Course syllabus

Digitala verktyg
Digital Systems, Project Laboratory

EITG15, 7,5 credits, G2 (First Cycle)

Valid for: 2023/24
Faculty: Faculty of Engineering, LTH
Decided by: PLED E
Date of Decision: 2023-04-11

General Information

Main field: Technology.
Elective Compulsory for: I3
Language of instruction: The course will be given in Swedish

Aim

- The aim of this course is to illustrate how developing work can be done in the industry.

Learning outcomes

Knowledge and understanding
For a passing grade the student must

- be able to analyse and describe digital system
- be able to test and repair a construction in a systematic way
- be able to look up and assimilate relevant facts.

Competences and skills
For a passing grade the student must

- be able to realize digital system of low and medium complexity
- be able to move a project forward to a working prototype
- be fluent in oral and written communication

Judgement and approach
For a passing grade the student must

- be able to show insight concerning possibilities and limitations of digital systems

Contents

Boolean algebra. States are important concept for construction of digital systems. Syncronous sequential circuits are introduced as a way to realise the behaviour of the state transition graphs.

Digital components: Decoder, memory, AD- and DA-converters, processors, parallel port, serialport and programmable components.

During the main part of the course the students design, develop, build, debug, and document a system of their own choice. A catalogue of suggested projects is available. At the beginning of the course lectures are given in order to support the project activities. Each group of two gets their own lab desk with all the necessary instruments and tools that they can use throughout the course. During office hours supervisors are available for advice and troubleshooting.

Examination details

Grading scale: UG - (U,G) - (Fail, Pass)
Assessment: Approved presentation and documentation of project. Attendance at lectures and laboratory exercises.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

Admission

The number of participants is limited to: No
The course overlaps following course/s: EITF10, EITF11

Reading list

- Manuals and component catalogues are obtainable from the department.

Contact and other information

Course coordinator: Sara Willhammar, sara.willhammar@eit.lth.se
Examinator: Sara Willhammar, sara.willhammar@eit.lth.se
Course homepage: http://www.eit.lth.se/course/eitf12