 2 University Street, Tashkent, Uzbekistan



Nasirkhojaev Sardor sardornosirxojayev77@gmail.com

COMPUTERS & SERVERS



3 ITEMS

LENOVO THINKBOOK 15 G2 ITL LAPTOP

Primarily a business laptop designed for professionals and small businesses, focusing on productivity and remote work with its 11th Gen Intel processing, optimized conferencing features, and strong connectivity. Its purpose is to provide a powerful yet portable and stylish tool for on-the-go or home-based business use.



10 ITEMS

LENOVO IDEACENTRE AIO 3 24ITL 6 MONOBLOCK

A compact, all-in-one desktop computer designed for everyday home and office tasks like web browsing, email, document creation, and media consumption. It integrates the computer components into a single, sleek unit with a 24-inch display, making it a space-saving solution that is ideal for users who want a clean and clutter-free workspace.



DELL EMC POWEREDGE T40 SERVER

A foundational server designed for small businesses to handle common workloads like file consolidation, storage, and sharing, as well as applications such as file and print or mail and messaging.

MULTIMEDIA EQUIPMENT



PTZ LOGITECH GROUP CC3500E

To provide a plug-and-play video conferencing system for medium to large meeting rooms, enabling high-definition video and clear audio for collaboration. It allows users to host video meetings by connecting a computer via USB and supports a wide range of video conferencing applications. Key features include a pan/tilt/zoom camera, full-duplex speakerphone, and optional expansion microphones to accommodate up to 20 people.



INTERACTIVE PANEL LG 65" LG 65TR3BF

A smart display designed for interactive collaboration in corporate or educational settings, featuring a 4K UHD touchscreen for detailed visuals, multi-touch and stylus support for writing, and built-in connectivity for wireless screen sharing from up to 30 mobile devices.

TECHNICAL TRAINING



AA-7000-DOUBLE-BEAM ATOMIC ABSORPTION SPECTROMETER

To accurately measure the concentration of specific metal elements in a sample. It is used in fields like environmental science, food safety, and pharmaceuticals for both high-sensitivity furnace and routine flame analysis, with features that ensure high quality and efficiency in a laboratory setting.



DJI GOGGLES V2

To provide an immersive and high-definition First-Person View (FPV) experience for flying DJI drones, enabling users to see the aerial feed as if they were inside the cockpit. Key functions include delivering a low-latency video signal, supporting long-range transmission, and offering a user-friendly interface for controlling the drone and adjusting settings.



WGL-625B DRYING CABINE

Forced-air drying oven used for applications like drying, curing, melting, and heating in industrial, scientific, and medical settings. Its purpose is to provide a controlled environment for these processes, which can include drying laboratory glassware, equipment, or other materials for accurate testing and experimentation.



SARTORIUS BCE224I-IS ENTRIS II ANALYTICAL BALANCE

A precision instrument designed for weighing small samples with high accuracy in a laboratory setting. Its purpose includes performing various basic laboratory tasks, such as weighing, counting, density determination, and percentage calculations, with integrated applications to enhance efficiency and ensure accurate, reproducible results.

NAVOI STATE UNIVERSITY OF MINING AND TECHNOLOGIES

Specialty:

MINING MINERAL DEPOSITS

Educational and professional program:

Mining Engineering

Profile:

Eco-Mining Engineering and Innovative
Natural Resources Management (EMINReM)[Programme
details](#)[More
information
about
applying](#)Duration / Credits:
2 years/120 ECTSLanguage of instruction:
Uzbek

Entry requirements:

The programme is aimed at candidates who have a bachelor's degree preferably in Mining Engineering.

Application Period:
June-JulyTuition fees:
11 million sum/yearScholarship:
800 EUR/mon
per student

Double Diploma possibilities:

Triple Diploma with Montanuniversität Leoben (*Austria*)
and TU Bergakademie Freiberg (*Germany*)

Programme Structure

The program lasts two years and comprises 120 ECTS credits, 30 of which are earned in the first year.

The program is designed to train specialists capable of solving current problems in the mining industry, as well as specialists in technology, mechanization, and open-pit mining organization. They will also acquire skills in calculating key quarry parameters, key mining production processes, and development system parameters, as well as methods for assessing and selecting deposit opening methods, ensuring the rational use and processing of mineral resources in the context of sustainable development and environmental protection. Graduates will be able to:

- Apply modern technologies, methods, and approaches to improve the efficiency of mineral extraction and processing
- Solve complex problems and challenges in the mining industry
- Manage the processes of recovery and processing of mineral resources and industrial waste with a focus on environmental sustainability
- Identify key issues in the mineral resource extraction process chain
- Develop innovative solutions for the responsible and sustainable use of the subsoil

Modular educational program 70720801 - Mining mineral deposits, 2 years

List of obligatory disciplines | Year 1

- Research methodology (4 ECTS)
- Industrial Waste Management. Resource Recovery and Recycling Technologies (6 ECTS)*
- Rational Use of Mineral Resources (4 ECTS)*
- Clean Technologies for Open-pit Mining (14 ECTS)*
- Theoretical foundations of blasting technology and safety in open-pit mining (6 ECTS)
- Sustainable Business and Project Management (6 ECTS)*

- Introduction to the Circular Economy. Economics and Management of Natural Resources (6 ECTS)*

List of obligatory disciplines | Year 2

- Creativity. Innovation, Entrepreneurship Leadership (4 ECTS)*
- Environmental Assessment and Inventory Techniques for Mining Industry (10 ECTS)*
- Problems and Innovations in the Process Chain of Mineral Resources (4 ECTS)*
- Digital technologies in mining (4 ECTS)

*Disciplines implemented within the framework of the EMINReM project

NAVOI STATE UNIVERSITY OF MINING AND TECHNOLOGIES

Specialty:

**MINE AND UNDERGROUND
MINING ENGINEERING**

Educational and professional program:

Mining Engineering

Profile:

Eco-Mining Engineering and Innovative
Natural Resources Management (EMINReM)



[Programme
details](#)



[More
information
about
applying](#)



Duration / Credits:
2 years/120 ECTS



Language of instruction:
Uzbek



Entry requirements:

The programme is aimed at candidates who have a bachelor's degree preferably in Mining Engineering.



Application Period:
June-July



Tuition fees:
11 million sum/year



Scholarship:
800 EUR/mon
per student



Double Diploma possibilities:

Triple Diploma with Montanuniversität Leoben (Austria)
and TU Bergakademie Freiberg (Germany)

Programme Structure

The program lasts two years and comprises 120 ECTS credits, 30 of which are earned in the first year.

The specialist program «Mine and underground mining engineering» is designed to train specialists with competencies in underground structure construction and mine operation. Students study in-depth the principles and methods of constructing mine and underground structures, mastering technologies and methods for their reinforcement, and the fundamentals of underground safety. Key attention is paid to understanding the geological and geomechanical properties of deposits, mining engineering and technology, and the design and modernization of mine facilities. Graduates are prepared to develop and implement innovative solutions in mine and underground construction, ensuring the efficient and safe operation of mining facilities.

**Modular educational program 70720802 - Mine and underground mining engineering
(Educational and professional program, 2 years)**

List of obligatory disciplines | Year 1

- Research methodology (4 ECTS)
- Industrial Waste Management. Resource Recovery and Recycling Technologies (6 ECTS)*
- Rational Use of Mineral Resources (4 ECTS)*
- Theoretical foundations of underground mining technology (6 ECTS)
- Theoretical foundations of blasting technology and safety in open-pit mining (6 ECTS)
- Sustainable Business and Project Management (6 ECTS)*

- Introduction to the Circular Economy. Economics and Management of Natural Resources (6 ECTS)*

List of obligatory disciplines | Year 2

- Mineral Resources Exploration and Assessment (4 ECTS)*
- Environmental Assessment and Inventory Techniques for Mining Industry (10 ECTS)*
- Problems and Innovations in the Process Chain of Mineral Resources (4 ECTS)*
- Digital technologies in mining (4 ECTS)

*Disciplines implemented within the framework of the EMINReM project

NAVOI STATE UNIVERSITY OF MINING AND TECHNOLOGIES

Specialty:

**THE TECHNOLOGY OF MINING,
ENRICHMENT, AND PROCESSING
OF ORES OF RARE AND RADIOACTIVE METALS**

Educational and professional program:

Mining Engineering

Profile:

Eco-Mining Engineering and Innovative
Natural Resources Management (EMINReM)



[Programme
details](#)



[More
information
about
applying](#)



Duration / Credits:
2 years/120 ECTS



Language of instruction:
Uzbek



Entry requirements:

The programme is aimed at candidates who have a bachelor's degree preferably in Mining Engineering.



Application Period:
June-July



Tuition fees:
11 million sum/year



Scholarship:
**800 EUR/mon
per student**



Double Diploma possibilities:

Triple Diploma with Montanuniversität Leoben (*Austria*)
and TU Bergakademie Freiberg (*Germany*)

Programme Structure

The specialist program is designed to train specialists in modern technologies for producing rare metals and their compounds using natural, secondary, and man-made raw materials from Uzbekistan, as well as chemical concentrates of natural uranium.

Master's students study rare metal and nuclear technologies, processing various types of raw materials, chemical enrichment methods for ore concentrates of rare and radioactive elements, low-waste, resource-saving process flowsheets for the nuclear industry, and the utilization of resources released during conversion (fluorine, waste uranium, etc.).

Modular educational program 70722401 - The technology of mining, enrichment, and processing of ores of rare and radioactive metals. (Educational and professional program, 2 years)

List of obligatory disciplines | Year 1

- Research methodology (4 ECTS)
- Methods of teaching special subjects (6 ECTS)
- **Industrial Waste Management. Resource Recovery and Recycling Technologies (8 ECTS)***
- Theoretical Foundations of In-Situ Leaching Technology for Rare and Radioactive Metals (8 ECTS)
- **Rational Use of Mineral Resources (6 ECTS)***
- **Prevention of the water resources contamination in the extraction of natural stone and ore (6 ECTS)***

- **Advanced Eco-processing of minerals for mining (8 ECTS)***

List of obligatory disciplines | Year 2

- **Implementation of Risk Assessment Methods for Occupational Health and Safety (10 ECTS)***
- **Mineral Resources Exploration and Assessment (10 ECTS)***
- **Resources Modelling and Evaluation (4 ECTS)***
- Gamification in Eco-Mining (4 ECTS)

**Disciplines implemented within the framework of the EMINReM project*

NAVOI STATE UNIVERSITY OF MINING AND TECHNOLOGIES

Specialty:

METALLURGIYA

Educational and professional program:

Engineering work

Profile:

Eco-Mining Engineering and Innovative
Natural Resources Management (EMINReM)[Programme
details](#)[More
information
about
applying](#)Duration / Credits:
2 years/120 ECTSLanguage of instruction:
Uzbek

Entry requirements:

The programme is aimed at candidates who have a bachelor's degree preferably in Mining Engineering.

Application Period:
June-JulyTuition fees:
11 million sum/yearScholarship:
800 EUR/mon
per student

Double Diploma possibilities:

Triple Diploma with Montanuniversität Leoben (*Austria*)
and TU Bergakademie Freiberg (*Germany*)

Programme Structure

It is organised into four semesters and accounts for 120 ECTS or 30 ECTS per semester.

The second level of higher education of a Metallurgy is designed to contribute to the provision of personnel to society through the creation and application of innovative technologies for the sustainable development of the state based on scientific research at the national and international level, and the development of innovative education. Also, to become the best internationally recognized metallurgical training and scientific research center in the Central Asian region.

Modular educational program 70712101 - Metallurgiya
(Educational and professional program, 2 years)

List of obligatory disciplines | Year 1

- Methodology of scientific research (4 ECTS)
- New technologies in metallurgy (4 ECTS)
- Thermodynamics and kinetics of metallurgical processes (10 ECTS)
- Technological processes of ore processing (4 ECTS)
- Man-made waste processing technologies (6 ECTS)

List of obligatory disciplines | Year 2

- Methodology of teaching special subjects (4 ECTS)
- Technological processes of ore processing (6 ECTS)
- New technologies in metallurgy (4 ECTS)
- **Sustainable Business and Project Management (4 ECTS)***

**Disciplines implemented within the framework of the EMINReM project*

NAVOI STATE UNIVERSITY OF MINING AND TECHNOLOGIES

Specialty:

MINERAL PROCESSING

Educational and professional program:

Engineering work

Profile:

Eco-Mining Engineering and Innovative
Natural Resources Management (EMINReM)[Programme
details](#)[More
information
about
applying](#)

Duration / Credits:

2 years/120 ECTS



Language of instruction:

Uzbek



Entry requirements:

The programme is aimed at candidates who have a bachelor's degree preferably in Mining Engineering.



Application Period:

June-July



Tuition fees:

11 million sum/year

Scholarship:
800 EUR/mon
per student

Double Diploma possibilities:

Triple Diploma with Montanuniversität Leoben (*Austria*)
and TU Bergakademie Freiberg (*Germany*)

Programme Structure

It is organised into four semesters and accounts for 120 ECTS or 30 ECTS per semester.

The second level of higher education of a Metallurgy is designed to contribute to the provision of personnel to society through the creation and application of innovative technologies for the sustainable development of the state based on scientific research at the national and international level, and the development of innovative education. Also, to become the best internationally recognized metallurgical training and scientific research center in the Central Asian region.

Modular educational program 70720803 - Mineral processing
(Educational and professional program, 2 years)

List of obligatory disciplines | Year 1

- Research methodology (4 ECTS)
- Methodology of scientific research (6 ECTS)
- Technology of enrichment of non-ferrous metal ores (12 ECTS)
- Geochemical and biochemical methods of mineral enrichment (6 ECTS)
- Theory and machines of mineral particle separation processes (10 ECTS)
- Technological control of enrichment processes (6 ECTS)

- Implementation of Risk Assessment Methods for Occupational Health and Safety (4 ECTS)*

List of obligatory disciplines | Year 2

- Methodology of teaching special subjects (4 ECTS)
- Technological processes of ore processing (6 ECTS)
- New technologies in metallurgy (4 ECTS)
- Sustainable Business and Project Management (4 ECTS)*

**Disciplines implemented within the framework of the EMINReM project*

NAVOI STATE UNIVERSITY OF MINING AND TECHNOLOGIES



Navoi State University of Mining and
Technologies, Mining Faculty, Room 402,
76V Galaba Avenue, Navoi, Uzbekistan



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COMPUTERS & SERVERS

MONOBLOCK SMART H610 CORE™ I5-1235/ DDR4 16GB 2666HZ/ M2 512GB / 27" FLAT

13 ITEMS



Monoblok The Smart All-in-One PC is designed for a compact workspace, combining a monitor and computer in a single unit. It's ideal for office tasks, studying, multimedia, and POS systems, saving space by eliminating the need for a system unit. This solution combines high performance with an aesthetically pleasing design. These monoblocks enable efficient completion of educational tasks, including data processing, report and presentation preparation, participation in online classes, and use of simulation or virtual laboratory platforms. The availability of 13 units allows simultaneous work for an entire student group, ensuring equal access to digital tools and increasing the effectiveness of the learning process.



LAPTOP HP ENVY X360 14- ES1013DX (14.0 FHD IPS TS | CORE 5-120U | DDR4 8GB | SSD 512GB)

HP Envy x360 14- ES1013DX (14.0 FHD IPS TS | Core 5-120U | DDR4 8GB | SSD 512GB) for VR labs provide high performance necessary for working with specialized applications, modeling and simulations. Laptops are also used during field events when capturing 360 video at production facilities, saving large files and transferring them online to specialized servers.



SERVER DELL POWEREDGE T40

The Dell PowerEdge T40 is a compact entry-level server designed for data consolidation, secure storage, file sharing, print management, and simple business applications, delivering reliability, security (TPM 2.0), and performance (Intel Xeon E-2224G processors) at a quiet level.

MULTIMEDIA EQUIPMENT



SMART BOARD PANEL: П3С-03

A smart display designed for interactive collaboration in corporate or educational settings, featuring a 4K UHD touchscreen for detailed visuals, multi-touch and stylus support for writing, and built-in connectivity for wireless screen sharing from up to 30 mobile devices.



3 ITEMS

ACOUSTIC SYSTEM / MICROPHONE SYSTEM: YEALINK CP700 UC WIRELESS

The videoconferencing system (Logitech) is used to ensure high-quality international communication among project partners, to organise hybrid training activities, virtual mobilities, webinars and dissemination events. The equipment will contribute to inclusiveness, sustainability and digital transformation objectives of the Erasmus+ programme.

VIRTUAL REALITY GLASSES: OCULUS META QUEST 2 256GB

2 ITEMS



VR glasses Oculus Meta Quest 2 256GB 3 are an advanced virtual reality solution that delivers immersive 3D experiences for education, training, and entertainment. Equipped with high-resolution displays and precise motion tracking, they allow users to fully engage with interactive virtual environments in real time. The device supports a wide range of applications and content, providing intuitive controls and wireless freedom of movement. Oculus Meta Quest 2 256GB headsets enhance engagement, improve learning efficiency, and open new possibilities for presentations, simulations, and interactive experiences.

LABORATORY EQUIPMENT



MULTIFUNCTIONAL GAS AND DUST DETEKTOR GT-1000SERIES

A multifunctional gas and dust detector is a safety device designed to simultaneously detect leaks, hazardous/flammable gases (usually) and dust levels in switchgear cabinets. It protects personnel by preventing explosions, poisoning, and suffocation in enclosed spaces.



GAS ANALYZER RIKEN KEIKI GX-6000

The RIKEN KEIKI GX-6000 portable gas analyzer (Riken Keiki brand) is a high-precision portable device designed to simultaneously monitor, measure, and signal the presence of up to 6 different hazardous gases, including flammable gases, oxygen, toxic gases, VOCs (volatile organic compounds), and benzene.



IR METER (THERMAL RADIATION RADIOMETER)

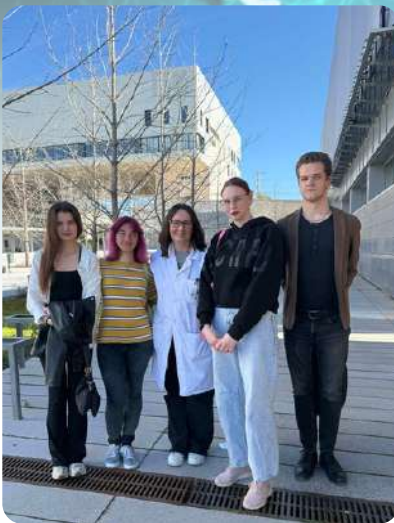
An IR meter (thermal radiation radiometer) is a portable device designed to measure radiance and heat flux density in the infrared range (thermal radiation intensity). It is used for sanitary and hygienic monitoring of the microclimate and for assessing heat loss.



AIR QUALITY METER METEOSCOP-M

The Meteoscop-M is a universal digital microclimate parameter meter designed for comprehensive environmental monitoring of residential, industrial, and outdoor spaces. It provides control of up to 8 parameters (temperature, humidity, air speed, pressure, TNS index) for sanitary and hygienic assessment, certification of workplaces and control of ventilation systems.

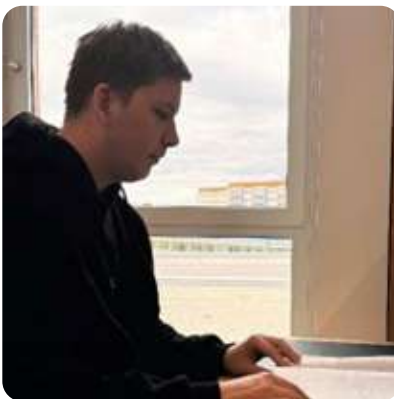
ACADEMIC MOBILITY OF STUDENTS



ZHYTOMYR STATE POLYTECHNIC UNIVERSITY

"In frames of "EMINReM" Erasmus Project I had opportunity for studies at the base of University of Jaén, Polytechnic School of Linares (Spain) during spring term 2026. At the time of study, I had a great opportunity to gain hands-on experience in sustainable mining practices and innovativ natural resource management. This international experience broadened my perspective on eco-friendly mining technologies and strengthened my skills in cross-cultural teamwork and research."

— Iryna **VERNER**, **EMINReM**
(Mine-surveying) **MSc student**



DNIPRO UNIVERSITY OF TECHNOLOGY

Danylo Vinivitin, Speciality – Surface Mining (184 Mining)

In 2025, student Danylo Vinivitin received a grant under the #EMINReM project for an internship at the Freiberg Mining Academy (Germany), the purpose of which is to conduct research as part of writing his own qualification thesis. The main part of the internship is devoted to the study and analysis of materials related to determining the stability of rocks in dumps during the development of iron ore deposits. For this, he can visit the university library, where the necessary scientific literature and technical sources from around the world are located. Participation in academic mobility under the EMINReM project allowed Danylo to complete his pre-degree internship tasks and successfully defend his thesis.



Oleksandra Mulyk, Speciality – Ecology (101 Ecology)

In 2025, student Oleksandra Mulyk completed an internship at the Freiberg Mining Academy under the #EMINReM project from #Erasmus+. The purpose of the internship is to familiarize herself with international experience in approaches to environmentally friendly mining. During the mobility, classes were attended in the direction of Ecological Development of Natural Resources. Oleksandra also spent part of her time in the library, where she had the opportunity to familiarize herself with many different materials in the Environmental direction.



DONETSK NATIONAL TECHNICAL UNIVERSITY

Milana Polska, Speciality – Chemical Technologies and Engineering

Purpose of the Internship is to collect materials for a comprehensive Master's thesis entitled: "Assessment of the Potential Use of Mine and Post-Mining Groundwater as a Source of Drinking Water Supply (Considering European Experience)."

Tasks:

- Gather general information on mine/groundwater, treatment possibilities, and research methods (including at UJA), focusing on water types and key quality parameters.
- Study methods of mine/groundwater analysis, including standard parameters and causes of regulatory limit exceedances.
- Review scientific works by UJA researchers on groundwater quality (articles, dissertations, reports).



Iryna Stanovova, Speciality – Ecology

Purpose of the Internship is to collect materials for a comprehensive Master's thesis entitled: "Assessment of the Potential Use of Mine and Post-Mining Groundwater as a Source of Drinking Water Supply (Considering European Experience)."

Tasks:

- Study mine/groundwater conditions, treatment options, and research methods (including at UJA), focusing on criteria for non-potability and water types unsuitable for treatment under Spanish standards.
- Analyze methodologies, including heavy metals considered, reasons for their selection, recommendations for parameter exceedances, and applicable standards (WHO, EU Directive).
- Review UJA research on groundwater quality (articles, dissertations, reports).



SATBAYEV UNIVERSITY

Nurlan Baizhumanov and Makhat Yernur, Speciality – Mining Engineering

From January 30 to February 28, 2026, Master's students from Satbayev University (Mining Engineering) completed an internship at Dumlupinar University within the EMINReM project. The internship focused on expanding academic knowledge, developing practical skills, and supporting professional growth. Students attended classes, explored laboratory facilities, and observed the application of theory in practice. They also received consultations on their thesis research, including structure, content, and methodology. Additionally, they gained hands-on experience with Micromine and Surfer software, enhancing skills in data analysis, modeling, and visualization. Overall, the internship provided valuable academic and international experience, strengthening both knowledge and practical competencies.





ABYLKAS SAGINOV KARAGANDA TECHNICAL UNIVERSITY

Kaiyrzhan Zeinep and Mukan Arailym, Specialty – Mining

From October 15 to December 15, 2025, Mining students completed an internship at Dumlupınar University within the EMINReM project. The internship aimed to develop practical and theoretical knowledge in mining engineering. Students studied mineral processing, observed separation methods in the laboratory, and completed a course in risk analysis focused on industrial and mining sectors. They also gained experience with Micromine software for technical drawing and mining design, and used the university library for research. Overall, the internship enhanced their professional skills, academic knowledge, and international experience.



TASHKENT STATE TECHNICAL UNIVERSITY NAMED AFTER ISLAM KARIMOV

Nominees for participation in academic exchange:

- **Valiev Jonibek, Specialty – Metallurgy (70711201)**
- **Mirzaliev Sharofidin, Specialty – Mineral processing engineering (70720803)**

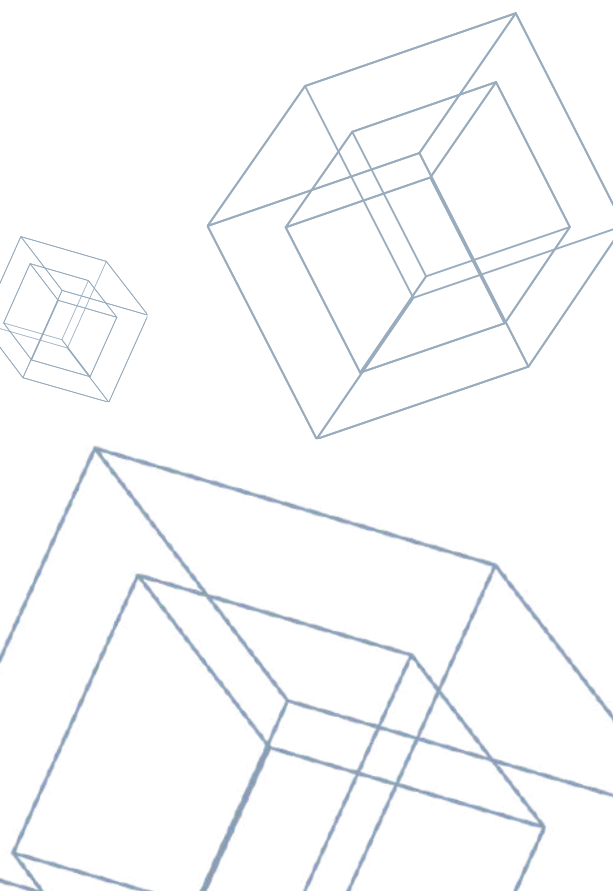


NAVOI STATE UNIVERSITY OF MINING AND TECHNOLOGIES

Mansurova Jasmina and Kuvondikov Kamol, Specialty – Mining

From October 15 to December 15, 2025, Mining students completed an internship at Dumlupınar University within the EMINReM project. The internship focused on developing practical and theoretical knowledge in mining engineering. Students studied mineral processing, observed separation methods in the laboratory, and completed a risk analysis course related to industrial and mining sectors. They also gained experience with Micromine software for technical drawing and mining design, and used the university library for research. Overall, the internship enhanced their professional skills, academic knowledge, and international experience.







**ZHYTOMYR POLYTECHNIC
STATE UNIVERSITY**



**FREIBERG UNIVERSITY OF
MINING AND TECHNOLOGY**



UNIVERSITY OF JAÉN



**KÜTAHYA DUMLUPINAR
UNIVERSITY**



**DNIPRO UNIVERSITY
OF TECHNOLOGY**



**DONETSK NATIONAL
TECHNICAL UNIVERSITY**



SATBAYEV UNIVERSITY



**NAVOI STATE UNIVERSITY OF
MINING AND TECHNOLOGIES**



**ABYLKAS SAGINOV KARAGANDA
TECHNICAL UNIVERSITY**



**TASHKENT STATE TECHNICAL
UNIVERSITY NAMED AFTER
ISLAM KARIMOV**

CONTACTS

