KAPITAŁ LUDZKI
NARODOWA STRATEGIA SPÓJNOŚCI

Politechnika Świętokrzyska

UNIA EUROPEJSKA
EUROPEJSKI
FUNDUSZ SPOŁECZNY

Projekt współfinansowany ze środków Unii Europejskiej w ramach Europejskiego Funduszu Społecznego

MODULE DESCRIPTION

Module code	**ID1F1**
Module name	**FIZYKA**
Module name in English	**Physics**
Valid from academic year	**2012/2013**

MODULE PLACEMENT IN THE SYLLABUS

Subject	**Computer Science**
Level of education	**1st degree** (1st degree / 2nd degree)
Studies profile	**General** (general / practical)
Form and method of conducting classes	**Full-time** (full-time / part-time)
Specialisation	
Unit conducting the module	**The Department of Telecommunications, Photonics, and Nanomaterials**
Module co-ordinator	**Małgorzata Suchańska, PhD hab., Professor of the University**
Approved by:	

MODULE OVERVIEW

Type of subject/group of subjects	**Basic** (basic / major / specialist subject / conjoint / other HES)
Module status	**Compulsory** (compulsory / non-compulsory)
Language of conducting classes	**Polish**
Module placement in the syllabus - semester	**1st semester**
Subject realisation in the academic year	**Winter semester** (winter / summer)
Initial requirements	**No requirements** (module codes / module names)
Examination	**No** (yes / no)
Number of ECTS credit points	**4**

Method of conducting classes	Lecture	Classes	Laboratory	Project	Other
Per semester	**15**	**15**	**15**		

TEACHING RESULTS AND THE METHODS OF ASSESSING TEACHING RESULTS

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Projekt „Politechnika Świętokrzyska – uczelnia na miarę XXI w.''
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Module target	The aim of the module is to acquaint students with knowledge as regards physics, physical experimental methods and calculation techniques indispensable in solving simple physical properties. Another aim is to prepare a graduate to teamwork in an interdisciplinary environment.

Effect symbol	Teaching results	Teaching methods (l/c/l/p/other)	Reference to subject effects	Reference to effects of a field of study
W_01	A student knows and understands basic physical phenomena and processes occurring in nature.	l/c/l	K_W04	T1A_W01
W_02	A student has general knowledge as regards the fundamentals of physics and its technical applications.	l/c/l	K_W04	T1A_W01
W_03	A student knows and understands a mathematical apparatus to describe basic physical laws.	l/c/l	K_W04	T1A_W01 T1A_W03 T1A_W07
U_01	A student can utilise a mathematical apparatus to solve basic physical problems.	l/c/l	K_U03	T1A_U08 T1A_U09
U_02	A student is able to utilise the laws of physics in technology and everyday life.	l/c/l	K_U01	T1A_U07 T1A_U08 T1A_U09
U_03	A student is able to integrate information selected from various resources.	l/c/l	K_U01	T1A_U01
K_01	A student understands the necessity of lifetime education and raising his/her professional, personal, and social competences.	l/c/l	K_K01	T1A_K01
K_02	A student is aware of and understands non-technical aspects of physical phenomena, including their impact on the environment.	l/c/l	K_K02	T1A_K02

Teaching contents:

Teaching contents as regards lectures

Lecture number	Teaching contents	Reference to teaching results for a module
1	The place and role of physics in modern science and technology.	W_02 U_03 K_01 K_02
2	The elements of classical mechanics.	W_03 U_02 U_03
3	Gravity.	W_01 W_03 K_02
4	The elements of electricity.	W_03 U_01
5	The elements of optics.	W_03 U_02 U_03
6	The elements of acoustics.	W_03 U_02 U_03

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![Kapitał Ludzki - Narodowa Strategia Spójności]

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7	Introduction to quantum mechanics.	W_03 W_02
8	Obtaining a credit for the lectures.	

Teaching contents as regards classes

Class number	Teaching contents	Reference to teaching results for a module
1	The elements of classical physics – solving tasks and problems.	W_03 U_01
2	Gravity – solving tasks and physical problems.	W_01 W_03 U_01
3	The elements of electricity – solving tasks and physical problems.	W_01 W_03 U_01
4	The elements of optics – solving tasks and physical problems.	W_01 W_03 U_01
5	The elements of acoustics – solving tasks and physical problems.	W_01 W_03 U_01
6	Introduction to quantum mechanics – solving tasks and physical problems.	W_01 W_03 U_01
7	The place and role of physics in modern science and technology – multimedia presentations prepared as part of teamwork.	U_03 K_01 K_02
8	A final test.	

Teaching contents as regards laboratory classes

Laboratory class number	Teaching contents	Reference to teaching results for a module
1	The elements of classical mechanics – simulations.	W_01 W_03 U_01
2	Interference of light – practical examination of phenomenon in systems interferometers.	W_02 U_02
3	Examining photodetectors – practical examination of optical elements.	W_02 U_02
4	The elements of electricity – examining basic laws.	W_01 W_03 U_01
5	Gravity and Kepler's laws – simulations of physical phenomena.	W_01 W_03 U_01
6	Deflection and refraction of light, total internal reflection – practical tests.	W_02 U_02
7	Diffraction and interference – simulations of physical properties.	W_01 W_03 U_01
8	A final test.	

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The methods of assessing teaching results

| Effect symbol | Methods of assessing teaching results
(assessment method, including skills – reference to a particular project, laboratory assignments, etc.) |
|---|---|
| W_01 | A multiple-choice test |
| W_02 | A multiple-choice test |
| W_03 | A multiple-choice test |
| U_01 | Completing laboratory exercises and a final test |
| U_02 | Completing laboratory exercises and a final test |
| U_03 | Completing laboratory exercises and a final test |
| K_01 | Making a presentation |
| K_02 | Discussions in groups |

STUDENT'S INPUT

	ECTS credit points	
	Type of student's activity	**Student's workload**
1	Participation in lectures	**15**
2	Participation in classes	**15**
3	Participation in laboratories	**15**
4	Participation in tutorials (2-3 times per semester)	
5	Participation in project classes	
6	Project tutorials	
7	Participation in an examination	
8		
9	**Number of hours requiring a lecturer's assistance**	**45** *(sum)*
10	**Number of ECTS credit points which are allocated for assisted work** *(1 ECTS credit point=25-30 hours)*	**1.8**
11	Unassisted study of lecture subjects	**10**
12	Unassisted preparation for classes	**10**
13	Unassisted preparation for tests	**10**
14	Unassisted preparation for laboratories	**10**
15	Preparing reports	**10**
16	Preparing for a final laboratory test	**5**
17	Preparing a project or documentation	
18	Preparing for an examination	
19	Preparing questionnaires	
20	**Number of hours of a student's unassisted work**	**55** *(sum)*
21	**Number of ECTS credit points which a student receives for unassisted work** *(1 ECTS credit point=25-30 hours)*	**2.2**
22	**Total number of hours of a student's work**	
23	**ECTS credit points per module** *1 ECTS credit point=25-30 hours*	**4**

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24	**Work input connected with practical classes** *Total number of hours connected with practical classes*	**40**
25	**Number of ECTS credit points which a student receives for practical classes** *(1 ECTS credit point=25-30 hours)*	**1.6**

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