



APPROVED

Rector KazNRTU named after K. I. Satpayev

I. K. Beisembetov

2020

MODULAR CURRICULUM

Education program 7M07103 - "Material science and technology of new materials"

Form of study: full

Duration of training: 2 years

Academic degree: Master of Engineering

The cycle	code	Name of disciplines	Semester	Acad. credits	lec.	lab.	prac	IWS	Type of control	Chair
<b>Social module (18 credits)</b>										
<b>Required component (18 credits)</b>										
BD	HUM201	History and philosophy of science	1	4	1	0	1	2	Exam	SD
BD	HUM207	Higher school pedagogy	1	4	1	0	1	2	Exam	SD
BD	LNG202	Foreign language (professional)	2	6	0	0	3	3	Exam	EL
BD	HUM204	Management psychology	2	4	1	0	1	2	Exam	SECPM
<b>Professional training module (60 credits)</b>										
<b>By choice module (60 credits)</b>										
BD	PHY262	Materials science and technology of new materials	1	6	1	0	2	3	Exam	EP
BD	PHY278	Modern problems of materials and process sciences			1	0	2	3	Exam	EP
PS	PHY273	Numerical methods for solving physical problems	1	6	1	0	2	3	Exam	EP
BD	PHY268	Technological quality assurance of materials	2	6	1	0	2	3	Exam	EP
BD	PHY279	Information technologies in science and production			1	0	2	3	Exam	EP
BD	PHY264	The modern theory of the atomic nucleus	2	6	1	0	2	3	Exam	EP
BD	PHY280	The scientific basis and practice of application of nano			1	0	2	3	Exam	EP
PS	PHY265	Materials for 3D technology	2	6	1	0	2	3	Exam	EP
PS	PHY266	Materials for energy storage and conversion	2	6	1	0	2	3	Exam	EP
PS	PHY269	Methodology for materials selection and technology	3	6	1	0	2	3	Exam	EP
PS	PHY281	Physical and chemical bases of self-propagating high-temperature synthesis	3		1	0	2	3	Exam	EP
PS	PHY270	Multiphase structures and methods for calculating phase diagrams	3	6	1	0	2	3	Exam	EP
PS	PHY282	Theory and technology of hardening of materials	3		1	0	2	3	Exam	EP
PS	PHY271	Destruction and reliability assessment of materials	3	6	1	0	2	3	Exam	EP
PS	PHY283	Obtaining and evaluating the properties of single crystals and thin films	3		1	0	2	3	Exam	EP
PS	PHY272	The Surface Structure Engineering	3	6	1	0	2	3	Exam	EP
PS	PHY284	Modern methods of corrosion management	3		1	0	2	3	Exam	EP
<b>Practice-oriented module (11 credits)</b>										

THE MINISTRY OF EDUCATION AND SCIENCE OF THE REPUBLIC OF KAZAKHSTAN  
KAZAKH NATIONAL RESEARCH TECHNICAL UNIVERSITY

PS	AAP236	Research practice	4	7				Report	EP
BD	AAP244	Pedagogical practice	2	4				Report	EP
<b>Research Module (24 credits)</b>									
MSSR	AAP242	Master's student scientific research	1	6				Report	EP
MSSR	AAP242	Master's student scientific research	2	6				Report	EP
MSSR	AAP242	Master's student scientific research	3	6				Report	EP
MSSR	AAP242	Master's student scientific research	4	6				Report	EP
<b>Module of final attestation (12 credits)</b>									
FA	ECA205	Registration and defense of the master's thesis	4	12				Defening a dissertation	EP
		<b>Total</b>		<b>125</b>					

Vice-Rector for Research and Academic Affairs



D.K. Nauryzbayeva

Chair of the APC



K.B. Tulegenova

Director of the IM&IE



G.S. Turysbekova

Head of the Department EP

R.E. Beisenov