

Arctic Mines – Summer School in Mining and Mineral Processing, Finland

Theme: Intelligent Mines

Credits (according ECTS system): 15

Schedule: 22 April – 30 May: Orientation task and online course
29 July – 23 August: Summer School in Finland

Programme:

(as April 10th. All rights for changes reserved)

Orientation task (3 credits):

Detailed information on the orientation task and how to attend the online lectures will be provided to the registered participant by email.

- 1) Report and presentation: Write a short report and prepare a presentation material describing mining industry (metallic ore and industrial mineral mining, mineral processing and related other industries) in your home country or region, and make yourself familiar with mining industry in Finland.
 - Return your report by May 30th in the Moodle learning platform
 - Prepare yourself to have 30 minutes presentation (ppt or equivalent) during the Summer School.
- 2) Online course: Join an online course on Sustainable Mining and Mineral Processing in Finland (will be opened in April 22nd on the Arctic Mines Summer School website). The online course includes three streamed and recorded lectures, four hours each. The lectures are:
 - Geology of Finland
 - Sustainable mining in Finland
 - Challenges in ore prospecting and mining industry

Summer School (10 credits):

Day	Date	Programme	Place
1	Monday, July 29 th	Welcome and opening ceremony Introduction to Finnish culture Mining industry in Finland: history, present and future	Kajaani
2	Tuesday, July 30 th	Lecture of a visiting professor Modern silver mine, Sotkamo Silver presentation Student presentations of the orientation task Ice breaking evening	
3	Wednesday, July 31 st	Introducing of KAMK's r&d-activities in mining sector Intelligent mines – technology overview, industry expert lecture	
4	Thursday, August 1 st	Visit to Terrafame mine (Ni-Cu-Zn-Co open pit mine)	
5	Friday, August 2 nd	Laboratory work: Mineral processing and analyzing	

		Finnish traditional evening programme	
6	Saturday, August 3 rd	Challenge yourself: Sports and physical activities in Vuokatti	
7	Sunday, August 4 th	Your own time. Enjoy your stay in Kajaani	
8	Monday, August 5 th	Laboratory work: mineral processing and analyzing	
9	Tuesday, August 6 th	Virtual Mines: introducing KAMK's virtual reality and augmented reality tools for mines' simulations Create your own virtual mine – workshop Finnish culture evening	
10	Wednesday, August 7 th	Lectures of the visiting professor Extracting value: how to create new raw materials from mining waste, expert lecture	
11	Thursday, August 8 th	Sustainable mines: social responsibility and environmental legislation, expert lectures Workshop on sustainable mining	
12	Friday, August 9 th	Transfer from Kajaani to Saariselkä (7 hours by bus)	
13	Saturday, August 10 th	Geology of Fennoscandian shield, expert lecture Field trip to lake Inari and evening activities in Virtaniemi	Saariselkä
14	Sunday, August 11 th	Geology in Lapland, expert lecture Visit to Vuotso and Tankavaara Gold Museum	
15	Monday, August 12 th	Exploration in Arctic region, expert lecture Practising rock sampling and visual inspection in Hangasojä	
16	Tuesday, August 13 th	Geochemical methods, expert lecture Rock sampling in Mäkäri Gold area for laboratory work	
17	Wednesday, August 14 th	Geology of Gold, expert lecture Practising of Gold panning	
18	Thursday, August 15 th	Gravimetric methods, expert lecture Introducing different types of gold prospecting sites	
19	Friday, August 16 th	Visit Boliden Kevitsa mine (Ni open pit mine) Transfer to Rovaniemi	
20	Saturday, August 17 th	Visit at Santa Claus Village in Arctic Circle Activities on your own	Rovaniemi (Kemi/Tornio)
21	Sunday, August 18 th	Hiking at Vaattunkiköngäs hiking route	
22	Monday, August 19 th	Finnish Mining Act, expert lecture Visit at TUKES (Finnish Safety and Chemicals Agency)	
23	Tuesday, August 20 th	Mining technology business in Finland, expert lecture Visit at ADC Ltd. (Arctic Drilling Company) <i>Deadline for the final report¹⁾</i>	
24	Wednesday, August 21 st	Visit at SMA Minerals Ltd Laboratory work with the mineral samples	
25	Thursday, August 22 nd	Visit at Outokumpu Kemi Mine Laboratory work with ore samples	
26	Friday, August 23 rd	Closing ceremony	

¹⁾ **Final report (2 credits):** Write a report (diary or portfolio type) summarizing what you have done and learned during the Arctic Mines Summer School about sustainable and intelligent mining. Reflect your findings to mining industry in your own country. Return the report by August 23rd to Mr. Rauno Toppila (rauno.toppila@lapinamk.fi).

Feedback

Give also feedback to us how did you find the Summer School and suggestions on how to develop it in forthcoming years.

Future Summer Schools:

2020	Arctic Circular Economy in Mining Industry
2021	Advanced Materials and Their Production