Evaluation of an Integrated Circuit

Programme course

2 credits

Utvärdering av IC-krets

TSEK11

Valid from: 2017 Spring semester

Determined by
Board of Studies for Electrical Engineering, Physics and Mathematics

Date determined
2017-01-25

Offered for the last time
Autumn semester 2022

Replaced by
TSEK07

Main field of study
Electrical Engineering

Course level
Second cycle

Advancement level
A1X

Course offered for
- Computer Science and Engineering, M Sc in Engineering
- Applied Physics and Electrical Engineering, M Sc in Engineering
- Electronics Engineering, Master's programme
- Information Technology, M Sc in Engineering
- Applied Physics and Electrical Engineering - International, M Sc in Engineering

Entry requirements
Note: Admission requirements for non-programme students usually also include admission requirements for the programme and threshold requirements for progression within the programme, or corresponding.

Prerequisites
To have a chip to evaluate the student must have attended TSEK06 VLSI Design, and sent a chip for fabrication.

Intended learning outcomes
The course is a follow-up of the course TSEK01 VLSI Design, and will give practical knowledge of evaluation of a VLSI chip, including:

- Careful planning for chip evaluation, and identification of effective methods for functionality and performance tests.
- Planning and assembling of printed circuit board (PCB) before the chip measurements.
- Understanding and experience of using high precision measurement equipments in a correct and effective manner.
- Systematic evaluation of a chip including both functionality and performance tests and/or identification of reasons for incorrect operations.

Course content
Test and measurement issues. Fault diagnosis. Evaluation of chip performance.

Teaching and working methods

Introductory lecture and laboratory exercises. The course concentrates on testing and debugging of the integrated circuit, which the student designed in the course VLSI Design. During the second lecture the students give a short presentation of their results. The final report should be handed-in to the supervisor.

Examination

UPG1 A written report describing the result of the task enables 2 credits U, G

Grades are given as 'Fail' or 'Pass'.

Grades

Two-grade scale, U, G

Department

Institutionen för systemteknik

Director of Studies or equivalent

Tomas Svensson

Examiner

Atila Alvanpour

Course website and other links

http://www.isy.liu.se/en/edu/kurs/TSEK11/

Education components

Preliminary scheduled hours: 7 h
Recommended self-study hours: 46 h

Course literature

Additional literature

Books

Jan M. Rabaey, Anantha Chandrakasan, Borivoje Nikolic, *Digital Integrated Circuits* Second Edition (International edition) Prentice Hall
ISBN: ISBN 0-13-120764-4

Compendia

Common rules

Regulations (apply to LiU in its entirety)

The university is a government agency whose operations are regulated by legislation and ordinances, which include the Higher Education Act and the Higher Education Ordinance. In addition to legislation and ordinances, operations are subject to several policy documents. The Linköping University rule book collects currently valid decisions of a regulatory nature taken by the university board, the vice-chancellor and faculty/department boards.

LiU's rule book for education at first-cycle and second-cycle levels is available at http://styrdokument.liu.se/Regelsamling/Innehall/Utbildning_pa_grund-_och_avancerad_niva.