Short Course in SEM-Based Automated Mineralogy

Fundamentals and Applications in Geosciences

University of Freiberg 16.-19.03.2026

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Metamorphic rock

Volcanic rock

Mineral concentrate

Short Course Programme Monday, 16.03.2026

8:30 – 9:00	Registration
9:00 – 9:30	Welcome, announcements, introduction of the speakers and audience (All)
9:30 – 10:15	Introduction 1: Physical background, What is an SEM? how does it work? Detectors (JK)
10:15 – 10:45	Introduction 2: Sample preparation From SEM to automated Mineralogy, (SG)
10:45 – 11:00	Coffee break
11:00 – 11:30	Introduction 3: Workflow, Measurement modes (SG)
11:30 – 12:30	Introduction 4: Data processing, Quality control (BG)
12:30 – 13:45	Lunch break
Applications 1:	
13:45 – 14:30	Processing in geometallurgy (KB)
14:30 – 15:00	Metamorphic Rocks (JK)
15:00 – 15:15	Coffee break
15:15 – 16:15	Magmatic rocks (JK)
16:15	Questions and Discussion

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ERZLABOR prepare | analyze | embrace

HIF

Short Course Programme Tuesday, 17.03.2026

9:00 – 10:30	Introduction 5: Instrumentation What systems exist? (KB)
10:30 – 10:45	Coffee break
10:45 – 12:00	Introduction to TIMA (TESCAN)
12:00 – 13:15	Lunch break
13:15 – 13:45	Walk to HIF
13:45 – 17:15	Lab Tour @ HIF: 3 groups I) TIMA (TESCAN) II) MLA/QEMSCAN (BG) III) Preparation (RW) IV) EPMA (JK) (45 min. each) + 5 min. for transfer of groups between labs after the second lab 10 minutes break
18:00	Dinner at the Stadtwirtschaft

Short Course Programme Wednesday, 18.03.2026

Applications 2:

9:00 – 9:45	Sediments (LS)
9:45 – 10:30	Exercise Sediments Part 1 (LS)
10:15 – 10:30	Coffee break
10:30 – 12:00	Exercise Sediments Part 2 (LS)
12:00 – 13:15	Lunch break

Applications 3:

13:15 – 14:00	Ore deposits (DS)
14:00 – 14:15	Coffee break
14:15 – 16:00?	Exercise Ore deposits (DS)
16:30 – 18:00	Guided tour to the famous mineral collection Terra Mineralia

Short Course Programme Thursday, 19.03.2026

9:00 – 10:30	Exercise Volcanic Rocks part 1 (JK+N.N.)
10:30 – 10:45	Coffee break
10:45 – 12:15	Exercise Volcanic Rocks part 2 (JK+N.N.)
12:15 – 13:15	Lunch break
13:15 – 14:15	Exercise Volcanic Rocks evaluation and comparison of the results (JK)
14:15 – 15:30	Coffee break with questions, discussion and concluding remarks (All)

Items you will need for the exercises:

- Hand lens
- Laptop / Tablet with Microsoft Excel, Word, and Power Point, a USB 3-port and an app to display JPG, TIFF and BMP files
- If available a copy of Deer, Howie, Zussman: Rock Forming Minerals

Venue

The short course will take place in the Institute for Mineralogy of the TU-Bergakademie Freiberg, Brennhausgasse 14, 09599 Freiberg. The registration is open on Monday 16th of March from 8:30 onwards. You will find the registration and the lecture hall in the first floor of the institute building.