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UNIT PLAN

GRADUATE STUDIES 2016/2017

Approved by the faculty council on 15.06.2016	unit code	

Unit plan name	**Physics with Optoelectronics**

ECTS points	90

Qualifications and professional privileges:

A master has proffesional qualifications to work in field of information-measuring technology, optical communication and research institutions in applied physics.

Learning outcomes

KNOWLEDGE		Reference to main LEARNING OUTCOMES
W01	A master has the expanded knowledge in mathematical physics.	K_W 03, K_W07 - K_W12
W02	A master has a basic knowledge in general and theoretical physics.	K_W01, K_W02, K_W04 - K_W06
W03	A master knows theoretical models of condensed matter physics.	K_W04 - K_W06 K_W13 - K_W22
W04	A master knows the most importamt achievements and actual problems in condensed matter physics and optoelectronics.	K_W04 - K_W06 K_W13 - K_W22
W05	A master knows technological foundations of a modern material science.	K_W04 - K_W06 K_W13 - K_W22
W06	A master has the advanced knowledge of the optical phenomena in various mediums.	K_W04 - K_W06 K_W13 - K_W22
W07	A master knows a basic methods of information processing in optical and optoelectronic systems.	K_W04 - K_W06 K_W13 - K_W22
W08	A master knows principles of operation of experimental equipment for physical researches.	K_W04 - K_W06 K_W13 - K_W22
W09	A master knows how to determine the characteristics of functional materials and parameters of devices.	K_W04 - K_W06 K_W13 - K_W22
W10	A master has a basic knowledge in the issues of the prevention of accidents during physical experiments.	K_W23 K_W24 - K_W26

SKILLS		
U01	A master is able to collect and analyze the science information using communication systems.	K_U01 - K_U22
U02	A master is able to plan and carry out the scientific researches.	K_U01 - K_U04 K_U06 – K_U21
U03	A master is able to determine the characteristics of functional electronics materials.	K_U01 - K_U04 K_U06 – K_U21
U04	A master has exploitation skills of electrical and optical equipment.	K_U01 - K_U04 K_U06 – K_U21
U05	A master is able to calculate the parameters of optoelectronic devices.	K_U01 - K_U04 K_U06 – K_U21
U06	A master is able to use knowledge obtained to develop new devices for functional, nano- and optoelectronics.	K_U01 - K_U04 K_U06 – K_U21
U07	A master is able to use knowledge obtained to develop a fiber-optic devices and telecommunication systems.	K_U01 - K_U04 K_U06 – K_U21
SOCIAL ABILITIES		
K01	A master has the creativity and the ability to conceptual thinking.	K_K06 – K_K09, K_K19
K02	A master is able to present and justify the personal point of view	K_K14 – K_K18
K03	A master is able to use the information technologies for the communication with the scientific community	K_K13, K_K17
K04	A master is aimed to expand personal knowledge and skills	K_K01 – K_K05, K_K16
K05	A master has the legal erudition	K_K10 – K_K12
K06	A master concerned about the environmental safety of physical experiment	K_K13, K_K19

Verification of learning outcomes:

	E–learning	educational games	recitation	fieldwork	labs	individual projects	common projects	discussion	seminar	essay	written exam	tests	other
K_W01--K_W10					X	X		X	X		X	X	
K_U01--K_U07					X	X	X	X	X		X	X	
K_K01-K_K06					X	X		X			X	X	

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