Program sessions

On the following pages, you will find the program, structured into five thematic sessions. Descriptions of each session are provided here.

Education: Shaping Tomorrow's Professionals: Embracing Modern Education for a Future-Ready Workforce

This session explores innovative approaches to modernizing education and training in the mining and resources sector to prepare the next generation for complex technological, societal, and environmental challenges.

Part 1 focuses on **educational strategies, tools, and innovative teaching methods** that enable effective knowledge transfer and skills development. It covers strategic planning, industry-responsive curriculum design, immersive technologies, and modular learning formats.

Part 2 shifts the focus to **soft skills, communication, systemic thinking, and multi-stakeholder partnerships** that are essential for sustainable and holistic professional development in mining. Topics include the importance of communication skills, socio-economic aspects of beneficiation training, active learning for sustainability, and building collaborative innovation ecosystems.

Together, these two parts provide a comprehensive roadmap for educating **future-ready mining professionals** who are technically competent, socially aware, and prepared to thrive in an evolving industry.

Research, Development and Industry: Strengthening Academia–Industry Collaboration

This session explores how **closer collaboration between academia and industry** can address critical challenges in the mining sector. It starts by examining stakeholder landscapes and cultural dynamics, then explores the strategic role of academia in policy-making, technological innovation, and sustainability. Perspectives from Africa, Europe, Latin America, and Oceania provide global insight, before industry voices conclude with practical reflections — setting the stage for a dynamic panel discussion.

Research, Development and Industry: Innovative Technologies and Research for Sustainable Mining Practices

This session explores **cutting-edge solutions ranging from digital frameworks and smart algorithms to safety management and environmental protection**. By examining barriers to technology adoption, economic optimization, and climate adaptation strategies, we will showcase how the mining industry can transform operations through innovation while advancing sustainability goals. The session concludes with a focus on safety and risk management, emphasizing the vision of zero fatalities in mining operations. Together, these presentations highlight a holistic approach to creating a safer, more efficient, and environmentally responsible mining future.

Program sessions

Members Development: Mastering Digital Competencies

This session explores how **artificial intelligence is reshaping the mining sector** and legal frameworks through advanced digital education. It begins with a high-level introduction to the intersection of AI, mining, and law, then moves through the educational implications of AI integration: from industry-wide digital transformation, to the specific skills engineers need, and how academic institutions can deliver them. The session then presents real-world applications, showcasing how students are empowered through AI in learning environments. Finally, it dives into the practical use of Large Language Models (LLMs) in enhancing research communication and automating academic evaluation, with reflections on ethical and operational challenges.

Capacity Building: Fostering Global Connections: Advancing International Collaboration

This session explores how **international collaboration** serves as a powerful tool for capacity building in the mining and mineral industries across the SOMP global regions . It begins by reviewing the latest regional meeting held in Africa,followed by mapping the global landscape of mining education. It highlights impactful case studies of educational initiatives, addresses global challenges like critical mineral supply chains, and concludes with the industry's perspective on lifelong learning and workforce development needs.

Mining and Minerals Programs Sustainability: Program branding for the Mines of the Future

This session explores the **importance of branding** in mining and minerals education. Starting with an overview of the Sustainability Committee, it examines why branding matters and how the industry approaches re/branding. Through interactive activities and case studies, participants will learn how education programs are redefining their image to better engage stakeholders. The session concludes with a panel discussion sharing success stories and a hands-on workshop focused on SOMP branding.

Program 7th and 8th September

7th September

09:00 – 12:00	Council Meetings
12:00 – 14:00	Lunch
14:00 – 16:00	Committee Meetings + Lab Tours
18:00	Welcome Reception

8th September

07:30 – 08:30	Registration open and arrival networking
08:30 – 10:00	**Session 1: Opening Plenary**
10:00 – 10:30	Break

Session 2: Research, Development and Industry: Strengthening Academia–Industry Collaboration	
10:30 – 12:00	Overview of the Research, Development and Industry Committee, V. Karu, Estonian Business School; Estonia
	Mining industry business development and educational support – an Industrial Minerals example, F. Spachtholz, Baymag Inc., Germany
	Identification of all Potential Stakholders in the mining sector from a Cross-Cultural and Cross-Sectoral Perspective in Australia; C. Rodolaki, G. Barakos, J. Gamutan, S. Zaung Nau, Curtin University, Australia
	Enhancing Academia – Industry Partnership for Italy's Mining Policies; M. Cardu, G. Sabra, Politecnico di Torino, Italy
	A Review of ESG in Mining Across selected African countries from Africamaval Project: Role of Educational Institutions; M. Pillalamarry, H. Musiyarira, Namibia University of Science and Technology, Namibia
	Watergenics AISRAS: Real-Tim In Situ-Augumented Raman Spectroscopy for Acid-Mind-Drainage Monitoring – and how Universities can support Deep-Tech-Startup Development in the mining sector; B. Grafe, Tallinn University of Technology, Estonia and Watergenics GmbH, Germany
	Industry Perspective II (TBD)
	Panel Discussion: Shared Goals, Shared Growth: Rethinking Partnerships in Mining Innovation and Education
12:00 – 13:30	Lunch Break

Session 3: Mining and Minerals Programs Sustainability: Program branding for the Mines of the Future	
13:30 – 15:00	Overview of the Mining and Minerals Programs Sustainability Committee, E. Sarver, Virginia Tech, USA
	Who cares about a brand?, B. Steinbrecher, Power + Radach, Germany
	How and Why is industry re/branding?, R. Triebel, K+S AG, Germany
	Panel Discussion: Redefining Mining Education: Success Stories and Lessons Learned – Case studies on mining and minerlas education program re/ branding. P. Foster, Camborne School of Mines, Great Britain; V. Kecojevic, Queens University, Canada; S. Saydam, University of New South Wales, Australia; NN, RWTH Aachen University, Germany
	SOMP Branding updates
	Enrolment and graduate trends: regional updates and new survey format
15:00 – 15:30	Break

15:30 – 17:00	**Session 4: Business Session**
17:00 – 17:15	Wrap-Up and Closing of the Day
17:15	Shuttle to Nivelstein
18:00	Miners Evening
22:00	Departure

Program 9th September

08:15 – 08:30	Welcome and Start into the Day
Session 5: Education: Shaping Tomorrow's Professionals: Embracing Modern Education for a Future-Ready Workforce	
08:30 – 10:00	Overview of the Education Committee, S. Nowosad, Curtin University, Australia
	Strategic Planning in Mining Engineering Education: A Case Study of the School of Mining Engineering at the University of the Witwatersrand; J. Githiria, B. Mutandwa, T. Tolana, Z. Mduli, P. Leeuw, C. Musingwini, University of the Witwatersrand, South Africa
	Challenges and Prospects in Geosciences Education in Turkey; C. Okay Aksoy, Dokuz Eylul University, Turkey; G. Gülsev Uyar Aksoy, Hacettepe University, Turkey
	Strategic Competency Analysis for Driving Sustainable Innovation in the Chilean Mining Ecosystem; F. I. C. Yeomans, Universidad Central, Chile and Minenovate, Chile
	Gamified Learning in Mining: Building Future-Ready Professionals; P. Ehlers, DMS Mining Studios, India
	Tracking Industry-informed Curriculum Changes in Selected Mining Programs; Z. Mduli, B. Mutandwa, C. Musingwini, University of the Witwatersrand, South Africa
	MiReBooks – a new approach in knowledge transfer; C. Drebenstedt, TU Bergakademie Freiberg, Germany; S. Feiel, M. Labrador, P. Moser, Montanuniversität Leoben, Austria
	Utilising LiDAR scanning for geological mapping and modelling education in simulated mine environments; C. Birch, H. Grobler, University of the Witwatersrand, South Africa
	T-Shaped Professional Role in Mining Business Cases: Innovation Through Micro-Degree; V. Karu, Estonian Business School, Estonia
	Integrating Geopolitics and Sustainable Resource Management in Mining Engineering Education; C. Roumpos, Public Power Corporation of Greece, Greece ; P.-M. Spanidis, F. Pavloudakis, University of Western Macedonia, Greece; Z. Agioutantis, University of Kentucky, USA
	Poster Pitch 3 Minuten
	Excavationism'on the "Pasts" and Potentials of Mining and its Narratives; B. Arich-Gerz, RWTH Aachen University, Germany
	The Situation of Mining Engineers in their Education and Professional Lives Compared to other Professions in Türkiye; C. Okay Aksoy, Dokuz Eylul University, Turkey; G. Gülsev Uyar Aksoy, A. H. Deliomanli, Hacettepe University, Turkey
	Developing a Comprehensive Model for the Rock Engineering Profession: Pathways for Graduates and Semi-Skilled Mining Industry Personnel; M. Matlou, University of the Witwatersrand, South Africa
	Panel Discussion: Transforming the Classroom: Strategies for Modern Mining Education
10:00 – 10:30	Break

Session 6: Education	
10:30 – 12:00	From Extraction to interaction: Why Future Mining Professionals need Communication Skills; S. Walter, Lots Gesellschaft für veränderte Kommunikation mbH, Germany Helmut Mischo, TU Bergakademie Freiberg, Germany
	A critical analysis of South Africa's mineral benefication training landscape; P. N. Neingo, P. Twala, P. Leeuw, H. Mtegha, K. Manamela, University of the Witwatersrand, South Africa
	LabMove: Active Learning for Future-Ready Professionals in Sustainable Mining; A. L. Marques A. da Silva, A. L. Magalhães, M. Brandão, J. Wiler Barbosa Jun., R. Patrick Reis, S. Cruz, M. de Oliveira Santos Jun., University of São Paulo, Brasilia
	Building Industry, Academia and Community Partnerships: The Sustainable Mining Innovation and Lifestyle Enhancement Regional Innovation Engine; N. Russo, K. Luxbacher, M. Cabrera, The University of Arizona, USA
	Interactive Session "Designing the Future of Mining Engineering"
12:00 – 13:30	Lunch Break

Program 9th September

Session 7: Research, Development and Industry: Innovative Technologies and Research for Sustainable Mining Practices	
13:30 – 15:00	Introduction, V. Karu, Estonian Business School, Estonia
	Deep Mining Challenges: Recent Advances and Innovative Solutions; A. Taheri, Queens University, Canada
	Evaluation of the challenges limiting the adoption rate of forth industrial revolution technology in the mining industry; J. Githiria, T. Tingini, University of the Witwatersrand, South Africa
	How Mining can seize circular and digital opportunities; S. Krause, J. Kretschmann, O. Drusche, Technische Hochschule Georg Agricola, Germany; H. Mischo, TU Bergakademie Freiberg, Germany
	A Smart Algorithm for Global Critically Assessment of Minerals and Metals; A. Mammadli, Curtin University, Australia
	Development of a Decision Support System Tool for Continious Economic Optimization of Underground Critical Raw Materials Mining Projects; M. A. Islam, H. Mischo, TU Bergakademie Freiberg, Germany
	Developing a digital framework for simulating and optimizing climate change Adaption Strategies: A case study of an anonymous Underground Mine; E. Chabata, L. Madziwa and G. Dzinomwa, Namibia University of Science and Technology, Namibia
	Development of environmental protection requirements for green mine construction in China; L. Liu, Z. Li, J. Qiao, X. Peng, Chongqing University, China
	T-Blast: An Automated System for Drill-and-Blast Design in Tunnel Excavtion; G. Exadaktylos, P. Liolios, M. Stavropoulu, National Technical University of Athens, Greece
	Vision Zero: Achieving zero fatalities managing high potential incidents in mining; B. G. Perez Chavez, Minsur SA and Universidad Nacional Ingeneria, Peru
	Panel Discussion: From Innovation to Implementation: Challenges and Opportunities in Sustainable Mining
15:00 – 15:30	Break

Session 8: Capacity Building: Fostering Global Connections: Advancing International Collaboration	
15:30 – 17:00	Overview Capacity Building Committee, G. Dzinomwa, Namibia University of Science and Technology, Namibia; S. Ata, University of New South Wales, Australia
	Putting SOMP on the Map – The Creation of an Interactive World Map of Mining Engineering Programs; G. Meissner, TU Bergakademie Freiberg, Germany; S. Hazuria Anderson, Curtin University, Australia; G. Bournival, University of New South Wales, Australia; S. Nowosad, Curtin University, Australia
	Creating new realities for young Colombian engineers: The international collaboration created by SOMP as a new educational tool; O. J. Restrepo Baena, Universidad Nacional de Colombia, Colombia
	International Collaboration For Sustainability of Critical Minerals Value Chains in Indonesia, E. Harjanto, National Research and Innovation Agency, Republic of Indonesia; T. Winarno, Ministry of Energy and Mineral Resources, Republic of Indonesia
	Demand of Capacity Building and Lifelong learning: an industry perspective; A. Tobar, Epiroc Iberia
	Workshop
	Presentation Upcoming SOMP Regional Meeting
17:00 – 17:15	Wrap-Up and Closing of the Day
18:30	Group Photo
19:00	Awards Dinner

Program 10th September

08:15 – 08:30	Welcome and Start into the Day
Session 9: Members Development: Mastering Digital Competencies	
08:30 – 10:15	Artificial Intelligence in Mining and Law; W. Frenz, RWTH Aachen University, Germany
	Integrating Automation, AI and Digitalization in Mining Education: Building the Mining Workforce for Industry 5.0; N. Risso, B. Czerkawski, J. He, The University of Arizona, USA
	Unlocking AI Expertise for Mining Engineers: Needs, Status, and Effective Educational Pathways; A. Binder, M. Schubert, Y. Jiang, O. Langefeld, TU Clausthal, Germany
	Empowering the next generation of mining engineers with data-driven decision-making skills to tackle industry challenges; J. Githiria, I. Mabala, P. Shivute, University of the Witwatersrand, South Africa
	Empowering Students Through AI: A Course Wrapper for Mining Safety and Health; W. P. Rogers, University of Utah, USA
	Beyond Traditional Writing: Leveraging Large Language Models to enhance Research Communication in Mining Engineering – A Case Study; B. genc, O. Dyo- Olupona, T. Celik, S. Bada, University of the Witwatersrand, South Africa
	Exploring the feasability of using large language models for automatic grading of research assignments at the Wits School of Mining Engineering: Challenges, opportunities and implications; C. Birch, University of the Witwatersrand, South Africa
	Q&A: Digging Deeper: AI, Education, and the Future of Mining
10:00 – 10:30	Break
10:30 – 12:00	**Members Development: Workshop**
12:00 – 13:30	Lunch Break

13:30 – 15:00	**Session 10: Lab Tours**
15:00 – 15:30	Break

15:30 – 17:00	**Session 11: Closing Session**
17:00 – 18:00	Future Regional Meetings and SOMP supported events
18:00	Flag Ceremony and Farewell Event

Posters

General

The Societät der Bergbaukunde in the 18th century: Learning from History to build the future; A. Tobar, Epiroc Iberia; R. Lain Huerta, J. L. Parra y Alfari, J. F. Elorza Teneiro, Universidad Politecnica de Madrid, Spain; D. J. Carvajal Gomez, University of Huelva, Spain; S. Nowosad, Curtin University, Australia; O. Langefeld, Clausthal University of Technology, Germany; Mario F. Cedron Lassus, Pontificia Universidad Catolica del Peru, Peru

Strengthening Academia–Industry Collaboration

Stakeholder collaboration: A case study of the School of Mining Engineering at the University of the Witwatersrand; T. Tholana, University of the Witwatersrand, South Africa

Innovative Technologies and Research for Sustainable Mining Practices

Technical and Environmental Aspects of Mine Tailings Valorization; M. Cardu, G. N. Sakatadi, Politecnico di Torino, Italy

Technological and Management Challenges in the Metal and Minerals Sector in the European Region of Andalucia; D. J. Carvajal Gomez, University of Huelva, Spain

Non-conventional sources and methods of mineral extraction – challenges and opportunities; C. Drebenstedt, TU Bergakademie Freiberg, Germany

Use of AI/machine learning and GIS – case study evaluation of dump stability; C. Drebenstedt; TU Bergakademie Freiberg, Germany

Foreign Objects Detection on a conveyor belt using computer vision techniques: A case study of a copper smelter; G. Dzinomwa, Namibia University of Science and Technology, Namibia

Environmental Processes of Gypsum Mining in La Guajira; D. D. Lopez Juviano, N. C. Lozada, M. T. A. Ruiz Arrieta, Universidad de la Guajira, Colombia

Investigation and Optimization of Cable Anchor Support System in Timberless UG2 (Chromitite) Stopes in the Western Bushveld Complex; R. Masethe, T. Gcuda; M. Masitise, Engineering and Science University of Kwa- Zulu- Natal, South Africa

Sustainable Mining of Critical Raw Materials in Saxony´s Erzgebirge: The Legal Situation vs. Public Expectations – Insights from the AGEMERA Project; G. Meissner, H. Mischo, TU Bergakademie Freiberg, Germany

Research on Predicting the Tensile Strength of Granite using Digital Image Process and Machine Learning Techniques; B. Mishra, C. He, University of Utah, USA

Comparison of technical operating flexibility and profitability at selected underground platinum mines to manage long-term operational viability; C. Musingwini, B. M. Grobelaar, L. J. Mohloki, B. Mutandwa, University of the Witwatersrand, South Africa

Optimized Seismic Wave Control in Blasting Operations for Reduced Vibrations; C. Okay Aksoy, Dokus Eylul University, Turkey; G. Gülsev Uyar Aksoy, O. Savas, Hacettepe University, Turkey

Integration of technology and data for the monitoring of underground cavities; J.-A. Paffenholz, M. D. Martin, J. Thomas, A. Binder, T. Sen, O. Langefeld, Clausthal University of Technology, Germany

Towards Sustainability in Mining: Diverging Challenges Across the Industry; F. F. Pavloudakis, University of Western Macedonia, Greece; C. Roumpos, Public Power Corporation of Greece, Greece; P. -M. Spanides, University of Western Macedonia, Greece; Z. Agioutantis, University of Kentucky, USA

Innovative Technologies and Research for Sustainable Mining in Kazakhstan; S. Sabanov, R. Koshunova, D. Aitmagambetova; Nazarbyev, University Kazakhstan, Kazakhstan

From vision to reality – innovations in mining by Deep Sea Sampling; M. Sobczyk, TU Bergakademie Freiberg, Germany

Autoregressive Model of the vertical displacements process of a mining area to assess the possibility of induced mining earthquake occurrence; V. Sokola-Szewiola, Silesian University of Technology, Poland

Dry Mining: Sustainability; C. Soto, M. Javier, Universidad Continental, Peru

Tendencias del Cobre y Analisis Economico en el Perú Copper Trend and Economic Analysis in Peru; J. E. Soto Yen, Universidad Nacional de San Marcos,Peru

Tracing Corporate SDG Integration and Priorization: A Longitudinal and Structural Analysis in the Mining Sector; Q. Zhang, C. Wang, Queens University, Canada

Rock Mechanics study and prediction & early-warning of mine Hazards; W. Zhu, X. Xu, L. Niu, H. Li, Northeastern University, China

Fostering Global Connections: Advancing International Collaboration

Experiences with International Joint Study Programs; C. Drebenstedt, TU Bergakademie Freiberg, Germany

Suggestions for the mechanization of mining operations in Colombia; S. Nowosad, Curtin University, Australia

Mineral Company Business Models - Strategy articulation and sustainable business models in the mining industry, K. Sinding, University of Southern Denmark, Denmark

Transforming Mining Education through International Collaboration Insights from Chongqing University and Clausthal University of Technology; Y. Jiang, A. Binder, Clausthal University of Technology, Germany; L. Liu, Chonqing University, China; O. Langefeld, Clausthal University of Technology, Germany