MJ2382 Energy Data, Balances and Projections 6.0 credits

Energidata, energibalanser och projektioner

Course syllabus for MJ2382 valid from Autumn 14

This is a translation of the Swedish, legally binding, course syllabus.

Grading scale: A, B, C, D, E, FX, F
Education cycle: Second cycle
Main field of study: Mechanical Engineering

Intended learning outcomes

· Motivate why strategic national energy analysis, policy and planning require a reliable energy - balance and projections of future energy demand.

· Understand the links between human activities, the need for energy services and the energy required to drive them.

· Understand the classification of energy data as it pertains to developing a national energy balance.

· Understand the mechanics of a national energy balance.

· Gain insight into the various methodologies used to project future energy demand.

· Understand and gather relevant (energy, social and economic) data required to develop both a national energy balance and future demand projections.

· Learn and apply relevant software tools and use the gathered data for a static as well as future energy scenario assessment

Course main content

The course will be conducted in the combination of lectures, computer labs, mandatory seminars, project report and an exam. Lectures and labs will be delivered by some local and external experts coming form various research organizations. After completion of all computer labs students will be required to do two seminars followed by a detailed project report and an exam at the end of course. The course instructors will provide appropriate projects list during the 1st week of course. Each projects report will be completed by group of 3 to 4 students. The project report should be documented in a written report in English and also the peer review of project report of opponent group will be done by each group. For the mandatory seminars during the course, the students will prepare the presentation of their progress in each computer lab they performed. The student will gain exposure to energy data classification, collection and projections activities of the International Energy Agency (IEA), the UN Statistical Division (UN Stats) as well as the International Atomic Energy Agency (IAEA). It is envisioned that the students will also interact with the IEA, UN Stats and IAEA.

Language of instruction

Language of instruction is specified in the course offering information in the course and programme directory.

Eligibility

Literature

Föreläsningsmaterial och laborationsunderlag kommer att delas ut av kurskoordinatorn

Studenterna kommer även att genomföra en litteratursökning på egen hand för relevant material till deras respektive självständiga projekt

Lecture slides and lab literature will be provided by course organizers. Also the students will perform the self search for relevant literature for their respective project

Examination

- PRO1 - Project, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- SEM1 - Seminar, 0.5 credits, grading scale: P, F
- SEM2 - Seminar, 0.5 credits, grading scale: P, F
- TEN1 - Exam, 2.0 credits, grading scale: A, B, C, D, E, FX, F

Examination or requirements for course completion

Seminar 1 0.5 hp P/F

Seminar 2 0.5 hp P/F

Project 3 hp Grading A-F

Exam 2 hp Grading A-F

Individual grades ranging from A-F will be assigned on the completion of above all six requirements

Requirements for final grade

Examination or requirements for course completion

Seminar 10.5 hpP/F

Seminar 20.5 hpP/F

Project3 hpGrading A-F

Exam2 hpGrading A-F

Individual grades ranging from A-F will be assigned on the completion of above all six requirements