



APPROVED
Rector KazNRTU named after K. I. Satpayev
I. K. Beisembetov
2019 y.

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
Social module (18 credits)										
Required component (18 credits)										
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
Professional training module (60 credits)										
By choice module (60 credits)										
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			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	6	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			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	6	1	0	2	3	Exam	EP
Practice-oriented module (11 credits)										

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Practice-oriented module (11 credits)										
PS	AAP236	Research practice	4	7					Report	EP
BD	AAP244	Pedagogical practice	2	4					Report	EP
Research Module (24 credits)										
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
Module of final attestation (12 credits)										
FA	ECA205	Registration and defense of the master's thesis	4	12						EP
Total				125						

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