ME2083 Hydropower- Technology, Economy, Sustainability 7.5 credits

Vattenkraft- teknik, ekonomi, hållbarhet

This is a translation of the Swedish, legally binding, course syllabus.

Establishment

On 11/04/2019, the Dean of the ITM school has decided to establish this official course syllabus to apply from spring term 2020 (registration number M-2019-1322).

Grading scale

A, B, C, D, E, FX, F

Education cycle

Second cycle

Main field of study

Industrial Management, The Built Environment

Specific prerequisites

Achieved the requirements for a Degree of Bachelor of Science

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

After passing the course, the students should be able to:

1. Describe the role of the hydroelectric power in the energy system both in Sweden and internationally
2. Compare the design of dams, power stations and mechanical, electric and electronic equipment
3. Analyse new and innovative technical solutions for design, operation and regulation of hydroelectric power plants
4. Formulate and analyse the economic preconditions for and the consequences of hydro-electric power
5. Analyse and critically discuss the environmental impact of the hydroelectric power and the judicial preconditions for hydroelectric power
6. Choose and analyse a current problem connected to the hydroelectric power industry

Course contents

Main focus is on how the hydrological conditions decide physical and technical design and operation of hydro electric power stations as well as their economic and environmental consequences. The course includes several different subject areas, which are treated more in-depth in other courses that are offered by the departments that cooperate in this course.

The course is divided into four modules:

Module 1: Introduction

Module 2: The technical preconditions of the hydro electric power and its solutions

Module 3: Economic aspects on hydroelectric power

Module 4: Sustainability and sustainable solutions connected to hydroelectric power

Examination

- PRO1 - Project, 1.5 credits, grading scale: P, F
- TEN1 - Examination, 6.0 credits, grading scale: A, B, C, D, E, FX, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

If the course is discontinued, students may request to be examined during the following two academic years.

There are modules with compulsory attendance in the course.

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.