



Chairman of the Management Board-
Rector of KazNRTU named after K.Satbayev
M.M. Begentayev
2025 y.

CURRICULUM
of Educational Program on enrollment for 2023-2024 academic year

Educational program 6B05206 - "Engineering ecology"

Group of educational programs B051 - "Environment"

3301	Elective	PD, CCH	4	120		75	3				4		
HPP131	Restoration technologies for damaged ecosystems	PD, UC	5	150	2/0/1	105	3					5	
CHE860	Best available technology in various industries	PD, UC	6	180	2/0/2	120	3					6	
3401	Elective	PD, CCH	6	180		120	3					6	
3402	Elective	PD, CCH	5	150		105	3					5	
3403	Elective	PD, CCH	6	180		120	3					6	
3404	Elective	PD, CCH	5	150		105	3					5	
3405	Elective	PD, CCH	5	150		105	3					5	
3406	Elective	PD, CCH	5	150		105	3					5	
CIV785	Production practice I	PD, UC	2			105	3					5	
CIV786	Production practice II	PD, UC	3							2			3

M-11. Module of final attestation

ECA108	Defense of the thesis (project)	FA	8										8
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M-12. Module of additional types of training

AAP500	Military affairs	ATT	0														
Total based on UNIVERSITY:										31	29	27	33	30	30	33	27

60 60 60 60 60

Number of credits for the entire period of study					
Cycle code	Cycles of disciplines	Credits			
		required component (RC)	university component (UC)	component of choice (CCH)	Total
GED	Cycle of general education disciplines	51		5	56
BD	Cycle of basic disciplines		87	30	117
PD	Cycle of profile disciplines		23	36	59
<i>Total for theoretical training:</i>		51	110	71	232
FA	final attestation	8			8
TOTAL:		59	110	71	240

Decision of the Academic Council of KazNRTU named after K.Satbayev. Protocol № 5 24 november 2022 y.

Decision of the Educational and Methodological Council of KazNRTU named after K.Satbayev. Protocol № 3 17 november 2022 y.

Decision of the Academic Council of the Mining and Metallurgical Institute. Protocol № 3 or "15" 11 2022 y.

Vice-Rector for Academic Affairs

Director of the Mining and Metallurgical Institute

Head of the Department of Chemical Processes and Industrial Ecology

Specialty Council representative from employers

B. Zhautikov

K. Rysbekov

Sh. Kubekova

D. Burlibayeva


MAJOR ELECTIVE DISCIPLINES educational program for the 2023-2024 academic year admission

Educational program B05206 - "Engineering ecology"

Group of Educational programs B051 - "Environment"

Full-time study

Study duration : 4 years

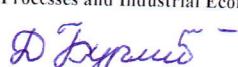
Academic degree: bachelor of natural sciences

Year of study	Code of elective	Code of discipline	Name of discipline	Semestr	Cycle	Credits	Total hours	lec/lab/pr	SIW (including SIWT) in hours
M-5. Module of anti-corruption culture, ecology and life safety base									
2	1201	HUM 136	Fundamentals of Anti-Corruption Culture and Law	3	GED, CCH	5	150	2/0/1	150
		MNG 489	Fundamentals of Economics and Entrepreneurship						
		HPP128	Scientific research methods						
		CHE 656	Ecology and life safety						
M-8. Module of Basic Chemical Training									
2	2201	CHE436	Green chemistry	3	BD, CCH	5	150	1/0/2	105
		BIO408	Ecological chemistry					2/0/1	
		HPP132	Fundamentals of Ecology					2/0/1	
M-9. Module of General environmental training									
3	2301	CHE852	Industrial and environmental safety	5	BD, CCH	5	150	2/0/1	105
		HPP100	Industrial ecology and industrial safety					1/0/2	
3	2302	CHE645	Industrial ecology	5	BD, CCH	5	150	2/0/1	105
		CHE853	Urban ecology					2/0/1	
3	2303	MAP577	Remote sensing of the state of the environment	5	BD, CCH	5	150	2/0/1	105
		CHE421	Modeling and optimization of chemical technological processes					2/0/1	
4	2304	CHE856	Soil ecology	6	BD, CCH	5	150	2/0/1	105
		HPP133	Soil science and remediation methods					2/0/1	
4	2305	CHE605	Environmental problems of our time and Sustainable Development	7	BD, CCH	5	150	2/0/1	105
		CHE884	Sustainable Development and ESG					2/0/1	
M-10. Module of professional activity									
3	3301	HPP134	Human ecology	6	ПД КВ	4	120	2/0/1	75
		HPP135	Systemic risks in the field of environmental protection					2/0/1	
4	3401	CHE857	Fundamentals of Environmental Design and Environmental Engineering	7	ПД КВ	6	180	2/0/2	120
		CHE843	Fundamentals of Designing Chemical Industry Enterprises					2/0/2	
4	3402	CHE862	Reagent production technology, wastewater treatment	7	ПД КВ	5	150	2/1/0	105
		CHE863	Natural and waste water treatment technology					2/1/0	
4	3403	CHE864	Air-pollution control	7	ПД КВ	6	180	2/0/2	120
		CHE865	Cleaning technology systems and use of exhaust gas					2/0/2	
4	3404	CHE446	Ecoanalytics and environmental protection measures	8	ПД КВ	5	150	2/0/1	105
		HPP138	Ecological and normative documentation at the enterprise					2/0/1	
4	3405	CHE447	Ecotechnology and green energy	8	ПД КВ	5	150	2/0/1	105
		BIO161	Disposal, disposal and disposal of industrial waste					2/0/1	
4	3406	CHE441	Waste management	8	ПД КВ	5	150	2/0/1	105
		BIO139	Fundamentals of Industrial Technologies					2/0/1	
4		BIO141	Ecologic basis of industrial technologies					2/0/1	

Credits numbers of elective disciplines over the entire period of study		
Cycle of disciplines	Credits	
Cycle of general education disciplines (GED)	5	
Cycle of basic disciplines (B)	30	
Cycle of special disciplines (S)	36	
Overall:	71	

Decision of the Academic Council of Mining and Metallurgical Institute. Protocol № 3 "15-11 2022 y.

 Head of the department "Chemical Processes and Industrial Ecology"  Kubekova Sh.N.

 Representative of Specialty council  D. Burlibayeva