

PLAN OF REGULAR STUDIES, FIRST DEGREE

faculty: **PHYSICS**

COMMON SUBJECTS

REGULAR DAILY STUDIES – enrolment 2017/2018

page 1

No.	Subject	Summary figures	Curriculum in respective semesters (hours per week)																					
			Including		I		II		III		IV		V		VI									
			H	pt.	H	pt.	H	pt.	H	pt.	H	pt.	H	pt.										
A. GENERAL SUBJECTS																								
1	English as a foreign language	Lc	120	8			2	2	2	2	2	2	2	2										
2	Computer laboratory I - information technologies	Lc	45	3	3	3																		
3	Physical education	C	60	0	2	0	2	0																
4	Selective subject*		30	2																2	2			
5	Selective subject in the field of humanities*		30	3			2	3																
6	Selective social science subject*		15	2										1	2									
B. BASIC SUBJECTS																								
7	Introduction to higher physics and mathematics	C	30	0	2	0																		
8	Mathematical analysis I	C	60	9	4	5																		
9	Mathematical analysis I	L	60	4	4																			
10	Mathematical analysis II	C	45	5			3	3																
11	Mathematical analysis II	L	30	5			2	2																
12	Algebraic and geometrical methods in physics	C	45	6	3	3																		
13	Algebraic and geometrical methods in physics	L	30	6	2	3																		
14	Fundamentals of physics I – Mechanics	C	45	8	3	4																		
15	Fundamentals of physics I – Mechanics	L	45	8	3	4																		
16	Fundamentals of physics II – Thermodynamics	C	30	5			2	2																
17	Fundamentals of physics II – Thermodynamics	L	30	5			2	3																
18	Fundamentals of physics III – Electricity and magnetism	C	45	7					3	4														
19	Fundamentals of physics III – Electricity and magnetism	L	30	7					2	3														
20	Fundamentals of physics IV – Optics, modern physics	C	45	6							3	4												
21	Fundamentals of physics IV – Optics, modern physics	L	30	6							2	2												
22	Astronomy	L	30	2	2	2																		
23	Fundamentals of programming	Lc	45	5			3	3																
24	Fundamentals of programming	L	30	5			2	2																
C. FIELD SUBJECTS																								
25	Metrology	C	15	2	1	2																		
26	Physics laboratory I - Mechanics, thermodynamics	Lc	45	4			3	4																
27	Physics laboratory I - Electricity and magnetism	Lc	45	4					3	4														
28	Physics laboratory I - Optics, modern physics	Lc	45	4							3	4												
29	Computer laboratory II	Lc	30	2			2	2																
30	Classical and relativistic mechanics	C	30	6							2	3												
31	Classical and relativistic mechanics	L	30	6							2	3												
32	Quantum mechanics foundations	C	30	6													2	3						
33	Quantum mechanics foundations	L	30	6													2	3						
34	Electrodynamics	C	30	6																2	3			
35	Electrodynamics	L	30	6																2	3			
36	Physics of phase transitions	C	30	6													2	3						
37	Physics of phase transitions	L	30	6													2	3						
38	Mathematical methods in physics	C	30	6					2	3														
39	Mathematical methods in physics	L	30	6					2	3														
ELECTIVE SUBJECTS***																								
40	Undergraduate seminar***	S	30	5																	2	5		
41	Monographic lecture***	L	30	4																	2	4		
42	Professional practice after the 4th semester, 3 weeks***	Pr	5	5																	5			
43	BACHELOR THESIS***		6	6																		6		
44	LICENTIATE EXAMINATION																					E		
Sum:			1545	137	29	30	25	26	14	19	14	18	11	21	10	23								

Legend: C-classes, L - lecture, Lc – laboratory classes, Pr -practice, S – seminar

The lecture courses are closed with an **examination**.

Tutorials, laboratories and seminars — **credit and mark**

* - Elective course, ** - elective specialty,

*** - elective courses within specialty

Examination is made

by a bold and underlined figure

H – hours per week

Lectures: Astronomy - credit and mark, English as a foreign language — **credit and mark**.

Introduction to higher physics and mathematics, Physical education — **credit without grade**.

Selective subject*: University-wide elective courses or from another field of study (30 hours, 2 ECTS) **credit without grade**.

Selective subject in the field of humanities*: Language culture / Humanistic subject from another faculty (30 hours, 3 ECTS) - **credit and mark**.

Selective social science subject*: Intellectual property protection, occupational safety / Social subject from another faculty (15 hours, 2 ECTS) - **credit and mark**.

Plan studiów zatwierdzono na Radzie Wydziału w dniu **14 marca 2017** roku.

Zmiany wprowadzono: **09 maja 2017** roku, **06 czerwca 2017** roku..

PLAN OF REGULAR STUDIES, UNDERGRADUAT PROGRAMME

faculty: PHYSICS, speciality: COMPUTER PHYSICS**

REGULAR DAILY STUDIES – enrolment 2017/2018

page. 2

No.	Subject	Summary figures		Curriculum in respective semesters (hours per week)												
		Including		I		II		III		IV		V		VI		
		H	pt.	H	pt.	H	pt.	H	pt.	H	pt.	H	pt.	H	pt.	
		1545	137	29	30	25	26	14	19	14	18	11	21	10	23	
D. SPECIALIZATION SUBJECTS**																
45	Computer graphics	Lc	30			2	2									
46	Computer graphics	L	30			<u>2</u>	2									
47	Numerical methods	Lc	30					2	3							
48	Numerical methods	L	30					<u>2</u>	2							
49	Object oriented programming	Lc	30					2	4							
50	Object oriented programming	L	30					<u>2</u>	2							
51	Databases	Lc	30							2	3					
52	Measurement data analysis	Lc	30							2	3					
53	Measurement data analysis	L	30							<u>2</u>	2					
54	Data structures and algorithms	Lc	30							2	2					
55	Data structures and algorithms	L	30							2	2					
56	Python language in numerical calculations	Lc	30									2	3			
57	Python language in numerical calculations	L	30									<u>2</u>	3			
58	Advanced programming methods	Lc	30									2	3			
59	Introduction to computer simulations	Lc	45											3	4	
60	Introduction to computer simulations	L	30											2	3	
Sum: D			495	43	0	0	4	4	8	11	10	12	6	9	5	7
Sum: A + B + C + D			2040	180	29	30	29	30	22	30	24	30	17	30	15	30
Number of examinations:					3E	4E		4E	3E	3E	4E		2E+	1E		

Legend: C-classes, L - lecture, Lc – laboratory classes, Pr -practice, S – seminar
 The lecture courses are closed with an **examination**
 Tutorials, laboratories and seminars — **credit and mark**

Examination is made by a bold and underlined figure
 H – hours per week
 pt. - ECTS

Lectures:

Data structures and algorithms, Introduction to computer simulations — **credit and mark**
 Professional practice after the 4th semester, 3 weeks, **credit in semester V**
 Bachelor thesis - **credit without grade.**

* - Elective course, ** - elective speciality,
 *** - elective courses within speciality

PLAN OF REGULAR STUDIES, UNDERGRADUAT PROGRAMME

faculty: PHYSICS, speciality: COMPUTER ASTROPHYSICS**

REGULAR DAILY STUDIES – enrolment 2017/2018

No.	Subject	Summary figures		Curriculum in respective semesters (hours per week)												
		Including		I		II		III		IV		V		VI		
		H	pt.	H	pt.	H	pt.	H	pt.	H	pt.	H	pt.	H	pt.	
		1545	137	53	30	25	26	14	19	14	18	11	21	10	23	
D. SPECIALIZATION SUBJECTS**																
45	Astronomical instruments	C	30			2	2									
46	Astronomical instruments	L	30			<u>2</u>	2									
47	Introduction to analysis of astrophysical time series	L	15									1	2			
48	Introduction to analysis of astrophysical time series	L	15									1	1			
49	The physics of stars and the scattered matter	C	30							2	4					
50	The physics of stars and the scattered matter	L	30							<u>2</u>	2					
51	Scientific calculations and numerical methods	C	45									3	3			
52	Observational methods and data analysis in astrophysics	C	30							2	4					
53	Observational methods and data analysis in astrophysics	L	30							2	2					
54	The basics of spherical astronomy and astrometry	C	30					2	4							
55	The basics of spherical astronomy and astrometry	L	30					<u>2</u>	2							
56	Introduction to celestial mechanics and solar system	C	30					2	3							
57	Introduction to celestial mechanics and solar system	L	30					<u>2</u>	2							
58	Systems of stars, the structure of the Universe and cosmology	C	30											2	3	
59	Systems of stars, the structure of the Universe and cosmology	L	30											<u>2</u>	2	
60	Plasma astrophysics	C	15									1	2			
61	Plasma astrophysics	L	15									<u>1</u>	1			
62	Introduction to the compact objects astrophysics	L	30											<u>2</u>	2	
Sum: D			495	43	0	0	4	4	8	11	8	12	7	9	6	7
Sum: A + B + C + D			2040	180	29	30	29	30	22	30	22	30	18	30	16	30
Number of examinations:					3E	4E		4E	3E	3E	4E		4E+	1E		

Legend: C-classes, L - lecture, Lc – laboratory classes, Pr -practice, S – seminar
 The lecture courses are closed with an **examination**
 Tutorials, laboratories and seminars — **credit and mark**

Examination is made by a bold and underlined figure
 H – hours per week
 pt. - ECTS

Lectures:

Observational Methods and Data Analysis in Astronomy — **credit and mark**
 Professional practice after the 4th semester, 3 weeks, **credit in semester V**
 Bachelor thesis — **credit without grade.**

* - Elective course, ** - elective speciality,
 *** - elective courses within speciality

PLAN OF REGULAR STUDIES, UNDERGRADUAT PROGRAMME

faculty: PHYSICS, speciality: GENERAL PHYSICS**

REGULAR DAILY STUDIES – enrolment 2017/2018

page. 3

No.	Subject	Summary figures		Curriculum in respective semesters (hours per week)												
		Including		I		II		III		IV		V		VI		
		H	pt.	H	pt.	H	pt.	H	pt.	H	pt.	H	pt.	H	pt.	
	continued from page 1.	1485	117	29	30	25	26	14	19	14	18	11	16	6	8	
	D. SPECIALIZATION SUBJECTS**															
45	Algebraic and geometrical methods in physics II	C	30			2	2									
46	Algebraic and geometrical methods in physics II	L	15	4		<u>1</u>	2									
47	Differential equations in physics	C	30	5				2	2							
48	Differential equations in physics	L	30					<u>2</u>	3							
49	General chemistry	L	30	3				<u>2</u>	3							
50	History of physics	L	30	3				2	3							
51	Introduction to electronics	C	15	4						1	2					
52	Introduction to electronics	L	30							<u>2</u>	2					
53	Vibrations and waves	L	30	3						2	3					
54	Elements of atomic and nuclear physics	C	30							2	2					
55	Elements of atomic and nuclear physics	L	30	5						<u>2</u>	3					
56	Introduction to physics of solid state	C	30	4								2	2			
57	Introduction to physics of solid state	L	30									<u>2</u>	2			
58	Physics laboratory	Lc	60	5								4	5			
59	Elements of modern physics	L	30	3										2	3	
60	Introduction to computer simulations	Lc	45	4										3	4	
	Sum: D		555	63	0	0	4	4	8	11	9	12	8	14	9	22
	Sum: A + B + C + D		2040	180	29	30	29	30	22	30	23	30	19	30	15	30
	Number of examinations:				3E	4E		4E	4E		4E		4E		3E+	1E

Legend: C-classes, L - lecture, Lc – laboratory classes, Pr -practice, S – seminar
 The lecture courses are closed with an **examination**
 Tutorials, laboratories and seminars — **credit and mark**

Lectures:

History of physics, Vibrations and waves — **credit and mark**
 Professional practice after the 4th semester, 3 weeks, **credit in semester V**
 Bachelor thesis — **credit without grade.**

Examination is made
by a bold and underlined figure
 H – hours per week
 pt. - ECTS

*** - Elective course, ** - elective specialty,**
***** - elective courses within specialty**