



Faculty of Technology and Science
Electrical Engineering

Syllabus

Course Approval

The syllabus was approved by the Faculty Board of Technology and Science on 26 February 2010 , and is valid from the Spring semester of 2008 at Karlstad University.

Course Code: ELGA02

Digital Electronics, 7.5 ECTS Credits

(Digitalteknik, 7.5 Swedish credit points)

Degree Level: Bachelor

Increasingly In-depth Study: G1F (First cycle, has less than 60 credits in first-cycle course/s as entry requirements)

Language of Instruction

Swedish

Prerequisites

Introduction to Electrical Engineering ELGA07 or equivalent

Major Field of Study

ETA (Electrical Engineering)

Learning Outcomes

Upon completion of the course, students should be able to:

- give an account of the structure and electrical properties of the most common digital circuit families,
- use methods of analysis and synthesis for combinational and sequential logic circuits,
- interface digital circuits to surrounding electronic systems.

Content and Form of Instruction

Instruction is in the form of lectures, calculation workshops and mandatory laboratory exercises.

Areas treated are:

- digital circuit families and their characteristics,
- combinational logic and special combinational circuits. Karnaugh diagram. Latches and flip-flops,
- synchronous and asynchronous sequential circuits. Iterative sequential circuits. Special sequential circuits,
- semiconductor memories. Programmable logic devices (PLD),
- analogue/digital and digital/analogue converters. Sample-and-hold circuits.

Reading List

See separate document.

Examination

Examination is based on written exams, mandatory laboratory assignments, laboratory reports and hand-in assignments.

Grades

One of the grades U (Fail), 3 (Pass), 4 (Some Distinction), or 5 (Distinction) is awarded in the examination of the course.

Quality Assurance

Follow-up relating to learning conditions and goal-fulfilment takes place both during and upon completion of the course in order to ensure continuous improvement. Course assessment is based on student views and experiences as reported in written course evaluations and/or group discussions. Students will be informed of the result of the evaluation and of the measures to be taken.

Course Certificate

A course certificate will be provided upon request.

Additional Information

Students who enrolled before 1 July 2007 will complete their studies in accordance with the requirements of the earlier admission. Upon completion students may request degree and course certificates to be issued under the current ordinance if they meet its requirements.

The course is mandatory for the Bachelor degree programmes in electrical engineering, mechatronics, music and sound engineering and computer science.

The local regulations for studies at the Bachelor's and Master's levels at Karlstad University stipulate the obligations and rights of students and staff.

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