SYLLABUS

Electricity Networks 1 7.5 credits W7010T

Elnät 1

Course syllabus admitted: Spring 2024 Sp 3 - Present

DECISION DATE
2023-06-15

Luleå University of Technology 971 87 Luleå, Sweden
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LULEÅ TEKNISKA UNIVERSITET

Electricity Networks 1 7.5 credits W7010T

Elnät 1

Second cycle, W7010T

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

Entry requirements

The course electrical circuit theory or equivalent knowledg

Selection

The selection is based on 30-285 credits

Course Aim

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

Knowledge and understanding:
-describe and explain the detailed structure and functionality of transmission networks.
-describe and explain the planning and operation of transmission networks.

Skills and abilities:
-with a holistic view, independently and creatively identify, formulate, and perform calculations in transmission networks.
-critically and systematically model, simulate, predict, and evaluate the performance of transmission networks.

Valuation and approach:
-assess opportunities and limitations of smart and conventional transmission grids to address the challenges associated with electrification.

Contents

This first course on electricity networks deepens into technical aspects of the transmission network. The course provides a comprehensive description of the transmission network structure, its components, smart grid strategies and technologies, operation and planning studies, and discusses the link between regulatory aspects and the mission and management of the transmission network. The control and operation are also studied in the context of renewable production integration, together with innovative ancillary services such as flexibility.

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.

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

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
0003	Written exam	G U 3 4 5	7.5	Mandatory	S24	

Last revised

by Mats Näsström, acting Head of Undergraduate Education 2023-06-15

Syllabus established

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