Mittuniversitetet
MID SWEDEN UNIVERSITY

Course Syllabus:

Electronics MA, Sensor Devices, 6 Credits

General data

Code	EL004A
Subject/Main field	Electronics
Cycle	Second cycle
Credits	6.00
Progressive specialisation	Second cycle, has second-cycle course/s as entry requirements
Answerable department	Faculty of Science, Technology and Media
Established	2007-04-03
Date of change	2015-03-04
Version valid from	2013-08-15

Aim

Give a general understanding of the working principles and design of different types of sensors. Be able to describe the physical and technological limitations for a given type of sensor and for a given measurement situation select the most suitable type of sensor.

Course of objectives

After completion of the course you should at least be able to:
- Outline the manufacturing process for a type of sensor
- Propose a suitable sensor for a given measurement situation
- Evaluate the technological and physical limitations of a specific sensor
- Explain the function of a sensor
- Identify the type of sensor form a given classification

Content

The course contains:
- Classification and terminology for sensors
- Manufacturing process for sensors
Also acoustic, mechanical, magnetic, radiation, thermo, chemical, and biological sensors will be treated. A large number of application examples are included to high-light the function for a specific sensor. Integration of sensors and read-out electronics will be treated as well. In the laborations there will be opportunities to use and characterise som of the sensor types.

Entry requirements

Electronics, 30 credits, including analog electronics and measurement technology

Selection rules and procedures

The selectionprocess is in accordance with the Higher Education Ordinance and the local order of admission.

Teaching form

The course includes lectures and laborations.

Examination form

5.0 hp, T100: Written Exam
Grade: A, B, C, D, E, Fx, and F. A-E are passing grades, Fx and F are failing grades.

1.0 hp, L100: Laboratory with a written report
Grade: Grade: Pass (P) or Fail (F)

Grading system

The grades A, B, C, D, E, Fx and F are given on the course. On this scale the grades A through E represent pass levels, whereas Fx and F represent fail levels.

Course reading

Required literature

S.M. Sze, Semiconductor Sensors, 1st, 0-471-54609-7

Meddelas senare