

MINISTRY OF EDUCATION AND SCIENCE OF THE REPUBLIC OF KAZAKHISTAN  
KAZAKH NATIONAL RESEARCH TECHNICAL UNIVERSITY named after K.I. SATPAYEV



Approved by:  
Rector of the KazNRTU named after K.I. Satpayev  
" " " M. Begentayev  
20\_\_y.

WORKING CURRICULUM

Education program "7M07204 - Metallurgy and mineral processing"  
Group of Educational Programs "M117 - Metallurgical engineering"  
enrolment for 2021-2022 academic year

Academic degree: Magister Term of study: 2 years

year of study	Code	Name of course	Component	Academic credits	Total hours	lecture/ laboratory/ practice/MIW	MIW (including MIW), in hours	Prerequisites	Code	Name of course	Component	Academic credits	Total hours	lecture/ laboratory/ practice/MIW	MIW (including MIW), in hours	Prerequisites
1	1 semester								2 semester							
	LNG210	English language (professional)	BD IC	5	150	0/0/3/2	105		AAP244	Pedagogical practice	BD IC	4				
	HUM208	Management psychology	BD IC	3	90	1/0/1/1	60		HUM210	History and philosophy of science	BD IC	4	120	1/0/1/2	90	
	MET737	Ion exchange processes and equipment	BD OC	5	150	2/0/1/2	105		HUM209	Higher school pedagogy	BD IC	4	120	1/0/1/2	90	
	MET235	Engineering calculations in metallurgy				2/0/1/2	105		MET242	Technologies and processes of distillation and condensation in metallurgy	BD OC	5	150	2/0/1/2	105	
	MET757	Theory of mineral processing processes	PS IC	5	150	2/0/1/2	105		MET263	Current and future technology for the processing of ore and technogenic raw materials				2/1/0/2	105	
	MET751	The technology of selection and disposal of toxic elements from the metallurgical raw materials	PD OC	5	150	2/0/1/2	105		MET759	Technology and refining of radioactive metals	BD OC	5	150	2/0/1/2	105	
	MET764	Theory and calculations of metallurgical thermodynamics and kinetics				2/0/1/2	105		MET758	Technology and refining of precious metals				2/0/1/2	105	
	AAP242	Master's student scientific research, including an internship and a master's thesis.	MSSR	6					MET752	Current and future technologies for processing raw materials of ferrous and nonferrous metallurgy	PS IC	5	150	2/1/0/2	105	
		AAP242	Master's student scientific research, including an internship and a master's thesis.	MSSR	6				MET760	Special methods of hydrometallurgy	PS IC	5	150	2/0/1/2	105	
								AAP242	Master's student scientific research, including an internship and a master's thesis.	MSSR	6					
	<b>In total</b>				<b>29</b>				<b>In total</b>				<b>38</b>			
2	3 semester								4 semester							
	PHY276	Innovation in material science	PS OC	5	150	2/0/1/2	105		AAP236	Research scientific training	PS	7				
	MET761	Mass transfer in heterophase metallurgical systems				2/0/1/2	105		ECA205	Registration and defense of the master's thesis (RaDMT)	FA	12				
	MET762	Special chapters of extractive metallurgy (in English)	PS OC	5	150	2/0/1/2	105		AAP242	Master's student scientific research, including an internship and a master's thesis.	MSSR	6				
	MET305	Electrolysis of water and non-water media				2/1/0/2	105									
	MET281	Recycling technologies in ferrous and non-ferrous metallurgy	PS OC	5	150	2/1/0/2	105									
	MET239	Processes and production of high-purity metals				2/0/1/2	105									
	MET243	Technologies for extracting metals from slags	PS OC	5	150	2/0/1/2	105									
	MET250	Technology for fractional separation of metals from a vapor-gas mixture				2/0/1/2	105									
	MET283	Chlorine and vacuum technologies in metallurgy	PS OC	5	150	2/1/0/2	105									
MET763	Plasma metallurgy				2/0/1/2	105										
AAP242	Master's student scientific research, including an internship and a master's thesis.	MSSR	6													
	<b>In total</b>				<b>31</b>				<b>In total</b>				<b>25</b>			

Decision of the Academic Council of KazNRTU named after K.I. Satpayev. Protocol No. \_\_\_ of " " " 20\_\_.

Decision of the Scientific Council of the MaMI named after O. A. Baikonurov. Protocol No. \_\_\_ of " " " 20\_\_.

Vice-Rector for Academic Affairs

B.A. Zhahtikov

Director of the Mining and Metallurgical Institute named after O. A. Baikonurov

K.B. Rysbekov

Head of the Department "Metallurgy and mineral processing"

M.B. Barmenshinova

Head of the Department "Metallurgical processes, heat engineering and technology of special materials"

T.A. Chepustanova

Partner university:

Worcester Polytechnic Institute (USA)

B. Mishra

Representative of Specialty council of the LLP "Kazakhmys"

E.A. Ospanov

Representative of Specialty council of the LLP "KAZ Minerals"

U.K. Jetybaeva

Number of credits for the whole period of study	
Cycles of disciplines	Credits
The cycle of general education	0
A cycle of basic disciplines (BD IC, BD OC)	35
A cycle of principal subjects (PS IC, PS OC)	52
<b>All on the theoretical classes:</b>	<b>87</b>
MSSR	24
Registration and defense of the master's thesis (RaDMT)	12
<b>In total</b>	<b>123</b>