

## WEDNESDAY (20.10.2021.) – DAY 1<sup>st</sup>

### Main challenges and needs in innovative mineral exploration and robotization

#### Morning session

7:30-8:30	Breakfast
9:00-10:00	Check-in and registration
10:00 – 10:30	Welcome drink and snacks
10:30 – 11:00	Opening ceremony
11:00-11:45	<p>Lecture D1U1            General (EU) policy framework for need of innovative methods in mineral exploration  <i>Lecturer:</i> Assoc. Prof. Ferenc Madai  <i>Affiliation:</i> University of Miskolc - Faculty of Earth Science and Engineering, Institute of Mineralogy and Petrology</p>
<i>Coffee break (11:45-12:00)</i>	
12:00-13:10	<p>Lecture D1U2, Part 1<sup>st</sup>            Innovative solutions for and challenges in underwater spaces: sensor development, robotization  <i>Lecturer name:</i> Richárd Z. Papp  <i>Affiliation:</i> University of Miskolc / UNEXMIN Georobotics Ltd.</p>
<i>Lunch break (13:10-14:10)</i>	
<i>Afternoon session</i>	
14:10-15:30	<p>Lecture D1U2, Part 2<sup>nd</sup>            Innovative solutions for and challenges in underwater spaces: sensor development, robotization  <i>Lecturer name:</i> Richárd Z. Papp  <i>Affiliation:</i> University of Miskolc / UNEXMIN Georobotics Ltd.</p>
<i>Coffee break (15:30 -15:45)</i>	
15:45-17:15	<p>Lecture D1U3            Case studies: exploration of flooded underground spaces, the UNEXMIN-UNEXUP story, sea-floor exploration  <i>Lecturer name:</i> Assoc. Prof. Norbert Zajzon  <i>Affiliation:</i> University of Miskolc - Faculty of Earth Science and Engineering, Institute of Mineralogy and Petrology</p>
17:30-19:00	City tour
19:00	Welcome Dinner

Supported by

THURSDAY (21.10.2021.) – DAY 2<sup>nd</sup>

Remote-sensing- and sensor-based techniques and their application in the construction of 3D models

*Morning session*

7:30-8:30	Breakfast
9:00-10:10	<p>Lecture D2U1, Part 1<sup>st</sup>            Review of new analytical methodologies in exploration geochemistry  <i>Lecturer name:</i> PhD. István Márton  <i>Affiliation:</i> Stockwork Geoconsulting Ltd / Babeş–Bolyai University</p>
<i>Coffee break (10:10-10:20)</i>	
10:20-11:30	<p>Lecture D2U1, Part 2<sup>nd</sup>            Geochemical vectors in mineral exploration: integration, interpretation and modelling of high-precision multielement and hyperspectral datasets  <i>Lecturer name:</i> PhD. István Márton  <i>Affiliation:</i> Stockwork Geoconsulting Ltd / Babeş–Bolyai University</p>
<i>Coffee break (11:30-11:45)</i>	
11:45-13:15	<p>Lecture D2U2, Part 1<sup>st</sup>            Applications in modern geochemical exploration by using systematic sampling protocols, portable sensor-based devices, and remote sensing datasets; case study 1: targeting for Cu-Au epithermal system in remote areas  <i>Lecturer name:</i> PhD. István Márton  <i>Affiliation:</i> Stockwork Geoconsulting Ltd / Babeş–Bolyai University</p>
<i>Lunch break (13:15-14:15)</i>	
<i>Afternoon session</i>	
14:15-15:25	<p>Lecture D2U2, Part 2<sup>nd</sup>            Applications in modern geochemical exploration by using surface and drill hole multielement and spectral datasets; case study 2: 3D data integration and vectoring for high-grade ore zones in porphyry Cu-Au-Mo systems.  <i>Lecturer name:</i> PhD. István Márton  <i>Affiliation:</i> Stockwork Geoconsulting Ltd / Babeş–Bolyai University</p>
<i>Coffee break (15:25-15:40)</i>	
15:40-16:40	<p>Practical demo D2U3, Part 1<sup>st</sup>            Demonstration on portable geochemical devices and UAV-based remote sensing data acquisition and integration in 3D models  <i>Lecturer name:</i> Boglárka Anna Topa, Richárd Z. Papp  <i>Affiliation:</i> University of Miskolc / UNEXMIN Georobotics Ltd.</p>
<i>Coffee break (16:40-16:50)</i>	
16:50-17:50	<p>Practical demo D2U3, Part 2<sup>nd</sup>            Demonstration on portable geochemical devices and UAV-based remote sensing data acquisition and integration in 3D models  <i>Lecturer name:</i> Boglárka Anna Topa, Richárd Z. Papp  <i>Affiliation:</i> University of Miskolc / UNEXMIN Georobotics Ltd.</p>

FRIDAY (22.10.2021.) – DAY 3 <sup>rd</sup>	
Advanced geophysical data processing and geostatistical methods and their innovative applications for mineral exploration	
<i>Morning session</i>	
7:30-8:30	Breakfast
9:00-10:30	<b>Lecture D3U1</b> Advanced statistical analysis of multivariate (big) datasets <i>Lecturer name:</i> Prof. Norbert Szabo <i>Affiliation:</i> University of Miskolc, Faculty of Earth Science and Engineering, Institute of Geophysics and Geoinformatics
<i>Coffee break (10:30-10:45)</i>	
10:45-12:15	<b>Lecture D3U2</b> Inversion-based modelling for the interpretation of gravity, magnetic and geoelectric datasets <i>Lecturer name:</i> Endre Nádas <i>Affiliation:</i> University of Miskolc
<i>Lunch break (12:15-13:00) (Shorter)</i>	
<i>Afternoon session</i>	
13:00-14:30	<b>Lecture D3U3</b> Shallow geophysical investigations by combining seismic, geoelectric and direct-push logging methods. Near-surface structures <i>Lecturer name:</i> Prof. Norbert Szabo <i>Affiliation:</i> University of Miskolc, Faculty of Earth Science and Engineering, Institute of Geophysics and Geoinformatics
<i>Coffee break (14:30 – 14:40)</i>	
14:40-15:00	EIT RawMaterials activities in other regions
15:00-15:30	<i>Closing Ceremony</i>
<i>18:00 Dinner</i>	