Załącznik nr 2.1 do Uchwały Senatu Nr XXV-24.4/23 z dnia 29 marca 2023 r.

Plan studiów obowiązujący od roku akademickiego 2023/2024

KIERUNEK: **BIOLOGIA**
Specjalność: **Molecular Biology**
Poziom studiów: **II stopień**
Profil studiów: **ogólnoakademicki**
Forma studiów: **stacjonarne**

O/El	Lp.	Name of the module (course)	ECTS	Hours (total)						Year I													Year II												
					Type of classes					1							2						3							4					
				Sum	WY	CA	LB	KW	SM	WY	CA	LB	KW	SM	Exam form	ECTS	WY	CA	LB	KW	SM	Exam form	ECTS	WY	CA	LB	KW	SM	Exam form	ECTS	WY	CA	LB	KW	SM	Exam form	ECTS
		Obligatory courses - A																																	
		Main courses																																	
O	1	Advanced biochemistry BN	5	60	20		40			20		40			E	5																			
O	2	Regulation of cellular processes BN	4	45	15		30			15		30			E	4																			
O	3	Analysis of biomolecules BN	4	45			45					45			Pg	4																			
O	4	Molecular evolution	1	15	15					15					Pg	1																			
O	5	Statistical methods in biology	2	30			30					30			Pg	2																			
O	6	Innovations in environmental microbiology and sustainable development BN	1	15	15												15					Pg	1												
O	7	Biochemical and molecular ecology BN	3	45	15		30										15		30			E	3												
O	8	Molecular biology in entrepreneurship NHS	1	15				15																		15		Pg	1						
O	9	Synthetic biology	2	30				30																									30		E	2
		Main courses with elective modules																																	
O	10	Advanced molecular biology[A] BN	6	60	20		40			20		40			E	6																			
O	11	Molecular microbiology[B] BN	5	60	20		40			20		40			E	5																			
O	12	Bioinformatics[C] BN	6	60			60												60			E	6												
O	13	**Foreign language**	4	60				60												30		Pg	2			30		E	2						
O	14	**Diploma seminar (I module - Writing and presentation of scientific papers)**	3	30					30					30	Pg	3																			
O	15	**Diploma thesis and final exam**	8																																E	8
		Sum A	55	570	120	0	315	105	30	90		225		30		30	30		90	30			12			0	45	0		3			0	30	0		10
		Elective courses/modules - B																																	
		Elective courses for obligatory courses A-C (choice 1 of 2 for each course)																																	
		Elective courses for [A]	**3**	**30**																				**10**		**20**			**E**	**3**						
El	16	Protein bioengineering BN *or*		30	10		20																												
El	17	Current topics in cell signaling BN		30				30																											
		Elective courses for [B]	**3**	**30**													**15**		**15**			**E**	**3**												
El	18	Microbial infectivity, drug resistance and diagnostics BN *or*		30	15		15																												
El	19	Microbial genomics BN		30	15		15																												
		Elective courses for [C]	**3**	**30**															**30**			**E**	**3**												
El	20	Next-generation sequencing and beyond BN *or*		30			30																												
El	21	Molecular modelling BN		30			30																												
		Module I *or* Module II - choice 1 of 2 (4 courses, 45 hours each)	**16**	**180**	**60**		**120**																	**30**		**60**			**Pg**	**8**	**30**		**60**			**Pg**	**8**
El		**Module I: Molecular biology for environment and industry**																																	
	22	Molecular mechanisms of adaptation BN		45	15		30																												
	23	Biocatalysis and biotransformation BN		45	15		30																												
	24	Industrial microbiology BN		45	15		30																												
	25	Biological control of plants BN		45	15		30																												
El		**Module II: Molecular biology for medicine**																																	
	26	Medical genetics and molecular diagnostics BN		45	15		30																												
	27	Cellular and molecular immunobiology BN		45	15		30																												
	28	Development of biomolecules with desired characteristics BN		45	15		30																												
	29	Tumor biology BN		45	15		30																												
El	30	Diploma seminar II and III	6	60																							30	Pg	3					30	Pg	3
El	31	Research project BN*	26	380			380												100			Pg	8			140			Pg	9			140			Pg	9
El	32	Other elective courses - courses to be chosen from the given list	3	60																		Pg	3													
El	33	Academic lecture	1	15	15												15					Pg	1													
El	34	Elective courses in Humanities and Social Sciences (two courses to be chosen from the given list) NHS	4	60	60																			60					Pg	4						
		Sum B	**65**	**845**	**-**	**-**	**-**	**-**	**-**							0	30		145				18	100		220		30		27	30		200		30		20
		SUM A+B	**120**	**1415**	**-**	**-**	**-**	**-**	**-**	**90**		**225**		**30**		**30**	**60**		**235**	**30**			**30**	**100**		**220**	**45**	**30**		**30**	**30**		**200**	**30**	**30**		**30**
		Hours in a semester/ ECTS in a semester								**345**						**30**			**385**				**30**			**395**				**30**			**290**				**30**
		Hours in a year/ ECTS in a year								**730**													**60**							**685**							**60**

Language of instruction - English

Symbols: WY-lecture, CA-exercises, LB-lab, KW-tutorial, SM-seminar, E-exam, Pg-pass with grade, O - obligatory course, El - elective course

On-line trainings: Work Hygiene and Safety (4 hours), Ethics and Disciplinary Liability of Students (2 hours), Library Training (2 hours)

* Research project is of an experimental nature (praca dyplomowa ma charakter eksperymentalny)

BN courses related to the discipline of biological sciences

Zatwierdzony na posiedzeniu Senatu w dniu: 29 marca 2023 r.