

SYLLABUS

Operation and Maintenance - Hydropower 7.5 credits D0004B

Drift och underhåll - Hydropower

Course syllabus admitted: Spring 2025 Sp 3 - Present

**DECISION DATE
2024-02-14**

Operation and Maintenance - Hydropower 7.5 credits D0004B

Drift och underhåll - Hydropower

First cycle, D0004B

Education level	Grade scale	Subject	Subject group (SCB)
First cycle	G U 3 4 5	Underhållsteknik	Other Subjects within Technology

Entry requirements

In order to meet the general entry requirements for first cycle studies you must have successfully completed upper secondary education and documented skills in English language and 60 ECTS in engineering subjects

Selection

The selection is based on 1-165 credits.

Course Aim

The aim of the course is to provide students with knowledge and understanding of concepts, methods, and theories in maintenance engineering. After completing the course, the student should have the skills to perform analyses for a reliable and economical operation and maintenance with applications in hydropower.

Contents

The course contains:

- The maintenance process, philosophy and policy
- Maintenance and dependability concepts
- Maintenance strategy, goals and performance indicators
- Asset management
- Calculation of availability and reliability of series and parallel systems
- Condition monitoring and condition-based maintenance
- Reliability-centered maintenance (RCM), risk management, and failure mode and effects analysis (FMEA)
- Total productive maintenance (TPM)
- Evaluation of overall equipment effectiveness (OEE)
- Life cycle cost analysis
- Maintainability and human errors in maintenance
- Maintenance applications in hydropower

Realization

Each course occasion's language and form is stated and appear on the course page on Luleå University of Technology's website.

The teaching consists of lectures, group work, seminars and laboratory work.

Examination

If there is a decision on special educational support, in accordance with the Guideline Student's rights and obligations at Luleå University of Technology, an adapted or alternative form of examination can be provided. Approved assignments. Written exam with differentiated grades.

Unauthorized aids during exams and assessments

If a student, by using unauthorized aids, tries to mislead during an exam or when a study performance is to be assessed, disciplinary measures may be taken. The term “unauthorized aids” refers to aids that the teacher has not previously specified as permissible aids and that may assist in solving the examination task. This means that all aids not specified as permissible are prohibited. The Swedish version has interpretative precedence in the event of a conflict.

Overlap

The course D0004B is equal to ABD012

Course offered by

Department of Civil, Environmental and Natural Resources Engineering

Modules

Code	Description	Grade scale	Cr	Status	From period	Title
0003	Written exam	G U 3 4 5	4	Mandatory	A21	
0004	Group work/Assignment reports	U G#	3.5	Mandatory	A21	

Study guidance

Study guidance for the course is to be found in our learning platform Canvas before the course starts. Students applying for single subject courses get more information in the Welcome letter. You will find the learning platform via My LTU.

Last revised

by Assistant Director of Undergraduate Studies Eva Gunneriusson, Department of Civil, Environmental and Natural Resources Engineering 2024-02-14

Syllabus established

by Department of Civil and Environmental Engineering 2007-01-31