



LUNDS UNIVERSITET
Lunds Tekniska Högskola

Course syllabus

Elteknik i järnvägssystemet

Electric Power Systems in Railways

VTVF46, 7,5 credits, G2 (First Cycle)

Valid for: 2023/24

Faculty: Faculty of Engineering, LTH

Decided by: PLED V

Date of Decision: 2023-03-21

General Information

Compulsory for: IBYI2

Language of instruction: The course will be given in Swedish

Aim

The aim of the course is to provide fundamental knowledge of electric power in railways, on system and component levels. It is also intended to give an insight into the problems of overhead contact line installation in the projection of simpler contact line installation

Learning outcomes

Knowledge and understanding

For a passing grade the student must

- be able to describe and understand the construction and functions of electrical installations and control of active and reactive power, and be informed about the prerequisites that apply in the operation of installations.
- be able to give an account of different electrical installations that are parts of the operation of electric railway traffic with respect to both function and the essential connections with the parts of the installation.
- be able to give an account of the maintenance principles for the electric systems and understand the importance of a well planned maintenance

Competences and skills

For a passing grade the student must

- take into consideration the prevailing regulations and handbooks and project a simpler catenary system installation.

- be familiar with the documentation concerning power supply installations and interpret the functions of different installation sections with the help of drawings and other documents.
- give an account of the project work in the projection of a simpler catenary system installation.

Contents

- General electric power engineering
- Power supply in the railway system
- Contact lines
- Reserve power lines and stations
- Train heating
- Design of power systems
- Maintenance of the electric system

Examination details

Grading scale: TH - (U,3,4,5) - (Fail, Three, Four, Five)

Assessment: Approved exam. Approved project report.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

Admission

Assumed prior knowledge: FAFA40 Physics

The number of participants is limited to: No

The course overlaps following course/s: EIE631, VTVF45

Reading list

- Elektroniskt kompendium i Elteknik.

Contact and other information

Examiner: Andreas Persson, andreas.persson@tft.lth.se

Course coordinator: Anders Svensson, anders.g.svensson@trafikverket.se

Course homepage: <https://www.tos.lth.se/utbildning/grundutbildning/>

Further information: The course is given at Trafikverksskolan in Ängelholm.