Program	Level of studies		**First cycle**	
	Program name		**Physics**	
Course name	**PHYSICS OF THIN FILMS**			
Course ID	Semester	Course status	ECTS	L+E
PCM7411	**VII**	**MANDATORY**	**4**	**2+0**
Lecturer	**Doc. Dr. Maja Đekić**			
Aims and intended learning outcomes	Course objective is to familiarize students with production methods and properties of thin films. Learning outcomes: 1. Understands methods of thin films production 2. Understands physical properties of thin films 3. Understands different possibilities for thin film applications.			

Course content
INTRODUCTION. Significance of semiconductors. Structure of semiconducting crystals. Bravais lattice . Miller indices. Energy zones in semiconductors. Electrons and holes. Effective mass. Ideal and real semiconductors. Energy spectrum of carriers in real semiconductors. Doping. Elementary theory of doping states. Defects in semiconductors. Intrinsic semiconductors. Extrinsic semiconductors. Statistics of electrons and holes in semiconductors. Density of states. Fermi level. Transport properties. Boltzmann kinetic equation. Relaxation time. Electric conductivity. Hall effect. Thermal conductivity. Thermoelectric effects. Thermomagnetic effects. Magnetoresistance.

Student workload (hours)		Grading	
Lectures and Exercises	30	Assessment method	Points
Exam preparation	40	Test	40
Assignments	30	Paper	40
Other		Final exam	20
Total	100		
		Total	100

Literature
1. T. M. Nenadović i T. M. Pavlović: Fizika i tehnika tankih slojeva, Institut za nuklearne nauke Vinča Univerziteta u Nišu, 1997. 2. M. Ohring: Materials science of thin films, AP, San Diego, 1995.

Remarks