



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: Reliability of nanoscale circuits and systems	Code: MMTN07.3	Semester: 2
Type of teaching: Lectures, seminar and laboratory works	Lessons per week: L-1 h, SW – 1 h, LW-2 h	Number of credits: 5

LECTURER(S):

Assoc. prof. PhD Anna Andonova, phone 965 3263, e-mail: ava@ecad.tu-sofia.bg; Technical University of Sofia, Faculty of Electronics, Department "Microelectronics.

Assoc. prof. PhD Georgi Angelov (FEET), phone 9653115, email: angelov@ecad.tu-sofia.bg Department of Microelectronics, Faculty of Electronics, Technical University of Sofia.

COURSE STATUS IN THE CURRICULUM:

Mandatory elective course from the master program specialization "Testing of micro-and nanosystems" specialty "Microtechnology and nanoengineering" for Master of Science degree.

AIMS AND OBJECTIVES OF THE COURSE:

The aim of the course is to teach students of design, evaluation and implementation of schemes and fail-safe systems.

DESCRIPTION OF THE COURSE:

At the end of the course students will: provide solutions and guidelines for dealing with problems of reliability of the scheme, systems, architectures and methodological level, designing reliable systems from unreliable components; Fault-tolerant design architecture modeling failures, assess reliability; know different techniques for fault tolerance and to evaluate their suitability for nanoscale circuits and systems; selecting a mix of two or more specific designs, according to its use and purpose.

PREREQUISITES:

Basic knowledge in technology for micro-and nanosystems, nanomaterials, basic principles and application of micro-and nanosystems, nanocommunicational devices and networks, are necessary.

TEACHING METHODS:

Lectures are held in the hall with multimedia. The laboratory group perform a topic under the guidance of the supervisor.

METHOD OF ASSESSMENT:

Exam at the end of the semester.

TEACHING LANGUAGE:

Bulgarian

BIBLIOGRAPHY:

1. M. Stanisavljevic, • A. Schmid, •Y. Leblebici, Reliability of Nanoscale Circuits and Systems. Methodologies and Circuit Architectures, Springer, 2011.
2. Nanoelectronics and information technologies, Reiner Waser (Ed.), WILEY-VCH, 2012.