

Arctic Science 2023, 4.5 hp

Schedule with Kiruna meeting, 1st – 4th February

Monday 16 Jan. 17:15 – 18:15	Zoom Introduction to the course, course registration
Thursday 19 Jan. 17:15 – 18:15	Zoom <i>The physics of the aurora and the aurora observation exercise</i> Carol Norberg
Monday 23 Jan. 17:00 – 18:15	Zoom <i>Snow crystals</i> , Professor Kenneth Libbrecht
	Kiruna visit
Wednesday 1 Feb. 7:55 Bus departs bus station 8:45 – 9:30 9:30 – 10:00 10:00 – 11:00 11:00 – 11:30 11:30 – 12:15 12:15 – 13:15 13:15 13:29 regular bus to Jukkasjärvi 14:00 15:35 or 16:28	Swedish Institute of Space Physics (IRF), Aula Bus from town arrives Space Campus approx 08:40 (Card payment only on the bus) <i>General information, course assignments</i> Carol Norberg & Carina Gunillasson Coffee break <i>Snow and ice in the solar system</i> , Axel Hagermann <i>Current activities of the Swedish Institute of Space Physics</i> , Hans Nilsson Tour of the Space Campus Lunch break Group photograph in front of the Institute Visit to ICEHOTEL, Jukkasjärvi Visit to the ICEHOTEL Regular bus departs Jukkasjärvi Evening: Aurora observations weather permitting
Thursday 2 Feb. 9:00 – 10:00 10:30 – 11:30 13:00 14:30 – 15:30 17:00 – 18:00 18:00 – 23:00 23:00	Kiruna Lapplands Lärcentra, Auditorium <i>Living in a cold climate</i> , Fredrik Kjellberg <i>Living and working in the Arctic from the point of view of the Sami people</i> , Anna Sarri Abisko Chartered bus departs to Abisko <i>The climate's impact on the Arctic environment</i> , Keith Larsson at the Abisko Research Station <i>Avalanche safety, Avalanche technician</i> Erik Boström Free time & Aurora observation period Chartered bus back to Kiruna
Friday 3 Feb. 9:00 – 11:00 12:30 – 15:00	Kiruna Lapplands Lärcentra, Auditorium <i>Physics of the aurora, optical phenomena in the Arctic and sea ice exercise</i> , Carol Norberg Bus departure from the Folkets Hus 12:30 for a tour of the LKAB underground mine Evening: Aurora observations weather permitting
Saturday 4 Feb. 8:45 – 11:15	Kiruna Lapplands Lärcentra, Auditorium <i>Snow exercise</i> The exercise comprises an introduction, outdoor snow pack investigation involving digging in the snow and measurements, concluding with a group discussion.

Monday 20 Feb. 17:15 – 18:15	Zoom <i>Stories from Svalbard glaciers; past, present and future,</i> Elisabeth Isaksson
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The Swedish Government finances this course for non fee-paying students. It is a distance course with one meeting in Kiruna from 1 to 4 February 2023. We reserve the right to make adjustments in the schedule if necessary. The exact schedule will be somewhat dependent on the weather.

Participating lecturers

Dr. Carol Norberg, Umeå University
Professor Kenneth Libbrecht, California Institute of Technology (Caltech), Lennart Nilsson Award for snowflake photography
Dr. Hans Nilsson, Researcher, Swedish Institute of Space Physics
Professor Axel Hagermann, Luleå University of Technology
Dr. Fredrik Kjellberg, Senior Physician Kiruna Hospital
Anna Sarri, Sami businesswoman, Nikkaluokta
Dr. Keith Larsson, Director of the Arctic Center at Umeå University
Erik Boström, Avalanche technician, Abisko Tourist Station
Dr. Elisabeth Isaksson, Norwegian Polar Institute
Researchers and PhD students, Swedish Institute of Space Physics

Cold-weather clothing

In order to keep warm in the subarctic climate one should dress according to the three-layer principle. In order to regulate the body's temperature it is better to have several thin layers of clothing than one thick layer. The thin layers create several insulating air layers between them.

1. The inner layer should be underwear made of wool, preferably two layers.
2. The intermediate layer should be warming, such as a wool jumper or fleece jacket
3. The outer layer should protect against the weather, a windproof jacket (e.g. down jacket) and thermal trousers.
4. A warm hat and gloves are essential and a scarf is preferred.

A pair of spacious shoes will allow you to fit an extra pair of wool socks and let your toes have room to move. It is advisable to avoid taking a shower or bath before going outside. Avoid using water-based skin creams as these may cause frostbite.