PLAN OF REGULAR STUDIES Enrollment 2019/2020

Subject area of studies: PHYSICS

duration: 6 semesters

## FACULTY OF PHYSICS AND ASTRONOMY

University of Zielona Góra

Type of studies: **REGULAR DAILY FIRST DEGREE** 

			Number :	Form of			Semes	ter 1				Semester 2				Se	emest	ter 3				Semes	ter 4				Seme	ster 5			S	Semeste	r 6	ECTS  ECTS
No.		SUBJECT	Number of teaching ECTS	Form of receiving a	For	m of in	struction	Form o	f	Form	of instr	ruction Forn	of	I	Form of	instruc	ction	Form of		Form	of in	struction			Fori	m of inst	uction	Form of			m of instr			
110.		Se <b>Bel</b> e I	hours	credit	L	Т	D L/S	receivin a credi		L	Т	L/S receive	-	TS	L T	D	L/S	receiving a credit	ECTS	L	Т	D L/S	receiving a credit	ECTS	L	Т	L/S	receiving a credit	ECTS	L	T D	T /C	receiving a credit	ECTS
1	,	A. GENERAL SUBJECTS	0 (	0																														
2	]	Foreign language	120 8	8 c/mc/mc/ mE								30 c/ı	n 2	2			30	c/m	2			30	c/m	2			30	Е	2					
3		Computer laboratory I - information technologies	45 3	3 c/m								45 c/ı	n 3	3																				
4		Physical education	60 (	0 cc		30		c	0		30	С	(	)																				
5		Selective subject in the field of humanities*	30 3	3 c/m						30		c/ı	n 3	3																				
6		Selective social science subject*	15 2	2 c/m																					15			c/m	2					
7	]	B. BASIC SUBJECTS	0 (	0																														
8		Introduction to higher physics and mathematics	30 (	0 c		30		c	0																									
9		Mathematical analysis I	120	9 E c/m	60	60		E c/m	9																									
10	lal	Mathematical analysis II	75 5	5 E c/m						30	45	E c	m 5	5																				
11	ioi	Algebraic and geometrical methods in physics	75 6	6 E c/m		45		E c/m	_																									
12		Fundamentals of physics I – Mechanics	90 8	8 E c/m	45	45		E c/m	8							$\perp \perp$																		
13	dir	Fundamentals of physics II – Thermodynamics	60 5	5 E c/m	l					30	30	E c	m 5	5		$\perp$					_						4					44		
14	ರ	Fundamentals of physics III – Electricity and magnetism	75 7	7 E c/m										3	30 45	5		E c/m	7															
15	6.)	Fundamentals of physics IV – Optics, modern physics	75	6 E c/m																30	45		E c/m	6										
16		Astronomy	30 2	2 c/m						30		c/1	n 2	2																				
17	module	Fundamentals of programming	75 5	5 E c/m	15		60	E c/m	5																									
18	po	C. FIELD SUBJECTS	0 (	0																														
19		Metrology	15 2	2 c/m		15		c/m	2																									
20	cts	Physics laboratory I - Mechanics, thermodynamics	45 4	4 c/m								45 c/1	n 4	1																				
21		Physics laboratory I - Electricity and magnetism	45 4	4 c/m													45	c/m	4															
22	ns	Physics laboratory I - Optics, modern physics	45 4	4 c/m	<b>I</b>										_							45	c/m	4								44		<u> </u>
23	[a]	Computer data acquisition and processing	30 2	2 c/m	l		$\perp$					30 c/ı	n 2	2																	$\perp$	44		
24	- E	Classical and relativistic mechanics	60 6	6 E c/m	<b>I</b>										_					30	30		E c/m	6								44		<u> </u>
25	Je	Quantum mechanics foundations	60 6	6 E c/m	l		$\perp$																		30	30		E c/m	6		$\perp$	44		
26	<u> </u>	Electrodynamics	60 6	6 E c/m	l																									30	30	44	E c/m	6
27	_	Constitution of matter	60 6	6 E c/m	<b>I</b>																				30	30		E c/m	6			44		<u> </u>
28	-	Mathematical methods in physics	60 6	6 E c/m	<b>I</b>									3	30 30	)		E c/m	6													44		<u> </u>
29		Fundamentals of geophysics	45 3	3 c/m c/m	l						_		_			$\perp$					_				30		15	c/m c/m	3			44		<u> </u>
30	-	ELECTIVE SUBJECTS	0 (	0	l						_		_			$\perp$					_						4					44		<u> </u>
31	_	Undergraduate seminar***		5 c/m	<b>I</b>										_																	30	c/m	5
32	_	Monographic lecture***	30 4	4 E	<b>I</b>										_															30		44	Е	4
33	-	Professional practice after the 4th semester, 3 weeks***	0 5	5 c	l																							c	5		$\perp$	44		
34	-	BACHELOR THESIS***	0 8	8	l		$\perp$									$\perp$											_		-					8
35		LICENTIATE EXAMINATION	0 (	0 E	l	$\vdash$	$\perp$								-	$\perp$											+	1					Е	
1		Numerical methods	60 4	4 E c/m	I	$\sqcup$	$\perp$	1	_	30		30 E c	m 4			+	1-										_	1	<u> </u>			41		
2	T W	Object oriented programming Data structures and algorithms Computer measuring systems Measurement data analysis Modeling phenomena in nature Signal analysis	60 6	6 E c/m	I	$\vdash$	+	1	-						15	+	45	E c/m	6								-	1	-					
3 4		Data structures and algorithms	60 5 30 2	5 c/m c/m 2 c/m	l	$\vdash$	+		+						15	+	45	c/m c/m	5			30	c/m	2			-							
5	YS	Measurement data analysis	60 5	2 c/m 5 E c/m	l⊢	$\vdash$	+	1	-							+	$\vdash$			30			E c/m				+	1	-					
6	H	Modeling phenomena in nature	60 5	5 E c/m	╽┠─	$\vdash$	+	+	-						_	+				30			E c/m				+	+	<del>                                     </del>					
7		Signal analysis	60 6	6 E c/m		<del>   </del>	+		+							+				30		30	L C/III	3	30		30	E c/m	6					
8		Introduction to computer simulations	75 7	7 c/m c/m	l⊢		$\neg$		1						$\dashv$	+									-		+			30		45	c/m c/m	7

			Number of		Form of		S	emeste	r 1			Sem	ester 2				Semo	ester 3				Seme	ster 4				Seme	ester 5			;	Semes	er 6
No.		SUBJECT	teaching	ECTS	receiving a	Forn	n of instru	iction	Form of		Form of	instructi	on Form	of	Forn	n of ins	structio	n Form of			n of in	struction	1 Form	f	Fori	m of inst	truction	n Form of		Form	of inst	ruction	Form of
110.		SUBJECT	hours	LCID	credit	Ι.	T D	L/S	receiving	ECTS	L T	DI	/S receiv	~	I.	т	D L	receiving	~	I.	т	D L/		g ECTS	I.	т	D L/	receiving	ECTS	Ι.	тг	L/S	receiving ECTS
						-	1   D	Lo	a credit				a cie		-	1	D L	a credit		L	•	D L	a cred	t		, ,	D L	a credit		L		L/S	a credit
1		Astronomical instruments	60	4	E c/m						30 30		E c/	m 4			_		1														
2	$\mathbf{S}$	Introduction to analysis of astrophysical time series	30	3	c/m c/m			+ +								_	_			20	20		·		15	15	_	c/m c/m	3				
3	ER	The physics of stars and the scattered matter	60	6	E c/m			+ -												30	30		E c/n	1 6									
4		Scientific calculations and numerical methods	45	3	c/m			+								_	_		_			_				45	_	c/m	3				
5	MPU	The physics of stars and the scattered matter Scientific calculations and numerical methods Observational methods and data analysis in astrophysics The basics of spherical astronomy and astrometry	60	6	c/m c/m															30	30		c/m c/	m 6									
6			60	6	E c/m										30			E c/m	6														
7	ည [S	Introduction to celestial mechanics and solar system	60	5	E c/m										30	30		E c/m	5														
8	A	Systems of stars and structure of the Universe	60	5	E c/m																									30	30		E c/m 5
9		Introduction to the compact objects astrophysics	30	2	c/m																									30			c/m 2
1	7.0	Algebraic and geometrical methods in physics II	45	4	E c/m						15   30		E c/	m 4																			
2	SICS	Differential equations in physics	60	5	E c/m										30	30		E c/m	5														
3	$\mathbf{S}$	General chemistry	30	3	E										30			Е	3														
4	PHY	Vibrations and waves	30	3	c/m										30			c/m	3														
5		Introduction to electronics	45	4	E c/m															30	15		E c/n	1 4									
6	<b>AL</b>	Elements of modern physics	30	3	c/m															30			c/m	3									
7	CR.	Physics of nature	60	5	E c/m															30	30		E c/n	n 5									
8	N. N.	Physics laboratory	60	6	c/m																						60	0 c/m	6				
9	GENER	History of physics	30	2	c/m																									30			c/m 2
10		Measurement data analysis	60	5	E c/m																									30		30	E c/m 5
	j	Common subjects	1560	135	1		435	_		30		375		26		210	)	_	19		210	)	-	18		210		٦	24		120		23
		Speciality 1: COMPUTER PHYSICS	465	40	1	$\vdash$	0			0		60		4	1	120		-	11		150		-	12	_	60		-	6		75		7
		Speciality 2: COMPUTER ASTROPHYSICS		40	1	-	0			0		60		4	1	120		-	11		120			12	-	75		-	6		90		7
		Speciality 2: COMI OTER ASTROTHTSICS  Speciality 3: GENERAL PHYSICS	450	40	1	-	0			0		45		4	1	120		-	11		135			12		60		-	6		90		7
		Practice	60	5	1	<u> </u>	-			Ü						120		_			100		_	12				_	Ü		, ,		<u> </u>
		SumCOMPUTER PHYSICS	2085	180	†		435			30	4	135		30		330	)	7	30		360	)		30		270	1	7	30		195		30
		SumCOMPUTER ASTROPHYSICS		180	4		435			30		135		30		330		1	30		330			30	_	285		=	30		210		30
		SumGENERAL PHYSICS		180	<del>-1</del>		435			30		120		30		330		1	30		345			30	_	270		1	30		210		30
		Sum without Practice			_				I																								

Plan studiów został zatwierdzony na Radzie Wydziału dnia 26 marca 2019 roku

Blue color: all selective courses, \* - common selective courses, \*\*\* - common selective courses within speciality

 COMPUTER PHYSIC
 2025
 175

 UTER ASTROPHYSIC
 2025
 175

GENERAL PHYSICS 2010 175

Lectures: Astronomy, Fundamentals of geophysics - credit and mark

COMPUTER ASTROPHYSIC

English as a foreign language - Semesters 2-4- credit and mark.

Introduction to higher physics and mathematics, Physical education- 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, ergonomics / Social subject from another faculty (15 hours, 2 ECTS)- credit and mark.

LectureIntroduction to computer simulations- credit and mark

LectureObservational methods and data analysis in astrophysics- credit and marks

LectureVibrations and waves- credit and mark

Professional practice after the 4th semester, 3 weeks, credit in semester V

Bachelor thesis- credit without grade.