



МИНИСТЕРСТВО НА ОБРАЗОВАНИЕТО И НАУКАТА

Проект BG051PO001-3.1.07-0048 „Актуализиране на учебните планове и програми на специалностите във ФЕТТ, ФТК и МТФ на ТУ-София и създаване на нова съвместна магистърска специалност в съответствие с потребностите на пазара на труда”

DESCRIPTION OF THE COURSE

Name of the course: CAD software for Micro- and Nanodevices	Code: MMTN07.1	Semester: 2
Type of teaching: Lectures, laboratory exercises and seminars	Lessons per week L-1 hours LE-2 hours, S - 1 hour	Number of credits 5

LECTURER:

Assoc. Prof. Dr. Rossen Radonov, phone: 9653115, email: radonov@ecad.tu-sofia.bg, Technical University of Sofia, Faculty of Electronic Engineering and Technologies, Department of Microelectronics

COURSE STATUS IN THE CURRICULUM:

Optional for the students specialty "Microtechnology and nanoengineering" MEng programme of FETT.

AIMS AND OBJECTIVES OF THE COURSE

The purpose of CAD software for Micro- and Nanodevices is to acquaint students with CAD systems in microelectronics that were required as a global industry standard.

DESCRIPTION OF THE COURSE:

The course covers mainly two systems: complete design of analog, digital and digital-to-analog integrated circuits and system design of digital integrated circuits by description by high-level language to the realization of the level layout. For each system are considered the main stages of the design: the introduction of the project, simulation and debugging, optimization, design verification, generation of output file.

PREREQUISITES:

Basic knowledge in the field of semiconductors, theory of electronic circuits, analog and digital electronics, design of electronic circuits and others.

TEACHING METHODS:

Lectures using visual aids. Laboratory work performed under lab. guidance and protocols produced by the students and checked by the teacher. Seminar exercise, analyzing different types of project the problems of integrated circuits. Optionally, students develop a project.

METHOD OF ASSESSMENT:

Written exam in the end of 2nd semester

INSTRUCTION LANGUAGE: Bulgarian**BIBLIOGRAPHY:**

- Hristov M., R. Radonov, B. Donchev, CAD Systems in Microelectronics (in Bulgarian), Technical University of Sofia, Sofia, 2004, ISBN 954-438-410-3.
- Hristov M., R. Radonov, B. Donchev, K. Mihaylova, D. Pukneva, O. Antonova, D. Arabadzhiev, O. Manchev, I. Partenov, Manual for Practical Exercises in CAD Systems in Microelectronics (in Bulgarian), Technical University of Sofia, Sofia, 2004, ISBN 954-438-411-1.
- Nancheva-Philippova, K., M. Hristov, V. Hristov, I. Panayotov, (v)HDL for analyses of electronic hardware (in Bulgarian), Sofia, 2004.