The Doctoral School of Quantitative and Natural Sciences Plan valid from the academic year 2023/2024

Załącznik nr 1.2

								I YEA					AR				II YE					EAR									EAR				IV YEAR							
		Number of hours (total)					I SEM				II SEM					III SEM				IV SEM				V SEM					VI SEM				VII SEM				VIII SEM					
Lp.	. Module (subject) name		L	CA	LB K	es w sw	L	CAI	в ки	V SM	orm of credit	L	CA LE	в кw	SM	orm of credit	L CA	LB P	w sm	orm of credit	L C	A LB	кw s	Sorm of credit	L C.	A LB	кw	orm of credit	L	СА	LB KI	w sm	orm of credit	L	CAL	LB KV	V SM	orm of credit	L CA	A LB	кw s	orm of credit
					-					-	0	bliga	tory s	subje	cts fo	r all F	PhD st	udent	s - A											<u> </u>		-					-					
1	Research ethics and integrity	5	5	0	0 0	0	5			1	zo			1	П					Т					ГГ	Т	П	Т	П	Т		Т						Т			T	T
2	Intellectual Property Law	15	15	0	0 0	0	15				zo																													┿┥		+
-	Total A	20	20	0	0 0		20	0	0 0	0	0	0	0 0	0	0	0 0	0 0	0	0 0	0	0 0	0	0	0	0 0	0	0	0 0	0	0	0 0	0	0	0	0	0 0	0	0	0 0	0	0	0 0
	A block of obligatory subjects for all PhD students of DSQNS - B																																									
1	Preparation of scientific publications	10	0	0	0 0	0 10	T			1				T	10	zo									П																T	T
2	Financing research from external sources	15	5	0	0 0) 10						5		-	10	zo																								+		+
3	An interdisciplinary team building	15	0	0	0 0) 15									15	zo																								+ +		+
4	Scientific Entrepreneurship	10	0	0	0 0) 10					zo			-	10	zo																								+		+
5	Public speaking and presentations	15	0	0	0 1	5 0								15		zo																								+		+
6	Modern methods and techniques of academic teaching	20	0	0	0 2	0 0												:	20	zo																				+ +		-
7	Trends and prospects in quantitative and natural sciences	35	35	0	0 0	0 0	5		-	-	zo	5	-			zo 5	5		-	zo	5			zo	5	-		zo	5		-		zo	5	-		-	zo	-	+ +		+
8	English in quantitative and natural sciences	60	0	0	0 6	0 0			30	,	zo			30		Е																								+		-
9	Reporting interdisciplinary conference (presentations of PhD students in English)	30	0	0	0 0) 30													15	zo																	15	zo		++		-
10	Specialist lecture (scientist's workshop) #	30	30	0	0 0) 0											_ _					2x15=3	30*			_							zo							+ +		-
	Total B	240	70	0	0 9	5 75	5	0	0 30	0	0	10	0 0	45	45	0 5	5 0	0	20 15	0	5 0	0	0	0	5 0	0	0	0 0	5	0	0 0	0	0	5	0	0 0	15	0	0 0	0	0	0 0
# two esse the S	two lectures to choose in the education cycle - every semester the school director proposes one lecture from the list: Modern techniques of optical microscopy, Photobiophysics, Biophysical methods in structural biology, Basics of microscopy, A survey of single-molecule techniques in chemical biology, Superconductivity and superfluidity: the ssence of the phenomenon and applications, Global environmental problems, Biophysics, Short history of the Universe -from Big Bang to extrasolar planets, Theory of black holes and wormholes, Fundamental interactions (towards the unification theories), Spectroscopic methods. The list of lectures may be extended to include subjects approved by performed.																																									
	A block of optional subjec	ts for all	PhD	stud	ents (of DS	QNS	- C (F	hD st	uden	t is ob	liged	to co	mplet	e at le	ast 30	0 hours	s in the	e educa	ation o	cycle,	to be :	selecte	d from	the list	anno	unced	before	e the l	begin	ining c	of the	year)									
1	Soft skills (kształtowanie umiejętności miękkich), e.g. voice emission,stress	15	Π			15	Γ		T													15											zo						T			Τ
2	Ways of data presentation	15				15																15											zo							+		
3	Academic teaching (at the discretion of the Dean: participation in the preparation of classes for first- and second-cycle students, assistance in conducting laboratory and seminar classes for first- and second-cycle students, independent conducting of classes the deateent entrient.	30			30		Ì															30											zo									
	Total C - A PhD student is obliged to implement min. 30 hours in the education	30	0	0	0 0	0 0	0	0	0 0	0	0	0	0 0	0	0	0 0	0 0	0	0 0	0	0 0	0	0	0	0 0	0	0	0 0	0	0	0 0	0	0	0	0	0 0	0	0	0 0	0	0	0 0
	l cycle					-	-																						1													
										ob	ligator	y sub	jects fi	rom th	e disci	ipline d	of biolo	gical s	ciences	- D1																						
1	Trends and perspectives in biological sciences	45	45	0	0 0) 0	15				zo					1	5			zo					15			zo														
2	Seminar - biological sciences	30	0	0	0 0) 30							╈		10	zo							1	o zo								10	zo				1			[]		
3	Ph.D. seminar	120	0	0	0 0) 12	þ			15	zo				15	zo			15	zo			1	5 ZO				15 ZO				15	zo				15	zo		[]	1	is zo
4	Disciplinary seminar	30	0	0	0 0	30				1									30	zo																	1			[]		
5	Data analysis in biological sciences	45	0	0	0 4	5 0	1						1	45		zo								1													1			[]		Τ
	Total D1	270	45	0	0 4	5 18	15	0	0 0	15	0	0	0 0	45	25	0 1	5 0	0	0 45	0	0 0	0	0 2	5 0	15 0	0	0	15 0	0	0	0 0	25	0	0	0	0 0	15	0	0 0	0	0 1	5 0

Total block A+B+C+discipline D1	560	
		obligatory subjects from the discipline of chemical sciences - D2
1 Ph.D. seminar	120	0 0 0 120 15 Z0 15
2 Advanced aspects of chemistry in relation to various specialties	60	60 0 0 0 10 ZO I0
3 Participation in the Institutes' reporting session	15	0 0 15 5 20 5 20 5 20 5 20 5 20 5 20 5 2
4 Statistical methods in chemical sciences	15	0 0 15 0 15 0 15 0 16 17 17 17 17 17 17 17 17 17 17 17 17 17
Razem D2	210	60 0 15 135 10 0 0 15 135 10 0 0 15 135 10 0 0 15 0 10 0 10
Total block A+B+C+discipline D2	500	
		obligatory subjects from the discipline of physical sciences - D3
1 Ph.D. seminar	120	0 0 0 120 15 ZO 15
2 Specialist lecture*	90	90 0 0 0 30 ZO 30 ZO
3 Disciplinary seminar	120	0 0 0 120 15 ZO 15
Razem D3	330	90 0 0 0 240 30 0 0 0 240 30 0 0 0 30 0 0 0 30 0 0 0 0 0 0 0 0
Total block A+B+C+discipline D3	620	
* examples of lecture titles: 1. Experimental methods in nuclear physics; 2. Advanced nu	merical m	ethods; 3. Introduction to cosmology and theory of gravity; 4. Quantum mechanics II; 5. Experimental menthods of solid state physics; 6. Nuclear spectroscopy methods; 7. Elements of quantum field theory in path integral formulation
		obligatory subjects from the discipline of Earth and environmental science - D4
1 Ph.D. seminar	120	0 0 0 120 15 Z0 15
2 Disciplinary seminar	32	0 0 0 32 4 Z0 4 Z
3 Seminar - Earth and environmental sciences	30	0 0 0 30 15 ZO 15 ZO 15 ZO
4 Optional disciplinary subject **	45	45 3x15=45 ZO
Total D4	227	0 0 0 182 0 0 182 0 0 0 182 0 0 0 19 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Total block A+B+C+discipline D4	517	
** course titles: Spatial analyzes in Earth and environmental sciences; Modeling of methods in Earth and environmental sciences (after starting education, the doctor	processe al student	s in Earth and environment sciences; Electronic sources of information in earth and environmental sciences; Techniques of obtaining spatial data; Programming in Earth and environmental sciences Aaplications; Creating and using databases; Statistical declares the choice of at least 3 subjects in a total at least 45 hours). The list of subjects may be extended to include subjects approved by the School Council.
	-	obligatory subjects from the discipline of Agriculture and Horticulture - D5
1 Current problems of agriculture	30	30 0 0 0 15 ZO 15
2 Environmental microbiology with elements of biotechnology	30	30 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
3 Ph.D. seminar	120	0 0 0 120 15 ZO 15
4 Dyscyplinary seminar	30	0 0 0 30 5 ZO 5 Z
5 Statistical methods in scientific research	30	
Total D5	240	60 0 1 80 15 0 0 50 0 15 0 15 0 0 15 0 0 15 0 15 0 0 15 0 0 15 0 0 10 0 0 0
Total block A+B+C+discipline D5	530	

Symbols: L - lecture, CA - classes, LB - laboratory classes and practices, KW - seminar, SM - seminar, E - exam, ZO - pass with grade