



FEG3222 Elmarknadsanalys, doktorandkurs 10,0 hp

Electricity Market Analysis, Graduate Course

Fastställande

Betygsskala

G

Utbildningsnivå

Forsknivå

Särskild behörighet

The course is intended for Ph.D. students in electric power systems, but can also be interesting for students from other fields of electrical engineering.

Undervisningsspråk

Undervisningsspråk anges i kurstillfällsesinformationen i kurs- och programkatalogen.

Lärandemål

After the course, the student should be able to

- describe the principles of how an electricity market can be organised,
- describe treatment of flexible load

- describe methods to handle congestion in power markets,
- describe methods for analyzing prices in markets with limited competition,
- describe basic methods for financial risk management in power markets,
- describe methods to handle externalities, such as environmental problems, in electricity markets,
- perform calculations of pricing in small systems with one of the above characteristics.
- analyze pricing in larger power systems with combinations of several of the above named characteristics.
- apply methods for analyzing the trade off between low prices and reliability in larger power systems,
- formulate market simulation problems with mathematical expressions,
- analyze investment dynamics in electricity markets,
- reflect on possible ways to design electricity markets.

Kursinnehåll

Electricity pricing, congestion management, hydro power, market power, environmental issues, regulation market, financial derivatives, transmission tariffs, role of the TSO, capacity investments, investment dynamics.

Kursupplägg

Lectures, home assignments, 5 h exam, project assignments.

Kurslitteratur

L. Söder “Electricity Market Analysis”.

Examination

Examinator beslutar, baserat på rekommendation från KTH:s handläggare av stöd till studenter med funktionsnedsättning, om eventuell anpassad examination för studenter med dokumenterad, varaktig funktionsnedsättning.

Examinator får medge annan examinationsform vid omexamination av enstaka studenter.

När kurs inte längre ges har student möjlighet att examineras under ytterligare två läsår.

The project assignments are chosen by students in agreement with their supervisors and the examiner of the course.

Övriga krav för slutbetyg

- Approved home assignments.
- Passed the exam.
- Approved project assignments.

Etiskt förhållningssätt

- Vid grupperbete har alla i gruppen ansvar för gruppens arbete.
- Vid examination ska varje student ärligt redovisa hjälp som erhållits och källor som använts.
- Vid muntlig examination ska varje student kunna redogöra för hela uppgiften och hela lösningen.