

Institute of Mechanical Engineering, Materials Science & Transport

Bachelor Program: Design and Technological Support of Machine-building Production

Field of Studies: "Technology of mechanical engineering"

Years of studies: 4

Language of instruction: Russian

No	Subject	Hours	Credits
	Compulsory courses Block1		
	Block 1 Disciplines (modules)		
1	Basic part		
1.1	History	108	3
1.2	Philosophy	/252	/7
1.3	Foreign language	/288	/8
1.4	Economic Theory***	108	3
1.5	Mathematics	/432	/12
1.6	Physics	/360	/10
1.7	Computer Science	144	4
1.8	Chemistry	108	3
1.9	Theoretical mechanics	144	4
1.10	Mechanical Engineering (drafting)	72	2
1.11	Descriptive geometry and computer graphics	/180	/5
1.12	Strength of materials	180	5
1.13	Mechanism and Machine Theory	144	4
1.14	Machine parts and basic design	144	4
1.15	Machine Parts and Fundamentals of Construction	/216	/6
1.16	Hydraulics	108	3
1.17	Technological Processes in Mechanical Engineering	144	4
1.18	Material Science	144	4
1.19	Electroengineering	108	3
1.20	Electronics	108	3
1.21	Metrology, Standardization and Certification	/252	/7
1.22	Health and Safety	108	3
1.23	Fundamentals of Mechanical Engineering	/252	/5
1.24	Forming processes and operations	144	4

1.25	Equipment for Engineering Production	144	4
1.26	Physical Training	72	2
	TOTAL on the basic part	4068	113
2	Variative part		
2.1	History of science and technology	72	2
2.2	Philosophy of Science and Technology	72	2
2.3	Ecology	72	2
2.4	Computer-aided design of technological processes	252	7
2.5	Computer Modeling in Engineering	144	4
2.6	Computer programs for mechanical engineering design	72	2
2.7	Mathematical Methods in Engineering	180	5
2.8	Technology of mechanical engineering	/288	/8
2.9	Automation of production processes in mechanical engineering	180	5
2.10	Technology equipment	108	3
2.11	Designing of mechanical engineering CAD technological processes	108	3
2.12	Cutting Tools	180	5
2.13	Cutting machines	180	5
2.14	Programming of CNC machines	144	4
2.15	Accuracy control and technical measurements	108	3
2.16	3D Modeling and CAD Fundamentals	72	2
2.17	Elective courses	1768	40
2.18	Psychology****	108	3
2.19	Engineering Psychology	/108	/3
2.20	History of Russian Culture	72	2
2.21	World Cultural Heritage	/72	/2
2.22	Design and technological informatics	108	3
2.23	Computer science in engineering	/108	/3
2.24	Standard software packages and tools for modeling	/144	/4

	technological objects		
2.25	Mathematical Modeling of Technological Processes and Systems	180	5
2.26	Information support of engineering design	/144	/4
2.27	Information Technologies in Mechanical Engineering	180	5
2.28	Engineering fundamentals of volume modeling	/180	/5
2.29	Computer aided design of workpieces	/72	/2
2.30	Military training	/72	/2
2.31	Modern systems of computer-aided preparation of control programs for NC and HPS machines	72	2
2.32	Computer aided design of machining aids	72	2
2.33	Military training	72	2
2.34	Foreign language for professional communication	180	5
2.35	Technical translation	180	5
2.36	Military training	144	4
2.37			
2.38	Integrated Computer-Aided Design and Manufacturing Technologies (CAD/CAM systems)	/360	/10
2.39	Computer simulation of forming processes of products	360	10
2.40	Computer modeling of shaping processes	144	4
2.41	Computer simulation of product shaping processes	216	6
2.42	Military training	360	10
2.43	Software and hardware selection for auxiliary equipment for CNC machines	72	2
2.44	Development of technological processes and preparation of control programs for parts manufacturing on CNC	72	2

	machines		
2.45	Military training	108	3
2.46	Automated methods of design and technological problems solving	72	2
2.47	Systems of computer-aided preparation of machine-building production	108	3
2.48	Gaming sports	328	
2.49	Play Sports	328	
	Total for the variative part	4036	103
	Total for Block B.1	8104	216
	Block 2 Practices	648	18
	Internship (variable part)		
	1st training practice*	108	3
	2nd training practice	108	3
	2nd internship*	108	3
	2nd pedagogical practice	108	3
	Work internship**	108	3
	Work internship (technological)	108	3
	Work (pre-diploma) internship	216	6
	Block 3 State Final Assessment		
	State Final Assessment (basic part)	216	6
	Preparation for defense and defense of Master's and PhD theses	216	6
	TOTAL for the program	8968	240
	Elective courses		
	Military training	252	
	Process design of multi-nomenclature productions	72	
	Innovative wasteless and low-waste technology of mechanical engineering	72	
	Technological quality assurance of engineering products	72	
	Military training 01 (final certification)	/843	