RTU Course "Micro- and Nanotechnologies"

15D01 Elektronikas un vakuumtehn.materiālzinību pr.g.

General data

Code	MMK371
Course title	Micro- and Nanotechnologies
Course status in the programme	Compulsory/Courses of Limited Choice
Course level	Undergraduate Studies
Course type	Academic
Field of study	Medical Engineering
Responsible instructor	Sagalovičs Genādijs
Volume of the course: parts and credits points	1 part, 3.0 Credit Points, 4.5 ECTS credits
Language of instruction	LV
Possibility of distance learning	Not planned
Abstract	The study course deals with materials to be used in micro- and nanotechnologies, their extraction and physical properties depending on the crystallographic structure. The study course explains the technologies used in the manufacturing of micro- and nanomachines: mechanical treatment, epitaxy, lithography, printing, sputtering, and others.
Goals and objectives of the course in terms of competences and skills	
Structure and tasks of independent studies	
Recommended literature	О.Д. Парфенов. Технология микросхем. Москва, Высшая школа, 1989. S. E Lyshevski. Nano- and Microelectromechanical Systems: Fundamentals of Nano- and Microengineering, CRC press, 2000 (BINI bibliotēkā)G. Timp. Nanotechnology, Springer Verlag, 1999 (BIMI bibliotēkā) Brown B., Smallwood R., Barber D., Lawford P., Hose D. Medical physics and biomedical engineering. IOP, Bristol, 1999, 736 lpp. Greivulis Jānis, Raņķis Ivars. Modernas elektronikas pamati. Rīga, "Avots", 1992., 163 lpp. Bhushman B.Springer Handbook of Nanotechnology, Springer 2004, p1189.
Course prerequisites	

Course outline

Theme	Hours
	3
	3
	3
	4
	3
	3
	4
	4
	3
	3
	3
	6
	6

Learning outcomes and assessment

Learning outcomes	Assessment methods

Study subject structure

Part	CP	ECTS	Hours per Week			Tests		
			Lectures	Practical	Lab.	Test	Exam	Work
1.	3.0	4.5	2.0	1.0	0.0		*	