DESCRIPTION OF THE COURSE

Name of the course: **Microelectronic technologies for encoding, recording and reading information**	Code: **MMTN 11.5**	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.

COURSE STATUS IN THE CURRICULUM:

This is an optional course of specialty "Microtechnology and nanoengineering" for Master of Scinse degree.

AIMS AND OBJECTIVES OF THE COURSE:

The aim of the course is to acquire knowledge to students for the application of micro-and nano-technologies for the creation of biometric ID cards and protecting objects and data, data encryption at the hardware level and to gain skills to apply the methods and means of HiTech protection information.

DESCRIPTION OF THE COURSE:

At the end of the course students will be able to: Set stochastic single and group protection; implement stochastic protected by LBR; recorded and read codes from the materials; processed images and logos hidden encrypted data; perform three-dimensional stochastic read/write encrypted data on solids.

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 assistant. The seminars are executed on a given topic. Additional sets on a topic to prepare a referate to be submitted until the end of the course.

METHOD OF ASSESSMENT: Current estimation

TEACHING LANGUAGE:

Bulgarian

BIBLIOGRAPHY:

Nanotechnologies for secure communications, ObservatoryNANO Breifing, 2011 (http://bwcv.es/assets/2011/8/29/Briefing_No.19_Nanotechnologies_for_Secure_Communications.pdf)

Z. Abid, Member, A. Alma'aitah, M. Barua, W. Wang, Efficient CMOL Gate Designs for Cryptography Applications, IEEE transactions on nanotechnology, vol. 8, no. 3, May 2009.