Linnæus University

Jnr: 2018/1227-3.1.2.2

Course syllabus

Faculty of Technology
Department of Physics and Electrical Engineering

1ED102 Elektrisk mätteknik, 7,5 högskolepoäng
Electric Techniques of Measurements, 7.5 credits

Main field of study
Electrical Engineering

Subject Group
Electrical Engineering

Level of classification
First Level

Progression
G2F

Date of Ratification
Approved 2009-08-11
Revised 2018-04-23 by Faculty of Technology. Removal of ECTS-grading scale and course evaluation is changed.
The course syllabus is valid from autumn semester 2018

Prerequisites
Analogue Electronic Circuits 7.5 credits (1ED012), and Analogue signals and systems 7.5 credits (1ED062) or the equivalent.

Objectives
The course gives an introduction to the large field of electrical measurements. By combining previously acquired knowledge
of primarily mathematics and electronics the student is expected to understand how these subjects are used to give a model for an electric system.

Content
The course comprises the following topics

- Measuring electrical phenomena like current, voltage and frequency
- Transducers for observation of non electric phenomena like position, speed, acceleration, temperature, pressure, airflow
- Amplifiers for weak signals from transducers
- ADC and DAC-converters and DAQ-cards
- Analysis made from step response and frequency response
- Statistics; average value and standard deviation
- Insecurity of measurements, disturbances and filtering
- Introduction to LabVIEW

Type of Instruction
Teaching consists of lectures, tutorials and laboratory sessions.

Examination

The course is assessed with the grades U, 3, 4 or 5.
Exam and practicals.

Course Evaluation

During the course or in close connection to the course, a course evaluation is to be carried out. The result and analysis of the course evaluation are to be communicated to the students who have taken the course and to the students who are to participate in the course the next time it is offered. The course evaluation is carried out anonymously. The compiled report will be filed.

Required Reading and Additional Study Material

Required reading

Bengtsson Lars, *Elektriska mätsystem och mätmetoder*, Studentlitteratur, 2012, Pages 416 (645).