



**LUNDS UNIVERSITET**  
Lunds Tekniska Högskola

*Course syllabus*

# **Elenergiteknik**

## **Power Engineering**

**ETEF05, 7,5 credits, G2 (First Cycle)**

**Valid for:** 2023/24

**Faculty:** Faculty of Engineering, LTH

**Decided by:** PLED E

**Date of Decision:** 2023-04-11

### **General Information**

**Compulsory for:** IEA2

**Language of instruction:** The course will be given in Swedish

### **Aim**

The aim of this course is to give the students basic knowledge about production and distribution of electrical power and knowledge about building low and high voltage systems. The course also gives a perspective of the properties and capacities of various electric energy sources and sustainability in energy issues.

### **Learning outcomes**

#### *Knowledge and understanding*

For a passing grade the student must

- be able to explain various types of production of electrical energy,
- be able to explain how a system for electrical distribution works,
- be able to design an electrical system with respect to capacity and limits.

#### *Competences and skills*

For a passing grade the student must

- be able to do calculations for electrical power systems,
- be able to make relevant measurements for three-phase systems,
- be able to do certain calculations for high voltage systems.

#### *Judgement and approach*

For a passing grade the student must

- show insight into various types of electric energy production and distribution,
- have gained the self confidence to make certain measurements and calculations on an electric power system.

## Contents

- Electrical energy production.
- Three-phase power transformers.
- Electrical energy distribution.
- High voltage systems.
- Electrical energy distribution for railways.
- Power plants for railways.
- Capacity and dimensioning factors.
- Operational monitoring.
- Safety.
- The capacity of various electric energy sources.

## Examination details

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

**Assessment:** Passed written examination, passed laboratory preparation reports, passed laboratory experiments, passed project assignment.

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.

### Parts

**Code:** 0113. **Name:** Power Engineering.

**Credits:** 6,5. **Grading scale:** TH. **Assessment:** A passed written examination gives the grades 3, 4 or 5.

**Code:** 0213. **Name:** Laboratory Work.

**Credits:** 1. **Grading scale:** UG. **Assessment:** Passed laboratory preparation reports and passed laboratory experiments.

## Admission

**Admission requirements:**

- Passed laborations in EITA40/ETE604 Circuits and measurements

**The number of participants is limited to:** No

**The course overlaps following course/s:** EIE602

## Reading list

- Karl Axel Jacobsson, Stig Lidström, Carl Öhlén: Elkrafthandboken, Elkraftsystem 1. Liber , 2016, ISBN: 978-91-47-11436-8.

## Contact and other information

**Course coordinator:** Univ. adj. Henriette Weibull, henriette.weibull@iea.lth.se

**Course homepage:** <https://www.lth.se/iea/utbildning/kurser-paa-campus-helsingborg/elenergiteknik/>