



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: Methods for analysis of nanoscale objects	Code: MMTN 11.4	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 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:

Elective for students in "Microtechnology and nanoengineering" for the academic degree "Master".

AIMS AND OBJECTIVES OF THE COURSE:

The aim of the course is to familiarize students with the various methods for the study of nanoscale objects and corresponding hardware solutions.

DESCRIPTION OF THE COURSE:

The course presents the basic methods for monitoring and analysis of nanoscale objects, including various types of physical methods and specific implementations such as electron microscopy, microanalysis, spectral analysis, the application of atom force microscopy, etc.

PREREQUISITES:

Basic knowledge in materials science, physics, chemistry, nanomaterials are necessary.

TEACHING METHODS:

Lectures in classical audience. There is a possibility for presenting some of the materials with multimedia resources. The course is conducted using site <http://ecad.tu-sofia.bg/nanoanaliz>. Attending lectures is selfcontrolled by an electronic.

METHOD OF ASSESSMENT:

Current assessment. Evaluation is done by accumulating points from attendance of lectures, laboratories and seminar works. Attend classes gives points and additional homeworks bring extra points. Two tests are conducted.

TEACHING LANGUAGE:

Bulgarian with possibility for English teaching.

BIBLIOGRAPHY:

- 1 Hans-Eckhardt Schaefer, Nanoscience, Springer, 2010
2. Encyclopaedia of Materials Characterization – Surfaces, Interfaces, Thin Films. Edts. C. Richard Brundle, C. A. Evans, Jr. Sh. Wilson, MANNING, 1992.