

Geologically controlled fluid-flow dynamics on a formerly glaciated continental shelf

Geo-8144/3144 Marine Geology and Geophysics Cruise (5sects)

Longyearbyen to Tromsø, 3-20 August 2022



Theme: This MSc/PhD course is carried out on a scientific cruise with *RV Helmer Hanssen* to the central Barents Sea. The cruise will investigate processes driving natural, geologically controlled hydrocarbon leakage, from the subsurface through the water column and into the atmosphere.

Learning outcomes: Teaching methods will cover a mix of fieldwork, lectures and student presentations. The investigations will be based on multibeam echosounder data, high-resolution seismic and acoustic data, satellite remote sensing, air sampling, and sediment cores that will be acquired during the cruise, in addition to available published literature and data collected from the area during previous expeditions. Following literature preparation before the cruise, the students will give presentations on specific, given topics, they will have lectures on-board, be supervised during acquisition and processing of field data and have daily discussions about the obtained results. The cruise is run in conjunction with the GEO-8145/3145 Arctic Marine Geology and Geophysics workshop.

Assessment: The students must give presentations on given topics, participate actively in the scientific cruise and outreach, and submit an individual written course report (10-20 pages) at the end of the cruise. Sections of the individual cruise report will be used in a publicly available overall cruise report. Detailed reading lists and given topic to present will be sent to all participants at least 4 weeks prior to the cruise. Grading: pass/fail.

Collaborators: The cruise will include expertise from CAGE (Centre for Gas Hydrate Environment and Climate), the Norwegian Petroleum Directorate, CEED (Centre for Earth Evolution and Dynamics), and CIRFA (Centre for Integrated Remote Sensing and Forecasting for Arctic Operations). The cruise is a part of the INTPART project HOTMUD (From hydrothermal systems to mud volcanoes: Planet-scale impacts of piercements in sedimentary basins) and the Geoscience Research Academy of Tromsø (GReAT)

Applications: The course is organized by the Department of Geosciences, UiT The Arctic University of Norway. The course has a limited capacity for students, depending on the places available onboard *Helmer Hanssen*. The application deadline is 15 April 2022. Admission requirements are provided in the following links:

Practical information: Cruise participants will meet at The University Centre in Svalbard (UNIS) 03.08. The cruise will end in Tromsø 20.08 in the morning.

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