SYLLABUS

Electricity Production 7.5 credits W0031T

Elproduktion

Course syllabus admitted: Autumn 2023 Sp 1 - Present

DECISION DATE
2023-02-15

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LULEÅ TEKNISKA UNIVERSITET

Electricity Production 7.5 credits W0031T

Elproduktion

First cycle, W0031T

Education level	Grade scale	Subject	Subject group (SCB)
First cycle	G U 3 4 5	Elkraftteknik	Energy 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 ,

Selection

The selection is based on 1-165 credits.

Course Aim

After the completion of this course, the student should be able to:

Knowledge and understanding

-Describe and explain basic concepts regarding electricity production from different primary sources and using different conversion processes
-Describe and explain the advantages and disadvantages of the electric power system with different types of electricity production
-Describe and explain basic concepts within the electricity market in Sweden

Skills and abilities
-Perform basic assessments related to reliability and operational risk for the electric power system
-Perform basic calculations related to the wholesale electricity market
-Perform calculations and estimates for power flows and peak power in a system with both production and consumption of electrical energy

Valuation and approach
-Describe and explain different ways of producing electricity to a non-technical audience, including advantages and disadvantages
-Describe and explain the electricity market to a non-technical audience

Contents

-Energy and power considerations in a sustainable energy system
-Introduction to electricity markets. Market formation, functioning, and emission-based markets.
-Reliability and security of the electricity supply
-Selected energy conversion processes and different types of primary energy
-Selected types of electric power generation
-Advantages and disadvantages of different forms of electric power generation for the power system and the electricity market
-Project about electricity production

Realization

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

The course will be given as a combination of pre-recorded lectures, live lectures in a lecture room and question hours via Zoom and/or in a lecture room. The course also contains a project work with small groups.

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.

Written exam and report of project work

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.

Course offered by

Department of Engineering Sciences and Mathematics

Modules

Code	Description	Grade scale	Cr	Status	From period	Title
0001	Quiz	U G#	1	Mandatory	A23	
0002	Project	U G#	1.5	Mandatory	A23	
0003	Written exam	G U 3 4 5	5	Mandatory	A23	

Syllabus established

by Mats Näsström, Head of Undergraduate Education 2023-02-15