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

WORK CURRICULUM
for the 2021/2022 academic year

(Enrolment 2021)

Faculty (institute) - Institute of Energy Saving and Energy Management

APPROVED

Vice-rector for educational work
Igor Sikorsky Kyiv Polytechnic Institute

_____ Anatoliy MELNYCHENKO
"____"_____ 2021

Specialty (code and name) - **184 Mining**

according to the educational-professional program of master's training (specialization)

Geoengineering

Educational degree - **Master**

Graduation department - **Department of Geoengineering**

Form of study - **full-time**

Study duration - **1 year 4 months**

Qualification - Master of Mining

№	Educational components	Name of departments	Volume of the subject		Number of Auditory hours								Self-study	Control measures and their distribution by semesters								Distribution of auditory hours per week by courses and semesters							
						including																I course							
																						ОС-11мп (10+2)							
																						1 Semester				2 Semester			
						Lectures		Practical		Laboratory													including				including		
			ECTS Credits	General amount	Total	за НП	з урахуван. інд. занять	за НП	з урахуван. інд. занять	за НП	з урахуван. інд. занять	Individual work		Exams	Tests	Module test	Course project	Coursework	calculation and graphic work	Home control work	Summery	Total	Lectures	Practical	Laboratory	Total	Lectures	Practical	Laboratory
1	2	3	4	5	6	7						9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
1. Compulsory educational components																													
1.1. General training cycle																													
1	Intellectual Property and Patenting-1. Intellectual property	Department of Intellektual property and private	1	30	18	12		6					12									1	0.7	0.3					
2	Intellectual Property and Patenting-2. Patenting and acquisitions	Department of Machine Design	2	60	36	24		12					24		1	1						2	1.3	0.7					
3	Basics of Engineering and Sustainable Development Technologies	Power Supply Department	2	60	36	18		18					24		1	1						2	1	1					
4	Practical course of Foreign Language on Business Communication	Department of English for Engineering 1	3	90	72			72					18		2	1					1	2		2		2		2	
5	Management of startup projects	Department of Economic Cybernetics Економічної кібернетики	3	90	54	18		36					36		2	2										3	1	2	
		Total number of part 1.1	11	330	216	72		144					114		4	4					1	7	3	4		5	1	4	
	1.2. Vocational training cycle																												
6	Geotechnical Structures Construction	Department of Geoengineering	4	120	54	27		27					66	1		1			1			3	1.5	1.5					
7	Underground Enterprises Reconstruction	Department of Geoengineering	4	120	54	27		27					66	1		1			1			3	1.5	1.5					
8	Specialized Course On Underground	Department of Geoengineering	4	120	72	36		36					48		1	1			1			4	2	2					

9	Specialized Course On Underground Construction	Department of Geoengineering			4	120	72	27				45			48		1	1			1			4	1.5		2.5								
10	Special Methods of Building	Department of Geoengineering			4	120	54	27		27					66	2		2					2					3	1.5	1.5					
11	Municipal Underground Structures Engineering	Department of Geoengineering			3.5	105	36	18		18					69	1		1						2	1	1								
12	Course project in Municipal Underground Structures Engineering	Department of Geoengineering			1.5	45									45		1		1															
Research (scientific) component																																			
13	Scientific Work on the Topic of Master's Thesis-1. Fundamentals of the scientific research	Department of Geoengineering			2	60	27	9		18					33		1							1.5	0.5	1								
14	Scientific Work on the Topic of Master's Thesis-2.Scientific Work on the Topic of Master's Thesis	Department of Geoengineering			2	60	18			18					42		2											1		1				
Total number of part 1.2					29	870	387	171		171		45			483	4	5	6	1		4		1	17.5	8	7	2.5	4	1.5	2.5	0				
TOTAL for the NORMATIVE educational components					40	1200	603	243		315		45			597	4	9	10	1		4		2	24.5	11	11	2.5	9	2.5	6.5	0				
2. Optional educational components																																			
2.1. Vocational training cycle (Optional subjetcs from Faculty/Department catalogue)																																			
	Educational components Освітні компоненти (навчальні дисципліни, курсові проекти (роботи), практики, кваліфікаційна робота)	Name of departments Назва кафедр	К-ть.здоб які вибр. дисципл																																
			Б	К																															
15	Educational Component 1 of D-catalogue																																		
	Designing of Underground Transport Systems	Department of Geoengineering	*		4	120	54	27		27					66	2		2			2							3	1.5	1.5					
	Management of technological processes of opencast mining*	Department of Geoengineering	*		4	120	54	27		27					66	2		2			2							3	1.5	1.5					
	Environmental safety of subsoil use**	Department of Geoengineering	*		4	120	54	27		27					66	2		2			2							3	1.5	1.5					
16	Educational Component 2 of D-catalogue																																		
	Designing of connection between ground and underground facilities	Department of Geoengineering	*		4	120	54	27		27					66	2		2			2							3	1.5	1.5					
	Logistics of mining transport systems*	Department of Geoengineering	*		4	120	54	27		27					66	2		2			2							3	1.5	1.5					
	Utilization and processing of mining wastes**	Department of Geoengineering	*		4	120	54	27		27					66	2		2			2							3	1.5	1.5					
17	Educational Component 3 of D-catalogue																																		
	Modernization of underground networks	Department of Geoengineering	*		4	120	54	27		27					66		2	2										3	1.5	1.5					
	Resource-saving technologies for mining and processing of rocks*	Department of Geoengineering	*		4	120	54	27		27					66		2	2										3	1.5	1.5					
	Environmental protection technologies for opencast mining**	Department of Geoengineering	*		4	120	54	27		27					66		2	2										3	1.5	1.5					
18	Educational Component 4 of D-catalogue																																		

	Designing underground structures of special purpose	Department of Geoengineering	*		4	120	54	27		27					66		2	2										3	1.5	1.5	
	Mathematical methods of process optimization by geoengineering systems*	Department of Geoengineering	*		4	120	54	27		27					66		2	2										3	1.5	1.5	
	Optimization of quarrying processes in the quarry**	Department of Geoengineering	*		4	120	54	27		27					66		2	2										3	1.5	1.5	
19	Educational Component 5 of D-catalogue																														
	Resource management of a geotechnical enterprise	Department of Geoengineering	*		4	120	54	27		27					66		2	2										3	1.5	1.5	
	Geo-information systems of superuse*	Department of Geoengineering	*		4	120	54	27		27					66		2	2										3	1.5	1.5	
	Information technologies in nature protection**	Department of Geoengineering	*		4	120	54	27		27					66		2	2										3	1.5	1.5	
20	Educational Component 6 of D-catalogue																														
	Geoinformation systems of construction objects	Department of Geoengineering	*		4	120	54	27		27					66		2	2			2							3	1.5	1.5	
	Designing of opencast mining enterprises*	Department of Geoengineering	*		4	120	54	27		27					66		2	2			2							3	1.5	1.5	
	Thermodynamics of stability of quarry sides and dumps**	Department of Geoengineering	*		4	120	54	27		27					66		2	2			2							3	1.5	1.5	
	Total number of part 2.1				24	720	324	162		162					396	2	4	6			3							18	9	9	
	Total for the ELECTIVE educational components				24	720	324	162		162					396	2	4	6			3							18	9	9	
	TOTAL				64	1920	927	405		477		45			993	6	13	16	1		7		2	24.5	11	11	2.5	27	11.5	15.5	
			TOTAL	Exams																				3				3			
				Tests																					6				7		
				Module test																						8				8	
				Course project																							1				
				Coursework																											
				Calculation and graphic work																					4				3		
				Home control work																											
				Summery Рефератів																							1				1

*Дисципліни, які студенти опановують в рамках сертифікатної програми"Ресурсозберігаючі технології надрокористування", введеної в дію наказом № від

**Дисципліни, які студенти опановують в рамках сертифікатної програми"Екобезпечні технології в гірництві", введеної в дію наказом № від

Approved by Institute Academic Council, Meeting protocol № _1_ from 30.08. 2021 р.

Head of the Department /Oksana VOVK

(підпис) (П.І.Б.)

Dean of the Faculty (Director of the Institute) /Serhii DENYSIUK /

(підпис) (П.І.Б.)