

## ***Risk and Reliability***

The discipline within "Risk and Reliability" enlightens the theoretical fundament of risk and reliability analyses, and techniques available to assess risk and reliability. The study focus on the technical and safety related challenges associated with industrial activities in the High North. The students will be introduced to methods and tools for managing advanced, complex and integrated technical systems with respect to operation and maintenance, reliability and production assurance, health, safety, environmental and economical risk as well as emergency preparedness.

1H	TEK-3002 Reliability Engineering, 10 ECTS	STA-2001 Stochastic processes 10 ECTS	Specialization/ optional course, 10 ECTS
1 V	TEK-3006 Cold climate engineering, 10 ECTS	TEK-3001 Operation and maintenance management 10 ECTS	Specialization/ optional course, 10 ECTS
2H	TEK-3004 Project paper, 10 ECTS	TEK-3008 Marine engineering 10 ECTS	Specialization/ optional course, 10 ECTS
2V	TEK-3901 Master thesis in engineering 30 ECTS		

Compulsory courses in this discipline are:

- STA-2001 Stochastic processes, 10 ETSC
- TEK-3001 Operation and maintenance management, 10 ETSC
- TEK-3008 Marine engineering, 10 ETSC

Generally recommended optional courses are:

- TEK-3003 Specialization subject in technology, 10 ECTS
- TEK-3007 Safety and risk analyses, 10 ETSC
- TEK-3009 Risk based inspection and condition monitoring, 10 ECTS
- GEO-2006 Innføring i anvendt geofysikk, 10 ETSC
- GEO-3128 Marine geohazards, 5 ETSC
- GEO-3129 Drilling and production of oil and gas, 5 ETSC
- MAT-3200 Matematiske metoder
- AT-205 "Frozen ground engineering for Arctic infrastructure" 15 ECTS
- AT-208 "Thermo-mechanical properties of materials" 15 ECTS
- AT-321 Fate and modelling of pollutants in the Arctic, 10 ECTS
- AT-324 Techniques for the detection of Organo-Chemical Pollutants in the Arctic Environment, 10 ECTS
- AT-329 Cold Regions Field Investigations, 10 ECTS
- AT-301 Arctic infrastructure in changing climate, 10 ECTS
- AT-323 Thermo-mechanics of sea ice cover and loads on structures, 10 ECTS
- AT-327 Arctic Offshore Engineering, 10 ECTS

Note: AT-courses are given at UNIS, Svalbard