PLAN OF REGULAR STUDIES, GRADUATE PROGRAMME

faculty: PHYSICS, speciality: COMPUTER PHYSICS

REGULAR DAILY STUDIES – enrolment 2015/2016

	Subject		Summary figures Including: H	pt.	Curriculum in respective semmesters (hours per week) I H	pt.	II H	pt.	III H	pt.	IV H	pt.
A. GENERAL SUBJECTS												
1	English	Lab	**30**	**2**	**2**	2						
2	Physical education*	T	**30**	**1**					2	1		
3	Selective subject*		**30**	**2**					2	2		
4	Selective subject in the field of humanities*		**15**	**2**			1	2				
5	Selective social science subject*		**30**	**3**					2	3		
B BASIC SUBJECTS												
6	Physics laboratory II	Lab	**105**	**12**	7	12						
C. FIELD SUBJECTS												
7	Theoretical physics	T	**60**	**10**	4	5						
8	Theoretical physics	L	**45**		**3**	5						
9	Solid state physics	T	**45**	**7**					3	4		
10	Solid state physics	L	**30**						**2**	3		
11	Quantum physics	T	**45**	**7**			3	4				
12	Quantum physics	L	**30**				**2**	3				
13	Nuclear and high energy physics	T	**30**	**6**					2	3		
14	Nuclear and high energy physics	L	**30**						**2**	3		
15	Introduction to atomic and molecular physics	T	**30**	**6**			2	3				
16	Introduction to atomic and molecular physics	L	**30**				**2**	3				
D. SPECIALIZATION SUBJECTS**												
17	Scientific programming in Python / Monte Carlo Methods	Lab	**30**	**6**	2	3						
18	Scientific programming in Python / Monte Carlo Methods	L	**30**		**2**	3						
19	Applications of computer simulations	Lab	**30**	**6**			2	3				
20	Applications of computer simulations	L	**30**				**2**	3				
21	Unix OS programming	Lab	**30**	**3**			2	3				
22	Symbolic programming in physical processes simulations	Lab	**30**	**3**			2	3				
23	Scripting languages in data analysis	Lab	**30**	**3**			2	3				
24	Internet applications programming	Lab	**30**	**4**					2	2		
25	Internet applications programming	L	**15**						**1**	2		
26	Quantum systems simulations	Lab	**30**	**6**							2	3
27	Quantum systems simulations	L	**30**								**2**	3
	ELECTIVE SUBJECTS***											
28	Graduate seminar I	S	**30**	**3**					2	3		
29	Graduate seminar II	S	**30**	**4**							2	4
30	General seminar	S	**30**	**4**							2	4
31	Monographic lecture I	L	**30**	**4**					**2**	4		
32	Monographic lecture II	L	**30**	**4**							**2**	4
33	**MASTER'S THESIS**			**12**								12
34	**MAGISTER EXAMINATION**										**E**	
	Sum:		**1080**	**120**	**20**	**30**	**19**	**28**	**22**	**30**	**10**	**30**
	NUMBER OF EXAMINATIONS				**2E**		**3E**		**4E**		**2E+**	**E**

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

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

Subjects:
Graduate seminar I, II, General seminar — credit and mark.
Physical education - credit without grade.
Selective subject*: Variety in unity in biological sciences, University-wide elective courses or from another field of study (30 hours, 2 ECTS) - credit without grade.

*** - selective subjects,**
**** - specialty-related elective courses,**
***** - elective courses within specialty**

Selective subject in the field of humanities*: Philosophy of nature / Humanistic subject from another faculty (15 hours, 2 ECTS) - credit and mark.

Selective social science subject*: Elements of economics / Social subject from another faculty (30 hours, 3 ECTS) - credit and mark.

Plan studiów zatwierdzono na Radzie Wydziału w dniu
Zmiany wprowadzono:

PLAN OF REGULAR STUDIES, GRADUATE PROGRAMME

faculty: PHYSICS, speciality: ENVIRONMENTAL PHYSICS

REGULAR DAILY STUDIES – enrolment 2015/2016

	Subject		Summary figures		Curriculum in respective semmesters (hours per week)							
			Including:		I		II		III		IV	
			H	pt.	H	pt.	H	pt.	H.	pt.	H	pt.
A. GENERAL SUBJECTS												
1	English	Lab	**30**	**2**	2	2						
2	Physical education*	T	**30**	**1**					2	1		
3	Selective subject*		**30**	**2**					2	2		
4	Selective subject in the field of humanities*		**15**	**2**			1	2				
5	Selective social science subject*		**30**	**3**					2	3		
B. BASIC SUBJECTS												
6	Physics laboratory II	Lab	**105**	**12**	7	12						
C. FIELD SUBJECTS												
7	Theoretical physics	T	**60**	**10**	4	5						
8	Theoretical physics	L	**45**		**3**	5						
9	Solid state physics	T	**45**	**7**					3	4		
10	Solid state physics	L	**30**						**2**	3		
11	Quantum physics	T	**45**	**7**			3	4				
12	Quantum physics	L	**30**				**2**	3				
13	Nuclear and high energy physics	T	**30**	**6**					2	3		
14	Nuclear and high energy physics	L	**30**						**2**	3		
15	Introduction to the physics of atoms and particles	T	**30**	**6**			2	3				
16	Introduction to the physics of atoms and particles	L	**30**				**2**	3				
D. SPECIALIZATION SUBJECTS**												
17	Modern experimental physics	L	**15**	**2**	**1**	2						
18	Computer assistance for experiments	Lab	**30**	**4**	2	4						
19	Computational methods in environmental physics	T	**30**	**3**			2	3				
20	Computer simulations	Lab	**30**	**7**			2	4				
21	Computer simulations	L	**30**				**2**	3				
22	Environmental chemistry	Lab	**15**	**5**			1	2				
23	Environmental chemistry	L	**30**				**2**	3				
24	Advanced spectroscopic methods	T	**30**	**4**					2	2		
25	Advanced spectroscopic methods	L	**15**						**1**	2		
26	Antennas radiation	Lab	**30**	**4**							2	2
27	Antennas radiation	L	**30**								**2**	2
28	Ionizing radiation and radiological protection	L	**30**	**2**							2	2
	ELECTIVE SUBJECTS***											
29	Graduate seminar I	S	**30**	**3**					2	3		
30	Graduate seminar II	S	**30**	**4**							2	4
31	General seminar	S	**30**	**4**							2	4
32	Monographic lecture I	L	**30**	**4**					**2**	4		
33	Monographic lecture II	L	**30**	**4**							**2**	4
34	**MASTER'S THESIS**			**12**								12
35	**MAGISTER EXAMINATION**										**E**	
	Sum:		**1080**	**120**	**19**	**30**	**18**	**28**	**22**	**30**	**12**	**30**
	NUMBER OF EXAMINATIONS				**2E**		**4E**		**4E**		**2E+**	**E**

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

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

Subjects:
General seminar, Graduate seminar I, II — credit and mark.
Lonizing radiation and radiological protection — credit and mark.

*** - selective subjects,**
****- specialty-related elective courses,**
***** - elective courses within specialty**

Selective subject*: Variety in unity in biological sciences, University-wide elective courses or from another field of study (30 hours, 2 ECTS) - credit without grade. **Physical education - credit without grade.**

Selective subject in the field of humanities*: Philosophy of nature / Humanistic subject from another faculty (15 hours, 2 ECTS) - credit and mark.

Selective social science subject*: Elements of economics / Social subject from another faculty (30 hours, 3 ECTS) - credit and mark.

Plan studiów zatwierdzono na Radzie Wydziału w dniu
Zmiany wprowadzono:

PLAN OF REGULAR STUDIES, GRADUATE PROGRAMME

faculty: PHYSICS, speciality: THEORETICAL PHYSICS

REGULAR DAILY STUDIES – enrolment 2015/2016

	Subject		Summary figures		Curriculum in respective semmesters (hours per week)							
			Including:		I		II		III		IV	
			H	pt.	H	pt.	H	pt.	H	pt.	H	pt.
A. GENERAL SUBJECTS												
1	English		**30**	**2**	2	2						
2	Physical education*		**30**	**1**					2	1		
3	Selective subject*		**30**	**2**					2	2		
4	Selective subject in the field of humanities*		**15**	**2**			1	2				
5	Selective social science subject*		**30**	**3**					2	3		
B. BASIC SUBJECTS												
6	Physics laboratory II	Lab	**105**	**12**	7	12						
C. FIELD SUBJECTS												
7	Theoretical physics	T	**60**	**10**	4	5						
8	Theoretical physics	L	**45**		**3**	5						
9	Solid state physics	T	**45**	**7**					3	4		
10	Solid state physics	L	**30**						**2**	3		
11	Quantum physics I	T	**45**	**7**			3	4				
12	Quantum physics I	L	**30**				**2**	3				
13	Nuclear and high energy physics	T	**30**	**6**					2	3		
14	Nuclear and high energy physics	L	**30**						**2**	3		
15	Introduction to the physics of atoms and particles	T	**30**	**6**			2	3				
16	Introduction to the physics of atoms and particles	L	**30**				**2**	3				
D. SPECIALIZATION SUBJECTS*												
17	Mathematical methods in physics	Lab	**30**	**6**	2	4						
18	Mathematical methods in physics	L	**15**		**1**	2						
19	Packages for symbolic computations	Lab	**30**	**3**			2	3				
20	Computer simulations	Lab	**30**	**7**			2	4				
21	Computer simulations	L	**30**				**2**	3				
22	Statistical physics	T	**30**	**5**			2	3				
23	Statistical physics	L	**15**				1	2				
24	Quantum physics II	T	**30**	**4**					2	2		
25	Quantum physics II	L	**15**						**1**	2		
26	Field theory	T	**30**	**4**							2	2
27	Field theory	L	**30**								**2**	2
28	Elementary particle physics	L	**30**	**2**							2	2
	ELECTIVE SUBJECTS**											
29	Graduate seminar I	S	**30**	**3**					2	3		
30	Graduate seminar II	S	**30**	**4**							2	4
31	General seminar	S	**30**	**4**							2	4
32	Monographic lecture I	L	**30**	**4**					**2**	4		
33	Monographic lecture II	L	**30**	**4**							**2**	4
34	**MASTER'S THESIS**			**12**								12
35	**MAGISTER EXAMINATION**										**E**	
	Sum:		**1080**	**120**	**19**	**30**	**19**	**30**	**22**	**30**	**12**	**30**
	NUMBER OF EXAMINATIONS				**2E**		**3E**		**4E**		**2E+**	**E**

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

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

Subjects:
General seminar, Graduate seminar I, II — credit and mark.
Lectures: Statistical physics, Elementary particle physics - credit and mark

*** - selective subjects,**
**** - specialty-related elective courses,**
*****- elective courses within specialty**

Selective subject*: Variety in unity in biological sciences, University-wide elective courses or from another field of study (30 hours, 2 ECTS) - credit without grade. Physical education - credit without grade.

Selective subject in the field of humanities*: Philosophy of nature / Humanistic subject from another faculty (15 hours, 2 ECTS) - credit and mark.

Selective social science subject*: Elements of economics / Social subject from another faculty (30 hours, 3 ECTS) - credit and mark.

Plan studiów zatwierdzono na Radzie Wydziału w dniu
Zmiany wprowadzono:

PLAN OF REGULAR STUDIES, GRADUATE PROGRAMME

faculty: PHYSICS, speciality: COMPUTER ASTROPHYSICS

REGULAR DAILY STUDIES – enrolment 2015/2016

	Subject		figures Including: H	pt.	(hours per week) I H	pt.	II H	pt.	III H	pt.	IV H	pt.
A. GENERAL SUBJECTS												
1	English		**30**	**2**	2	2						
2	Physical education*		**30**	**1**					2	1		
3	Selective subject*		**30**	**2**					2	2		
4	Selective subject in the field of humanities*		**15**	**2**			1	2				
5	Selective social science subject*		**30**	**3**					2	3		
B. BASIC SUBJECTS												
6	Physics laboratory II	Lab	**105**	**12**	7	12						
C. FIELD SUBJECTS												
7	Theoretical physics	T	**60**	**10**	4	5						
8	Theoretical physics	L	**45**		**3**	5						
9	Solid state physics	T	**45**	**7**					3	4		
10	Solid state physics	L	**30**						**2**	3		
11	Quantum physics	T	**45**	**7**			3	4				
12	Quantum physics	L	**30**				**2**	3				
13	Nuclear and high energy physics	T	**30**	**6**					2	3		
14	Nuclear and high energy physics	L	**30**						**2**	3		
15	Introduction to the physics of atoms and particles	T	**30**	**6**			2	3				
16	Introduction to the physics of atoms and particles	L	**30**				**2**	3				
D. SPECIALIZATION SUBJECTS**												
17	Astrophysics I	Lab	**30**	**6**	2	4						
18	Astrophysics I	L	**15**		**1**	2						
19	Astrophysics II	Lab	**30**	**6**			2	3				
20	Astrophysics II	L	**30**				**2**	3				
21	Extragalactic astronomy and cosmology	Lab	**15**	**4**			1	2				
22	Extragalactic astronomy and cosmology	L	**15**				1	2				
23	Astrophysics of compact objects	Lab	**30**	**6**							2	4
24	Astrophysics of compact objects	L	**15**								**1**	2
25	Modern radio astronomy	L	**30**	**2**					2	2		
26	High-energy astrophysics	L	**30**	**2**					**2**	2		
27	Radiative processes in astrophysics	Lab	**45**	**5**			3	3				
28	Radiative processes in astrophysics	L	**30**				**2**	2				
ELECTIVE SUBJECTS***												
29	Graduate seminar I	S	**30**	**3**					2	3		
30	Graduate seminar II	S	**30**	**4**							2	4
31	General seminar	S	**30**	**4**							2	4
32	Monographic lecture I	L	**30**	**4**					**2**	4		
33	Monographic lecture II	L	**30**	**4**							**2**	4
34	**MASTER'S THESIS**			**12**								12
35	**MAGISTER EXAMINATION**										**E**	
	Sum:		**1080**	**120**	**19**	**30**	**21**	**30**	**23**	**30**	**9**	**30**
	NUMBER OF EXAMINATIONS				**2E**		**4E**		**4E**		**2E+**	**E**

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

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

Subjects:
General seminar, Graduate seminar I, II — credit and mark.
Extragalactic astronomy and cosmology, Modern radio astronomy — credit and mark.

*** - selective subjects,**
****- specialty-related elective courses,**
***** - elective courses within specialty**

Selective subject*: Variety in unity in biological sciences, University-wide elective courses or from another field of study (30 hours, 2 ECTS) - credit without grade. **Physical education - credit without grade.**

Selective subject in the field of humanities*: Philosophy of nature / Humanistic subject from another faculty (15 hours, 2 ECTS) - credit and mark.

Selective social science subject*: Elements of economics / Social subject from another faculty (30 hours, 3 ECTS) - credit and mark.

Plan studiów zatwierdzono na Radzie Wydziału w dniu
Zmiany wprowadzono: