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PROGRAM STUDIÓW MIĘDZYNARODOWYCH
PROGRAM OF INTERNATIONAL STUDIES
Fizyka z OPTOELEKTRONIKĄ / PHYSICS WITH OPTOELECTRONICS
Studia II stopnia stacjonarne / Masters studies
2017/2018

Speciality – Applied physics and nanomaterials
Speciality – Physics and Astronomy
Specialisation – Solid state optoelectronics

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| approved by the faculty council of Physics, Electronics and Computer Systems in DNIPRO NATIONAL UNIVERSITY, Ukraine | unit code | |
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| approved by the faculty council of Faculty of Mathematics, Physics and Technical Science in Pedagogical university, Poland | | |
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| Unit plan name | Solid state optoelectronics |
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|-------------|----|
| ECTS points | 90 |
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Qualifications and professional privileges:

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| <u>A master of Physics has professional qualifications to work in field of information-measuring technology, optical communication and research institutions in applied physics.</u> |
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Learning outcomes

| KNOWLEDGE | |
|------------------|---|
| W01 | A master has the expanded knowledge in mathematical physics. |
| W02 | A master has a basic knowledge in general and theoretical physics. |
| W03 | A master knows theoretical models of condensed matter physics. |
| W04 | A master knows the most important achievements and actual problems in condensed matter physics and optoelectronics, and integrated optics |
| W05 | A master knows technological foundations of a modern material science. |
| W06 | A master has the advanced knowledge of the optical phenomena in various mediums. |
| W07 | A master knows a basic methods of information processing in optical and optoelectronic systems. |
| W08 | A master knows principles of operation of experimental equipment for physical researches. |
| W09 | A master knows how to determine the characteristics of metamaterials, functional and smart materials and parameters of devices. |
| W10 | A master has a basic knowledge in the issues of the prevention of accidents during physical experiments. |
| SKILLS | |
| U01 | A master is able to collect and analyze the science information using communication systems. |
| U02 | A master is able to plan and carry out the scientific researches. |
| U03 | A master is able to determine the characteristics of functional electronics materials. |
| U04 | A master has exploitation skills of electrical and optical equipment. |
| U05 | A master is able to calculate the parameters of optoelectronic devices. |
| U06 | A master is able to use knowledge obtained to develop new devices for functional, nano- and optoelectronics. |
| U07 | A master is able to use knowledge obtained to develop a fiber-optic devices and telecommunication systems. |
| SOCIAL ABILITIES | |
| K01 | A master has the creativity and the ability to conceptual thinking. |
| K02 | A master is able to present and justify the personal point of view |
| K03 | A master is able to use the information technologies for the communication with the scientific community |
| K04 | A master is aimed to expand personal knowledge and skills |
| K05 | A master has the legal erudition |
| K06 | A master concerned about the environmental safety of physical experiment |

Verification of learning outcomes:

| | E – learning | gamesEducational | Recitation | Fieldwork | Labs | Individual projects | Common projects | Discussion | Essay | Oral exam | testsWriting exam/ | Other |
|-----|--------------|------------------|------------|-----------|------|---------------------|-----------------|------------|-------|-----------|--------------------|-------|
| W01 | | | x | | x | x | x | x | x | x | x | |
| W02 | | | x | | x | x | x | x | x | x | x | |
| W03 | | | x | | | x | x | x | x | | | |
| W04 | | | x | | x | x | x | x | x | x | x | |
| W05 | | | x | | | x | x | x | x | | | |
| W06 | | | x | | x | x | x | x | x | x | x | |
| W07 | | | x | | | x | x | x | x | | | |
| W08 | | | x | | | x | x | x | x | x | x | |
| W09 | | | x | | | | | | | | | |
| W10 | | | x | | x | | x | | | | | |
| U01 | | | x | | x | x | x | x | x | x | x | |
| U02 | | | x | | | x | x | x | x | | | |
| U03 | | | x | | x | x | x | x | x | | | |
| U04 | | | x | | | x | x | x | x | x | x | |
| U05 | | | x | | x | x | x | x | x | x | x | |
| U06 | | | x | | | x | x | x | x | | | |
| K01 | | | x | | | x | x | x | | | | |
| K02 | | | x | | | x | x | x | | | | |
| K03 | | | x | | | x | x | x | | | | |
| K04 | | | x | | | x | x | x | | | | |
| K05 | | | | | | x | x | x | | | | |
| K06 | | | x | | | x | x | x | | | | |
| K07 | | | x | | | x | x | x | | | | |

pieczęć i podpis Dziekana / Dean's signature