



MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute"
CURRICULUM

APPROVED

by Academic Council
Igor Sikorsky Kyiv Polytechnic Institute
(meeting protocol № _____ from _____ 2020)

Head of Academic Council
_____ Mykhaylo ILCHENKO

Level PhD
Speciality 162 - Biotechnologies and bioengineering
Educational and Scientific program Biotechnologies
(Title of the program)
Graduation Departments Industrial biotechnology
Ecobiotechnology and Bioenergetics
Bioinformatics
Faculty (Institute) Biotechnology and biotechnics

Form of study full-time
(full-time, part-time)
Qualification PhD of biotechnologies and bioengineering
Study duration 4 years
Base level Master degree
Educational component 40 ECTS Credits

Schedule of study

YEAR	October					November					December					January					February					March					April					May					June					July					August					September				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52								
I																																																												
II																																																												
III	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R					
IV	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R					

Symbols: Learning period E Examination I Internship R Research RT Report A Assessment H Holiday

I. Educational component

Summary table of time budget (Weeks)					Internship			
YEAR	Learning period	Examination	Internship	Holiday	Total	Type of Internship	YEAR	Weeks
I	48	4			52	Pedagogical	2	2
II	48	4			52			

Plan of Educational process

Code	Educational components	Distribution for terms (semesters)				ECTS Credits	Number of hours				
		Exams	Final tests	Individual task	Module test		Total	Lectures/practical lessons			Self-study
								Lectures	Practical	Laboratory	
1	2	3	4	5	6	7	8	9	10	11	12
1. Normative components											
1.1. General training cycle											
30 1	General scientific (philosophical) discipline (Practical rhetoric. Practical philosophy)	2	1		1	4	120	8	6		106
30 2	Foreign language for scientific activity	2	1	1	2	6	180		14		166
1.2. Vocational training cycle											
30 3	Integration and differentiation of modern scientific knowledge in biotechnology	3			3	4	120	6	2		112
30 4	Problematic issues of environmental biotechnology and bioenergy	3			3	4	120	6	2		112
30 5	Modern achievements of bioengineering and bioinformatics	4			4	4	120	6	2		112
30 6	Academic discipline for the acquisition of language competencies sufficient to present and discuss the results of scientific work in English orally and in writing		2			2	60	4	2		54
30 7	Pedagogical internship**		3			2	60				60
30 8	Organization of scientific and innovative activity		4		4	4	120	6	2		112
TOTAL of NORMATIVE educational components		5	5	1	6	30	900	36	30		834
2. Elective components											
B1	Modern development of waste processing biotechnologies and bioenergy	3			3	5	150	6	2		142
B2	Controlled synthesis of metabolites	4			4	5	150	6	2		142
TOTAL of ELECTIVE educational components		2			2	10	300	12	4		284
TOTAL		7	5	1	8	40	1200	48	34	0	1118

II. Scientific component

YEAR	The content of the graduate student's scientific work	Forms of control (Reporting)
1st year	Choice and substantiation of own scientific research topic, determination of content, terms of performance and volume of scientific works; choice and substantiation of own scientific research methodology, review and analysis of existing views and approaches developed in modern science in the chosen direction. Preparation and publication of at least 1 article (usually a review) in scientific professional editions on the research topic; participation in scientific and practical conferences (seminars) with the publication of papers.	Approval of the PhD-student's individual plan of work at the academic council of the institute / faculty, reporting on the progress of the PhD-student's individual plan of work twice a year
2nd year	Conducting own research under the guidance of the supervisor, which involves solving research problems through the use of a set of theoretical and empirical methods. Preparation and publication of at least 1 article in scientific professional editions (domestic or foreign) on the research topic; participation in scientific and practical conferences (seminars) with the publication of papers.	Reporting on the progress of the PhD-student's individual plan of work twice a year
3rd year	Analysis and generalization of the own scientific research results; substantiation of scientific novelty of the obtained results, their theoretical and / or practical significance. Preparation and publication of at least 1 article in scientific professional editions on the research topic; participation in scientific and practical conferences (seminars) with the publication of papers.	Reporting on the progress of the PhD-student's individual plan of work twice a year
4th year	Registration of the PhD-student's scientific research results in the form of the dissertation, determining the completeness of the dissertation results coverage in scientific articles in accordance with current requirements. Implementation of the obtained results and receiving of supporting documents. Submission of documents for preliminary peer-review of the dissertation. Preparation of a scientific report for the final attestation (defense of the dissertation).	Reporting on the progress of the PhD-student's individual plan of work twice a year. Providing the confirming documents on the scientific novelty, theoretical and practical significance of the dissertation results.

Head of the Scientific and Methodical Board of Speciality _____ / _____ /
Head of the Department _____ / Yevhenii KUZMINSKYI /
Dean of the Faculty _____ // Oleksii DUHAN /