



Европейски съюз

ОПЕРАТИВНА ПРОГРАМА
„РАЗВИТИЕ НА ЧОВЕШКИТЕ РЕСУРСИ“ 2007-2013



Европейски социален фонд

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: PROCESSES IN MICRO AND NANOTECHNIQUES	Code: MMTH 10.6	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

LECTURERS:

Assoc. prof. PhD Valentine Videkov, phone 965 3101, e-mail: videkov@tu-sofia.bg; Technical University of Sofia, Faculty of Electronics, Department "Microelectronics" and Assoc. prof. PhD Boriana Caneva, phone 9653663, e-mail: borianatz@tu-sofia.bg, Technical University of Sofia, Faculty of Electronics, Department of "Chemistry".

COURSE STATUS IN THE CURRICULUM: Optional for students in "Microtechnology and nanoengineering" for the academic degree "Master".

AIMS AND OBJECTIVES OF THE COURSE: The aim of the course is to acquaint students with basic technological processes in microelectronics and nanoelectronics technology infrastructure. The course covers the basic requirements for cleanness of the technological environment, equipment for vacuum processes, epitaxy, production of superpure materials, mounting methods and precise handling and others.

DESCRIPTION OF THE COURSE: During the course students will gain knowledge of technology , process , equipment, logistics; technological purity ; clean rooms ; e- beam technologies; processes ion treatment; processes with laser processing ; mechanical lithographs .

PREREQUISITES: Basic knowledge in materials science, physics, chemistry, nanomaterials are required.

TEACHING METHODS: Lectures in classical auditory. There is a possibility for presenting some of the materials with multimedia resources. The course is conducted using site <http://ecad.tu-sofia.bg/procesi-nano>. Attending lectures is selfcontrolled by an electronic. Each visit of lecture brings additional points for the final evaluation. There are additional questions for self preparing. For further questions or clarifications students use the forum in the discipline's web site.

METHOD OF ASSESSMENT: Assessment at the end of the second semester . The evaluation is done by accumulating points from different types of occupations including self-study and the fulfillment of other obligations (attending lectures, laboratory, seminar).

TEACHING LANGUAGE: Bulgarian with possibility for English teaching

BIBLIOGRAPHY:

1. Г. Младенов, Нанотехнологии и наноелектроника, Акад. издателство „Проф. Марин Дринов“, София, 2010.
2. Henrik Bruus, Introduction to nanotechnology, Lyngby, 2004 <http://web-files.ait.dtu.dk/bruus/TMF/publications/books/nnote.pdf>