

# PLAN OF REGULAR STUDIES, FIRST DEGREE

faculty: PHYSICS

COMMON SUBJECTS

REGULAR DAILY STUDIES – enrolment 2018/2019

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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.										
<b>A. GENERAL SUBJECTS</b>																								
1	English as a foreign language	Lc	<b>120</b>	<b>8</b>			2	2	2	2	2	2	<b>2</b>	2										
2	Computer laboratory I - information technologies	Lc	<b>45</b>	<b>3</b>	3	3																		
3	Physical education	C	<b>60</b>	<b>0</b>	2	0	2	0																
4	Selective subject*		<b>30</b>	<b>2</b>																2	2			
5	Selective subject in the field of humanities*		<b>30</b>	<b>3</b>			2	3																
6	Selective social science subject*		<b>15</b>	<b>2</b>										1	2									
<b>B. BASIC SUBJECTS</b>																								
7	Introduction to higher physics and mathematics	C	<b>30</b>	<b>0</b>	2	0																		
8	Mathematical analysis I	C	<b>60</b>	<b>9</b>	4	5																		
9	Mathematical analysis I	L	<b>60</b>	<b>4</b>	4																			
10	Mathematical analysis II	C	<b>45</b>	<b>5</b>			3	3																
11	Mathematical analysis II	L	<b>30</b>	<b>5</b>			2	2																
12	Algebraic and geometrical methods in physics	C	<b>45</b>	<b>6</b>	3	3																		
13	Algebraic and geometrical methods in physics	L	<b>30</b>	<b>6</b>	2	3																		
14	Fundamentals of physics I – Mechanics	C	<b>45</b>	<b>8</b>	3	4																		
15	Fundamentals of physics I – Mechanics	L	<b>45</b>	<b>8</b>	3	4																		
16	Fundamentals of physics II – Thermodynamics	C	<b>30</b>	<b>5</b>			2	2																
17	Fundamentals of physics II – Thermodynamics	L	<b>30</b>	<b>5</b>			2	3																
18	Fundamentals of physics III – Electricity and magnetism	C	<b>45</b>	<b>7</b>					3	4														
19	Fundamentals of physics III – Electricity and magnetism	L	<b>30</b>	<b>7</b>					2	3														
20	Fundamentals of physics IV – Optics, modern physics	C	<b>45</b>	<b>6</b>							3	4												
21	Fundamentals of physics IV – Optics, modern physics	L	<b>30</b>	<b>6</b>							2	2												
22	Astronomy	L	<b>30</b>	<b>2</b>	2	2																		
23	Fundamentals of programming	Lc	<b>60</b>	<b>5</b>			4	3																
24	Fundamentals of programming	L	<b>15</b>	<b>5</b>			1	2																
<b>C. FIELD SUBJECTS</b>																								
25	Metrology	C	<b>15</b>	<b>2</b>	1	2																		
26	Physics laboratory I - Mechanics, thermodynamics	Lc	<b>45</b>	<b>4</b>			3	4																
27	Physics laboratory I - Electricity and magnetism	Lc	<b>45</b>	<b>4</b>					3	4														
28	Physics laboratory I - Optics, modern physics	Lc	<b>45</b>	<b>4</b>							3	4												
29	Computer data acquisition and processing	Lc	<b>30</b>	<b>2</b>			2	2																
30	Classical and relativistic mechanics	C	<b>30</b>	<b>6</b>							2	3												
31	Classical and relativistic mechanics	L	<b>30</b>	<b>6</b>							2	3												
32	Quantum mechanics foundations	C	<b>30</b>	<b>6</b>										2	3									
33	Quantum mechanics foundations	L	<b>30</b>	<b>6</b>										2	3									
34	Electrodynamics	C	<b>30</b>	<b>6</b>												2	3				2	3		
35	Electrodynamics	L	<b>30</b>	<b>6</b>														2	3		2	3		
36	Constitution of matter	C	<b>30</b>	<b>6</b>										2	3									
37	Constitution of matter	L	<b>30</b>	<b>6</b>										2	3									
38	Mathematical methods in physics	C	<b>30</b>	<b>6</b>					2	3														
39	Mathematical methods in physics	L	<b>30</b>	<b>6</b>					2	3														
<b>ELECTIVE SUBJECTS***</b>																								
40	Undergraduate seminar***	S	<b>30</b>	<b>5</b>																	2	5		
41	Monographic lecture***	L	<b>30</b>	<b>4</b>																	2	4		
42	Professional practice after the 4th semester, 3 weeks***	Pr	<b>5</b>	<b>5</b>																	5			
43	<b>BACHELOR THESIS***</b>		<b>6</b>	<b>6</b>																		6		
44	<b>LICENTIATE EXAMINATION</b>																					<b>E</b>		
<b>Sum:</b>			<b>1545</b>	<b>137</b>	<b>29</b>	<b>30</b>	<b>25</b>	<b>26</b>	<b>14</b>	<b>19</b>	<b>14</b>	<b>18</b>	<b>11</b>	<b>21</b>	<b>10</b>	<b>23</b>								

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 **24th April 2018** roku.

Zmiany wprowadzono:

**PLAN OF REGULAR STUDIES, UNDERGRADUAT PROGRAMME**

**faculty: PHYSICS, speciality: COMPUTER PHYSICS\*\***

REGULAR DAILY STUDIES – enrolment 2018/2019

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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	
<b>D. SPECIALIZATION SUBJECTS**</b>																
45	Computer measurement systems	Lc	30	2		2	2									
46	Introduction to scripting languages	Lc	30	2		<u>2</u>	2									
47	Numerical methods	Lc	30	5				2	3							
48	Numerical methods	L	30					<u>2</u>	2							
49	Object oriented programming	Lc	30					3	4							
50	Object oriented programming	L	30	6				<u>1</u>	2							
51	Databases	Lc	30	3						2	3					
52	Measurement data analysis	Lc	30							2	3					
53	Measurement data analysis	L	30	5						<u>2</u>	2					
54	Data structures and algorithms	Lc	30							3	2					
55	Data structures and algorithms	L	30	4						1	2					
56	Signal analysis	Lc	30									2	3			
57	Signal analysis	L	30	6								<u>2</u>	3			
58	Scripting languages in data analysis	Lc	30	3								2	3			
59	Introduction to computer simulations	Lc	45												3	4
60	Introduction to computer simulations	L	30	7											2	3
<b>Sum: D</b>			495	43	0	0	4	4	8	11	10	12	6	9	5	7
<b>Sum: A + B + C + D</b>			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 2018/2019

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	
<b>D. SPECIALIZATION SUBJECTS**</b>																
45	Astronomical instruments	C	30	4		2	2									
46	Astronomical instruments	L	30			<u>2</u>	2									
47	Introduction to analysis of astrophysical time series	L	15	3								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	6						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	3			
52	Observational methods and data analysis in astrophysics	C	30	6						2	4					
53	Observational methods and data analysis in astrophysics	L	30							2	2					
54	The basics of spherical astronomy and astrometry	C	30	6				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	5				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	5											2	3
59	Systems of stars, the structure of the Universe and cosmology	L	30												<u>2</u>	2
60	Plasma astrophysics	C	15	3								1	2			
61	Plasma astrophysics	L	15									<u>1</u>	1			
62	Introduction to the compact objects astrophysics	L	30	2											<u>2</u>	2
<b>Sum: D</b>			495	43	0	0	4	4	8	11	8	12	7	9	6	7
<b>Sum: A + B + C + D</b>			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 2018/2019

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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	
	<b>D. SPECIALIZATION SUBJECTS**</b>															
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	Physics of nature	C	30							2	2					
55	Physics of nature	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	
	<b>Sum: D</b>		555	63	0	0	4	4	8	11	9	12	8	14	9	22
	<b>Sum: A + B + C + D</b>		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**