COURSE DETAIL

ELECTRIC POWER SYSTEMS
Country Sweden
Host Institution Lund University
Program(s) Lund University
UCEAP Course Level Upper Division
UCEAP Subject Area(s) Engineering Electrical Engineering
UCEAP Course Number 160
UCEAP Course Suffix
UCEAP Official Title ELECTRIC POWER SYSTEMS
UCEAP Transcript Title ELECTRC POWER SYSTM
UCEAP Quarter Units 6.00
UCEAP Semester Units 4.00

Course Description

The course covers the design and properties of the electric power system during normal operation and during faults, and the impact of renewable generation. Central issues are possible control options during operation and how different types of instability limit power transfer capacity. The contents are lectured and studied through numeric exercises and practical laboratory tests that are preceded by computer simulations. The industrial computerized analysis of large systems is thus introduced but is combined with calculations by hand to review and interpret computer results. The following topics are reviewed: Construction and function of key components. Power electronic control and compensation; System representation: Single line diagram. Symmetrical components. Per unit normalization. Short-circuit MVA; System characteristics during normal operation, short-circuits, asymmetry and resonance. Angle and voltage stability. Computer dynamic simulations and load flow calculations. Control of voltage, frequency, active and reactive power. Relay protection; Study visit. Assumed prior knowledge: EIEF50, ESSF15 Electrical Engineering or EIEF35 Electrical Engineering, basic course, or EITF90 Electromagnetics and electronics.

Language(s) of Instruction
English

Host Institution Course Number
EIEN15

Host Institution Course Title
ELECTRIC POWER SYSTEMS

Host Institution Course Details
https://kurser.lth.se/lot/course-syllabus/26_27/EIEN15

Host Institution Campus
Lund University

Host Institution Faculty
Engineering

Host Institution Degree
Host Institution Department Engineering- Industrial Electical Engineering and Automation
Course Last Reviewed 2026-2027

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