



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: Devices and Technologies with Compound Semiconductor and Metaloxide Materials	Code: MMTN11.6	Semester: 2
Type of teaching: Lectures, Seminary and Laboratory works	Lessons per week L-1 hour, SW-1 h, LW-2 hours	Number of credits 5

LECTURERS:

Assoc. Prof. PhD Krassimir Denishev, 9653185, email: khd@tu-sofia.bg,
Assist. Prof. Ph.D. Mariya Aleksandrova, phone: 9653085, email: m_aleksandrova@tu-sofia.bg,
Technical University of Sofia, Faculty of Electronic Engineering and Technologies (FETT),
Department of Microelectronics.

COURSE STATUS OF THE CURRICULUM:

Optional course for the students specialty "Microtechnologies and Nanoengineering" MEng programme of Faculty of Electronic Engineering and Technologies (FETT), Faculty of Industrial Technology (FIT) and Faculty of Telecommunications (FTC) at Technical University of Sofia.

AIMS AND OBJECTIVES OF THE COURSE

The purpose of the education on “**Devices and Technologies with Compound Semiconductor and Metaloxide Materials**” is the students to get knowledge on the technological processes, used for creation of structures, devices and blocks, using Compound Semiconductor and Metaloxide Materials, used in Microelectronics and Micro Electro Mechanical Systems (MEMS). The main objects are the parameters and the advantages of the mentioned materials, as well as the typical technological processes. The received knowledge will allow the students to know the parameters of the most frequently used main Compound Semiconductor and Metaloxide Materials and technological processes, used for such materials, as well as to be able to define the necessary processes and procedures for designing and producing of Microelectronics and Mechatronics devices.

DESCRIPTION OF THE COURSE:

In the course, the main parameters and the advantages of the most frequently used Compound Semiconductor and Metaloxide Materials, as well as the necessary technological processes and procedures, for creation of devices in Microelectronics and Micro Electro Mechanical Systems (MEMS), using such materials, are reviewed.

PREREQUISITES:

Physics, Chemistry, Material Science, Nanomaterials, Micro- and Nanosystems Technologies.

TEACHING METHODS:

The lectures are conducted with the aim of visual samples. Laboratory works are carried out by instructions and protocols.

METHOD OF ASSESSMENT: Two control works, during the second semester and **final mark**.

INSTRUCTION LANGUAGE: Bulgarian (English is possible).

BIBLIOGRAPHY:

1. “**Introduction to Microsystem Technology : A Guide for Students**” by Gerald Gerlach, Wolfram Dotzel, Dorte Muller, John Wiley & Sons Inc, ISBN 0470058617, New York, 2008.
2. “**Mechatronics: An Introduction**” by Robert H. Bishop, CRC Pr I Llc, ISBN 0849363586, New York, 2005.