UNIVERSITY OF GOTHENBURG

PHYSICS

FYD112 Electronics 4: Electronic design, 7.5 higher education credits

Elektronik 4: Elektronikkonstruktion, 7,5 högskolepoäng

First Cycle

Confirmation

This course syllabus was confirmed by Department of Physics on 2014-10-14 and was last revised on 2015-09-10 to be valid from 2015-09-10, autumn semester of 2015.

Field of education: Science 100%
Department: Physics

Position in the educational system

Advanced course at the basic level in the main field of study physics with a specialisation in Computer-aided Physical Measurements.

The course can be part of the following programme: 1) Computer Aided Measurements in Physics (N1DAF)

Main field of studies	*Specialization*
Physics	G1F, First Cycle, has less than 60 credits in first-cycle course/s as entry requirements

Entry requirements

FYD101 Electronics 1: Electromagnetism

FYD102 Electronics 2: Analogous Electronics

FYD111 Electronics 3: Digital Technology

Learning outcomes

Knowledge and understanding
On completion of the course, the student should be able to

design a circuit board based on given specifications

Skills and abilities
On completion of the course, the student should be able to

produce a drawing of an electronic design in some CAD program (e.g. Eagle)
convert the drawing to a PCB layout
generate the milling and drilling files that are needed to produce the circuit board
solder components on the circuit board (including surface mounted circuits)
troubleshoot a circuit board

Judgement and approach
On completion of the course, the student should

understand the environment foot print that a circuit board manufacturing means and be able to bear in mind to this in the design

Course content
The course treats computer-aided electronic design from? idea to circuit boards?. We treat circuit board layout, routing, circuit board manufacturing and soldering.

The course consists of a number of lectures and laboratory sessions. No components.

Form of teaching
The teaching consists of lectures, demonstrations and laboratory sessions. The laboratory element in the course be emphasised strongly. Participation in laboratory sessions and demonstrations is compulsory.

Language of instruction: Swedish

Assessment

The course has a number of lectures and laboratory sessions, but is very hands-on oriented. The examination consists of completed designs (i.e. circuit boards). The assessment of the designs quality underlies the grade.

Grades

The grading scale comprises: Pass with Distinction (VG), Pass (G) and Fail (U).
The grading scale for examination includes the grades Fail (U), Pass (G) and Pass with distinction (VG). For grade Pass, it is required that all circuit boards have been taken forward and been presented before exposed deadline. To pass with distinction, all circuit boards should function.

Course evaluation

At the end of the course, a course questionnaire is opened in on the GUL web page of the course. The result of the questionnaire is published on the course homepage and a compilation of course evaluation and any changes in the set-up of the course be communicated the students who start the course next time it be given.