



Европейски съюз



Европейски социален фонд

ОПЕРАТИВНА ПРОГРАМА
„РАЗВИТИЕ НА ЧОВЕШКИТЕ РЕСУРСИ” 2007-2013

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: Microelectronics for Information and Communication Technologies	Code: MMTN10.2	Semester: 2
Type of teaching: Lectures, seminars and laboratory work	Lessons per week L-1 hour, S-1 hour LW-2 hours	Number of credits 5

LECTURER:

Prof. Ph.D. Slavka Tzanova, phone: 9652589, email: slavka@ecad.tu-sofia.bg, Technical University of Sofia, Faculty of Electronic Engineering and Technologies, Department of Microelectronics

COURSE STATUS IN THE CURRICULUM:

Elective for the students specialty "Microtechnology and nanoengineering" MSc programme of FETT.

AIMS AND OBJECTIVES OF THE COURSE

This course is aimed at providing knowledge and skills in the fundamental micro- and nanoelectronics applications for information and communication technologies (ICT). At the end of the course the students will know the functioning principles, main characteristics and parameters, classification and peculiarities of processors, memories, interfaces used in ICT, and they will be able to design parts of ICT systems, applying their knowledge on the fundamentals of submicron technology.

DESCRIPTION OF THE COURSE:

The course treats the functioning principles, the classification and the construction of micro- and nanoelectronic devices and systems for ICT. The emphasis is on the latest developments and trends in the field of digital ICs fabricated in sub-micron technologies. Furthermore, separate specialized modules cover the principles of operation and design of computer and smartphone screens, technological foundations of OLED displays. They are all supported by examples and demos.

PREREQUISITES:

Microelectronics, Fundamentals of computer science

TEACHING METHODS:

Lectures through multimedia presentations including animations and videos. The students work in groups of two or three on one a topic under the guidance of an assistant. Assistant introduces the topic of the practical work, the methods, equipment, software and defines the tasks to be performed.

METHOD OF ASSESSMENT:

Written exam in the end of 2nd semester

INSTRUCTION LANGUAGE: Bulgarian (English is possible also)

BIBLIOGRAPHY:

1. Таков Т., Цанова С., Ангелов Г., Микроелектронна схемотехника, Технически университет-София, ISBN 978-954-438-867-6, 2010.
2. Zhang, G. Q., Roosmalen, A, More than Moore. Creating High Value Micro/ Nanoelectronics Systems, ISBN 978-0-387-75593-9, 2009
3. Hübner, M., Becker, J., Multiprocessor System-on-Chip, Hardware Design and Tool Integration, ISBN 978-1-4419-6460-1, 2011.