



LUNDS UNIVERSITET
Lunds Tekniska Högskola

Course syllabus

Elmaskiner och drivsystem **Electrical Machines and Drives**

EIEF10, 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 the functions of electrical machines and electrical driving systems.

Learning outcomes

Knowledge and understanding

For a passing grade the student must

- be able to explain the function and the applications of DC and AC machines.
- be able to explain the function and applications of electrical machine systems.
- be able to explain the function and applications of frequency inverter applications.

Competences and skills

For a passing grade the student must

- plan an electrical driving system due to given conditions.
- design an electrical machine system.

Judgement and approach

For a passing grade the student must

- be able to judge the main possibilities and limitations of an electric drive system,
- have gained the self confidence to use an electric drive system.

Contents

- DC machines.
- AC machines.
- Servo machines.
- Electrical drive systems.
- Soft starters.
- Converter drive systems.
- Frequency converters.
- Electrical traction.
- Designing electrical machine drive systems.
- Safety.

Examination details

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

Assessment: Grade 3: passed written examinations, passed laboratory preparation reports, passed laboratory experiments.

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: 0114. **Name:** Electrical Machines and Drives.

Credits: 6,5. **Grading scale:** TH. **Assessment:** A passed written examination can give the grade 3, 4 or 5.

Code: 0214. **Name:** Laborations.

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

Admission

Admission requirements:

- The compulsory course items of ETEF05 Electrical power technique and ETEF10 Power electronics

The number of participants is limited to: No

The course overlaps following course/s: EIE620

Reading list

- Compendium and material provided by the department.

Contact and other information

Course coordinator: Univ adj Bengt Simonsson, Bengt.Simonsson@iea.lth.se

Course homepage: <https://www.lth.se/iea/utbildning/kurser-paa-campus-helsingborg/elmaskiner-och-drivsystem/>