## 1. Passport of the educational program

Code and classification of the education	6B07 – Engineering, manufacturing and construction
field	industries
Code and classification of training areas	6B071 – Engineering and engineering case
Code and name of educational program	6B07103 – Mechanical engineering
Type of educational program	Active
The purpose of the educational program	Training of specialists for the implementation of
	organizational and management, production and
	technological, design, calculation and design and
	experimental research activities of machine-building
	production
Level according to ISCED	6
Level according to NQF	6
Level according to PQF-professional	6
qualification framework	0
The number of appendix to the licenses for	KZ89LAA00031870 05 August 2021y
the training direction	
Accreditation of EP	Certificate № 2022 KE 0533
The name of the accreditation body	KazSEE
The period of accreditation validity	27.05.2022 -26.05.2027y.
Degree awarded	bachelor of engineering and technology in the educational
	program «6B07103 – Mechanical engineering»
Learning outcome	Table 2
List of qualifications and positions	Head of production; Chief designer; project Manager;
	Leading power engineer; Leading mechanic.
Field of professional activity	Production of engineering products; Service, repair and
	modernization of engineering products;
Scope and object of professional activity	Management bodies, enterprises, organizations of state and
	non-state ownership, including industry, agriculture and
	utilities, military-industrial complex, production and
	consumption.
Functions of professional activity	Development and design of technological processes of
	production of various types of production, the equipment,
	equipment, the tool; standard Control of normative and
	technical documentation; the Decision of design,
	technological, organizational and technical and
	organizational and economic tasks; Service, the
	organization of preventive inspections and maintenance of
	means of production, measurements, tests and control;
	Development of design, technological and operational
	documentation, new technologies, techniques of tests of
	A nelvois of the state of production and evaluation of the
	Analysis of the state of production and evaluation of the
	improve the efficiency of the enterprise: Conducting
	appriments, measurements, observations, implementation
	of research and development results
Types of professional activity	1 Organizational and management:
Types of professional activity	<b>1.</b> Organization of the production process organization of
	work of performers: setting goals and formation of
	management tasks related to the implementation of
	professional functions: organization of production
	services: management of the production process taking
	into account technical financial and human factors:
	development of management algorithms, planning of
	development of management argorithms, planning of

	accounting and reporting, development of the business plan of the enterprise, planning to improve production efficiency;
	2. Industrial-technological;
	development, implementation and operation of system, resource-saving technologies; development and implementation of technological processes of processing and Assembly of products; automation of machine- building production; creation of continuous production
	processes, automated systems, flexible automated production; introduction of high-performance technological equipment, ensuring environmental
	engineering production;
	3. Design and engineering;
	implementation of design and graphic works in the design
	of automation systems; design of high-performance means of technological osnoshcheniya; justification of criteria for assessing the technical and economic efficiency of the
	designed systems; development of design, engineering and technological documentation using modern methods of computer-aided design;
	4. Settlement and project; development of design schemes in the design of equipment systems, tooling and tools; performing calculations for use
	in design documentation; justification of calculation methods;
	5. Experimental research.
	application of modern experimental methods for the study of processes occurring in machine-building production; research of new trends in the technology of modern
	machine-building; study of types of processing in machine-building; study of automation objects in the field of machine-building; scientific justification of methods to
D	ensure the quality of products and increase productivity;
Be competent	In self-management within the framework of the strategy of the enterprise, involving the coordination of work with
	other sites; in the responsibility for the production of
	finished products: manufacture, Assembly and preliminary
	testing of machinery and equipment; for the preparation,
	prevention of means of production, machinery and
	equipment, for the planning and development of processes
	that can lead to significant changes or development; in the responsibility for improving the professionalism of
	employees.

# 2. Learning results of Educational Programs

Codes	Learning results
LO1	Understand the meaning and describe the patterns and peculiarities of the historical development of Kazakhstan; the situation in various areas of interpersonal, social and professional communication, taking into account the basic knowledge of sociology, political science, cultural studies and psychology in oral and written forms in Kazakh, Russian and foreign languages, as well as the principles and culture of academic integrity.
LO2	Demonstrate knowledge and explain the physical meaning of phenomena, processes occurring in nature, in the social and industrial spheres; the surrounding reality on the basis of worldview positions formed by knowledge of the basics of philosophy using various types of information and communication technologies.
LO3	Apply knowledge and understanding when choosing the most rational materials, shapes, sizes, degrees of accuracy and surface roughness, taking into account the mechanical, physical, chemical and technological properties of metals, as well as methods of mechanical and thermal processing, manufacturing technology and technological processes.
LO4	Apply knowledge and understanding in solving problems related to the organization of management, maintenance, with the introduction and operation of low-waste, resource-saving environmentally friendly engineering technologies and technological processes, technological equipment, taking into account safety, environmental friendliness and strength of structural elements and mechanisms.
LO5	Apply theoretical and practical knowledge of fundamental concepts, laws and theory of classical mathematics, physics, chemistry, mechanics, hydraulics and heat engineering, electrical and electronic devices, as well as methods of image construction, skills of finding kinematic and dynamic parameters of mechanisms and machines for the design of machine-building production.
LO6	Use the capabilities of the AutoCAD system, acts and regulatory documents of standardi-zation and certification, general principles of interchangeability, tolerances and fitments, as well as measurement, testing and control tools for the design of technological processes.
LO7	To change the working parameters of machines when processing parts depending on the material; the design of metal-cutting tools, cutting modes; the production cycle of manufacturing the product.
LO8	To collect and interpret information for critical analysis and verification of the existing technology of mechanical engineering, for the organization of production, using eco-protective, fire-fighting equipment and compliance with the rules of labor safety, industrial sanitation and fire safety.
LO9	To justify the economic efficiency of production; the correct choice of materials and technology for manufacturing the workpiece; compliance with the rules of operation, maintenance and repair of metal-cutting machines;
LO10	To know the basics of entrepreneurship and methods of scientific research and apply them in assessing the organization of production and product quality, the strength of machine parts and mechanisms, the technical and economic feasibility of technological processes, new designs of tractors and cars, agricultural, road-building and reclamation-building machines.
LO11	Plan the needs of the enterprise in various types of equipment, hydropneumatic, lifting and transport machines; modern methods of documentation and business correspondence; introduction of innovative technological processes into production.
LO12	Develop design, technological and operational documentation, new technologies; methods of computer modeling of processes using CAD systems and additive technologies; business plan of the enterprise; modern automated production processes; progressive methods of operation of CAD TP.
LO13	Design technological processes for manufacturing various types of products, equipment, tooling, tools and devices; automation and digitalization of machine-building production, automated complexes, flexible automated production, continuous flow production processes.

### **3.** The content of the educational program

							Vo	lume	in hou	'S		D	istrit	oution an	n of c nd ser	redits neste	s by c ers	cours	es		
	C			edits	S.		Classi	room		Extracu	rricular	cou	l ırse	2 cou	2 irse	cou	3 irse	cot	4 irse	nent	ıtrol
No	CC/UC/C	DisciplineCode	Name of the discipline, forming competencies	academic cr	academic hour	Lectures	Practical class	Laboratory class	Other (practice)	IWST	SWI	1	2	3	4	5	6	7	8	The Departi	Form of co
	ЖБП/ ООД/ GED	Жалпы білім Цикл оби дисциплины/ (	беретін пәндер циклы/ цеобразовательные Cycle of general education disciplines	56	1680	84	636			240	720	17	25	12	2						
	ЖБП/ ООД/ GED	Гуманита Гуманита Нитап	арлық және тілдік/ арный и языковой/ ities and language	30	900	30	270			150	450	15	10	5							
1	MK/ OK/ CC	KT/IK/ HK 1101	Қазақстан тарихы / История Казахстана / History of Kazakhstan	5	150	15	35			25	75	5								22	State exam
2	MK/ OK/ CC	Fil/ Fil/ Phil 2102	Философия/ Философия/ Philosophy	5	150	15	35			25	75			5						22	exam
3	MK/ OK/ CC	ShT/IYa/ FL 1103	Шетел тілі / Иностранный язык / Foreign language	10	300		100			50	150	5	5							24	exam
4	MK/ OK/ CC	K(O)T/ K(R)Ya/ K(R)L 1104	Қазақ (Орыс) тілі / Казахский (Русский) язык / Kazakh (Russian) language	10	300		100			50	150	5	5							23	exam
	ЖБП/ ООД/ GED	Әлеуметтік- салауатты өм политическі образ жизни/ 9 and a	саясаттану білім және мір салты/ Социально- их знаний и здоровый Socio-political knowledge healthy lifestyle	16	480	24	296			40	120	2	10	2	2						

5	MK/ OK/ CC	ASBM (ASMP) / MSPZ (SPKP) / SPKM (SSPSCSP) 1106	Әлеуметтік-саясаттану білім модулі (әлеумет- тану, саясаттану, мәдениеттану, психология) / Модуль социально- политических знаний (социология, политология, культурология, психология) / Social and political knowledge module (Social Studies, Political Studies, Cultural Studies, Psychology)	8	240	24	56		40	120		8					22	exam
6	MK/ OK/ CC	DSh/FK/PhT 1107 2107	Дене шынықтыру / Физическая культура / Physical Training	8	240		240				2	2	2	2			25	exam
	ЖБП/ ООД/ GED	Кәсіби жән Профессионал Profession	не коммуникативтік/ іьно-коммуникативный/ al and communicative	10	300	30	70		50	150		5	5					
7	MK/ OK/ CC	AKT/ IKT / ICT 2105	Ақпараттық- коммуникациялық технологиялар/ Информационно- коммуникационные технологии/ Information and Communication Technologies	5	150	15	35		25	75			5				10	exam
8	TK/ KB/ OC	KSZhKM/ PAK/ LAC 1108 Ekon / Ekon / Econ 1108 Ekol / Ekol / Ecol 1108	Кұқық және сыбайлас жемқорлыққа қарсы мәдениет / Право и антикоррупционная культура / Law and anti- corruption culture Экономика/ Экономика / Есопоту Экология / Экология /	5	150	15	35		25	75		5					19 18 2	exam

		TAK / BZh / LS 1108	Тіршілік әрекетінің қауіпсіздігі / Безопасность жизнедеятельности / Life safety																7	
		Kas / Pre / Ent 1108	Кәсіпкерлік/ Предпринимательство/ Entrepreneurship																18	
		GZN / ONI / FSR 1108	Fылыми зерттеулердің негіздері/ Основы научных исследований/ Fundamentals of scientific research																7	
	БП/ БД/	Базалы Цикл баз	іқ пәндер циклы/ овые дисциплины/	116	3480	312	408	320	120	520	1800	13	6	18	23	30	26			
	CS	Core	subjects' cycle																	
	БП/	Инженериян	ың қолданбалы негізі/																	
	БД/ СС	Прикладна	я основа инженерии/	35	1050	99	119	112	20	165	535	13	6	12	4					
	CS	Applied	basis of engineering																	
9	ЖК/ BK/ UC	ZhM/ VM/ HM 1201	Жоғарғы математика / Высшая математика / Higher Mathematics	5	150	15	35			25	75	5							9	exam
10	ЖК/ BK/ UC	Fiz/ Fiz/ Phys 2206	Физика /Физика / Physics	6	180	18	18	24		30	90			6					9	exam
11	ЖК/ ВК/ UC	SGIG / NGIG/ DGEG 1202	Сызба геометриясы және инженерлік графика / Начертательная геометрия и инженерная графика / Descriptive geometry and engineering graphics	4	120	12	12	16		20	60	4							7	exam
12	ЖК/ BK/ UC	Him / Him / Chem 1203	Химия / Химия / Chemistry	4	120	12	12	16		20	60	4							2	exam
13	ЖК/ ВК/ UC	Mat / Mat / MS 1204	Maтериалтану / Maтериаловедение / Materials Science	4	120	12	12	16		20	60		4						7	exam
14	ТК/ КВ/	KG/ KG/ CG 2208	Компьютерлік графика/ Компьютерная графика/	6	180			60		30	90			6					7	exam

	OC		Computer graphics																
		SI/ SD/ LB 2208	Слесарлық іс/ Слесарное дело/ Locksmith business															7	
15	TK/ KB/ OC	GZhTN/ OGT/ FHHE 2215	Гидравлика және жылу техникасы негіздері/ Основы гидравлики и теплотехники/ Fundamentals of hydraulics and heat engineering	4	120	12	28			20	60			4				7	exam
		SGM/ MZhG/ FGM 2215	Сұйықтық және газ механикасы/ Механика жидкости и газа/ Fluid and gas mechanics															7	
16	ЖК/ ВК/ UC	OP / UP / EP 1205	Оку практикасы / Учебная практика / Educational practice	2	60				20		40	2						7	diff. credit
	БП/ БД/ CS	Механика » негіздері/ конструиров mech:	кәне конструкциялау Основы механики и зания/ Fundamentals of anics and design	22	660	66	66	88		110	330		6	5	5	6			
17	ЖК/ ВК/ UC	TM / TM / TM 2207	Теориялық механика / Теоретическая механика/ Theoretical mechanics	6	180	18	18	24		30	90		6					7	exam
18	ЖК/ BK/ UC	MK / SM / SM 2209	Mатериалдар кедергісі / Сопротивление материалов / Strength of materials	5	150	15	15	20		25	75			5				7	exam
19	ЖК/ BK/ UC	MMT/ TMM/ TMM 3212	Механизмдер мен машиналар теориясы / Теория механизмов и машин / Theory of mechanisms and machines	5	150	15	15	20		25	75				5			7	exam
20	ЖК/ ВК/ UC	MBKN/ DMOK/ MDDB 3213	Машина бөлшектері және конструкциялау негіздері / Детали машин и основы конст- руирования / Machine details and design basics	6	180	18	18	24		30	90					6		7	exam

	БП/ БД/ CS	Машина жаса қамтамась Обеспечение машиностро Ensuring a engin	ау өнімдерінің сапасын 13 ету және бақылау/ 2 и контроль качества 2 мательной продукции/ 2 nd quality control of 2 eering products	14	420	27	43	20	50	45	235		14					
21	TK/ KB/ OC	SSTO/ SSTI / SCTM 2210	Стандарттау, сертификаттау және техникалық өлшеу/ Стандартизация, сертификация и техническое измерение/ Standardization, certification and technical measurement	4	120	12	28			20	60		4				7	exam
		DNTO/ NTTI/ ARTM 2210	Дэлдікті нормалау және техникалық өлшеулер/ Нормирование точности и технические измерения/ Accuracy rating and technical measurements														7	
22	ЖК/ ВК/ UC	OAN/ OV/ BI 2214	Озара ауыстырымдылық негіздері / Основы взаимозаменяемости/ Basics of interchangeability	5	150	15	15	20		25	75		5				7	exam
23	ЖК/ ВК/ UC	OP / PP / MP 2211	Өндірістік практика / Производственная практика / Manufacturing practice	5	150				50		100		5				7	diff. credit
	БП/ БД/ CS	Машина жабдықта Оборудова машинострои Equipment and	45	1350	120	180	100	50	200	700			25	20				
24	ЖК/ ВК/ UC	MKKA/ RMRI/ MCCT 3216	production           MKKA/         Металл кесу және           MRI/ MCCT         кескіш аспаптар/           3216         Резание металлов и			15	15	20		25	75			5			7	exam

			режущий инструмент/ Metal cutting and cutting tools															
25	ЖК/ BK/ UC	MS/ MS/ MCM 3217	Металкескіш станоктар/ Металлорежущие станки/ Metal-cutting machines	5	150	15	15	20		25	75			5			7	exam
26	ЖК/ BK/ UC	TZh/ TO/ TE 3218	Технологиялық жарақ/ Технологическая оснастка/ Technological equipment	5	150	15	35			25	75				5		7	exam
	TK/	KTM/ PTM/ LTM 3221	Көтергіш- тасымалдауыш машиналар/ Подьемно- транспортные машины/ Lifting and transport machines														7	
27	KB/ OC	GG/ GG/ HPDHPA 3221	Гидропневможетек және гидропневмоавтоматика/ Гидропневмопривод и гидропневмоавтоматика/ Hydraulic pneumatic drive and hydraulic pneumatic automation	5	150	15	35			25	75				5		7	exam
28	ЖК/ BK/ UC	OP / PP / MP 3222	Өндірістік практика / Производственная практика / Manufacturing practice	5	150				50		100				5		7	diff. credit
29	TK/ KB/ OC	ETEAN/ OEEA/ BEEEA 3220	Электротехника, электроника және автоматика негіздері/ Основы электротехники, электроники и автоматики/ Basics of electrical engineering, electronics and automation	5	150	15	15	20		25	75			5			9	exam
		EM1/ EM17 EMT 3220	Электроника және микропроцессорлық														9	

			техника/ Электроника и микропроцессорная техника/ Electronics and microprocessor technology														
30	TK/ KB/	RIOZh/ RGPS/ RFPS 3224	Робототехника және икемді өндірістік жүйелер/ Робототехника и гибкие производственные системы/ Robotics and flexible production systems	5	150	15	35		25	75				5		7	exam
		DZhO/ PPZ / DMB 3224	Дайындаманы жобалау және өндіру/ Проектирование и производство заготовок/ Design and manufacture of blanks													7	
	TK/	TA/TA/ TC 3219	Тракторлар мен автомобильдер/ Тракторы и автомобили/ Tractors and cars													8	
31	KB/ OC	ZhKM/ DSM/ RCM 3219	Жол-құрылыс машиналары/ Дорожно- строительные машины/ Road construction machines	5	150	15	15	20	25	75			5			8	exam
		AM/ SM/ AM 3223	Ауылшаруашылық машиналары/ Сельско- хозяйственные машины/ Agricultural machinery													8	
32	TK/ KB/ OC	MKM/ MSM/ RCM 3223	Мелиоративтік және құрылыстық машиналар/ Мелиоративные и строительные машины/ Reclamation and construction machines	5	150	15	15	20	25	75			5			8	exam

	КП/ ПД/ MS	Бейіндеу Цикл профил Мајо	уші пәндер циклы/ пирующие дисциплины/ r subjects' cycle	71	2130	165	325	60	160	275	1145		5	5	30	31		
	КП/ ПД/ MS	Машин технологияль Технологи машинострои Technologic build	а жасау өндірісін іқ қамтамасыздандыру/ ическое обеспечение тельного производства/ cal support of machine- ling production	15	450	45	45	60		75	225		5	5	5			
33	ЖК/ ВК/ UC	MZhOTP/ TPMP/ TPMBP 2301	Машина жасау өндірісінің технологиялық процестері/ Технологические процессы машиностроительного производства/ Technological processes of machine-building production	5	150	15	15	20		25	75		5				7	exam
34	ЖК/ ВК/ UC	MZhT/ TM/ MET 3302	Машина жасау технологиясы / Технология машиностроения / Mechanical engineering technology	5	150	15	15	20		25	75			5			7	exam
35	TK/ KB/ OC	OZhMPZh/ MERPO/ IORIE 4308	Онеркәсіптік жабдықтарды монтаждау, пайдалану және жөндеу/ Монтаж, эксплуатация и ремонт промышленого оборудования/ Installation, operation and repair of industrial equipment	5	150	15	15	20		25	75				5		7	exam
		OZhZhP/ PRPO/ PRIE 4308	Өнеркәсіптік жабдықтар-ды жөндеу және профи-лактика/ Профилактика и ремонт														7	

			промышленного оборудования/ Prevention and repair of industrial equipment													
	КП/	Өндірісті ұйы	мдастыру/ Организация													
	ПД/	производ	ства/ Organization of	25	750	63	147	40	105	395			11	14		
	MS		production													
36	ЖК/ ВК/ UC	MZhOU/ OMP/ OMBP 4304	Машина жасау өндірісін ұйымдастыру/ Организация машиностроительного производства/ Organization of machine- building production	6	180	18	42		30	90			6		7	exam
37	ЖК/ ВК/ UC	KE/ EP/ EE 4310	Кәсіпорын экономикасы/ Экономика предприятия/ The economy of the enterprise	5	150	15	35		25	75				5	18	exam
38	ЖК/ BK/ UC	MZhEK/ OTM/ LPME 4307	Машина жасаудағы еңбек қорғау/ Охрана труда в машиностроении/ Labor protection in mechanical engineering	5	150	15	35		25	75				5	7	exam
39	ЖК/ ВК/ UC	MZhOA/ AMP/ AMP 4305	Машина жасау өндірісін автоматтандыру/ Автоматизация машиностроительного производства/ Automation of machine- building production	5	150	15	35		25	75			5		7	exam
40	ЖК/ ВК/ UC	KP/ PP/ PP 4312	Кәсіби практика / Профессиональная практика/ Professional practice	4	120			40		80				4	7	diff. credit
	КП/ ПД/ MS	Өндірістік про жобалау проектирова	оцестерді модельдеу және / Моделирование и ние производственных	23	690	57	133	40	95	365			14	9		

		процессов/	процессов/ Modeling and design of														
		prod	uction processes														
		TPAZhZh/ SAPRTP/ CADTP 4303	Технологиялық процестерді АЖЖ/ САПР технологических процессов/ САD of technological processes													7	
41	TK/ KB/ OC	TZhABT/ TAUTS/ TACTS 4303	Технологиялық жүйелерді автоматты басқару теориясы/ Теория автоматического управления технологическими системами/ Theory of automatic control of technological systems	5	150	15	35		25	75				5		7	exam
42	TK/ KB/ OC	MZhKMAT / KMATM / CMATME 4306	Машина жасаудағы компьютерлік модельдеу және аддитивті технологиялар/ Компьютерное моделирование и аддитивные технологии в машиностроении/ Computer modeling and additive technologies in mechanical engineering	5	150	15	35		25	75				5		7	exam
		CADZh/ CADS/ CADS 4306	CAD жүйесі/ CAD система/ CAD system													7	
43	TK/ KB/	MZhOZh/ PMP/ DMEP 4309	Машина жасау өндірісін жобалау/ Проектирова- ние машиностроитель- ного производства/ Design of mechanical engineering production	5	150	150 15	35		25	75					5	7	exam
		AKZhT/ KATS/ CDAT 4309	Автомобильдер конструкциясы және жинақтау технологиялары/													7	

			Конструкции автомобилей и технологии сборки/ Car designs and Assembly technologies																		
44	TK/ KB/ OC	MZhOC/ CMP/ DMP 4313	Машина жасау өндірісін цифрландыру/ Цифровизация машиностроительного производства/ Digitalization of machine- building production	4	120	12	28			20	60								4	7	exam
		IE/ IE/ EE 4313	Инженерлік экология/ Инженерная экология/ Engineering ecology																	7	
45	ЖК/ BK/ UC	ОР/ РР/ МР 4311 ОР/ Троизводственная практика / Manufacturing practice		4	120				40		80							4		7	diff. credit
		Корытынды модуль/ Итоговый модуль/ Final module		8	240				80		160								8		
		Қорытынды аттестаттау/ Итоговая аттестация/ Final certification		8	240				80		160								8	7	
		Барль	243	7290	561	1369	380	280	1035	3665	30	31	30	30	30	31	30	31			

Department number	Abbreviations	The name of the department
1	ABB	Agronomy, breeding and biotechnology
2	SSAE	Soil science, agrochemistry and ecology
3	HPPQ	Horticulture, Plant protection and Quarantine
4	FRGMF	Forest resources, Game management and Fisheries
5	LRC	Land resources and cadastre
6	WRLR	Water resources and land reclamation
7	AMMI	Agricultural machinery and Mechanical Engineering
8	MU	«Machine use» named after I.V. Sakharov
9	ESA	Energy Saving and Automation
10	ITA	IT technologies and automation
11	OSBRA	Obstetrics, Surgery and Biotechnology of Reproduction of Animals
12	BS	Biological safety
13	CVM	Clinical Veterinary medicine
14	MVI	Microbiology, Virology and Immunology
15	VSEH	Veterinary sanitary examination and Hygiene
16	PMB	«Physiology, Morphology and Biochemistry» named after N.U.Bazanova
17	AAF	Accounting, Auditing and Finance
18	MOA	«Management and organization of agribusiness» named after Kh.D.Churin
19	TL	The Legal
20	ZE	Zooengineering
21	TSFP	Technology and Safety of food products
22	SD	Social disciplines
23	KRL	Kazakh and Russian languages
24	FL	Foreign languages
25	PES	Physical education and Sports
26	MD	Military Department

## 4. Modules Competency Map

Codes	Module	Educational competence	Learning outcomes
Codes MC1	Module. Humanities and language	Educational competence aimed at the formation of fundamental source and historiographic materials, as well as for the achievement of modern historical science of Kazakhstan; to determine the role of the history of Kazakhstan in the system of humanitarian knowledge; on revealing the specifics of the object and subject of history of Kazakhstan for the analysis of topical problems of the modern stage of development; on creation of scientifically grounded concept of history of Kazakhstan based on integral and objective coverage of the main stages of ethnogenesis of the Kazakh people, evolution of forms of statehood and civilization in the Great Steppe; on systematization of knowledge of the main events of the modern history of Kazakhstan. form a system of general competencies that ensure the socio- cultural development of the personality of the future specialist based on the formation of his ideological, civic and moral positions;	Learning outcomes - demonstrate knowledge and understanding of the main stages of development of the history of Kazakhstan - correlate the phenomena and events of the historical past with the general paradigm of world-historical development of human society through critical analysis; - possess the skills of analytical and axiological analysis in the study of historical processes and phenomena of modern Kazakhstan - be able to comprehend objectively and comprehensively the immanent features of the modern Kazakhstan model of development - to systematize and give a critical assessment of historical phenomena and processes in the history of Kazakhstan to evaluate the surrounding reality on the basis of ideological positions, formed by the knowledge of the fundamentals of philosophy, which provide scientific understanding and study of the natural and social world by methods of scientific and philosophical knowledge; - to interpret the content and specific features of the mythological, religious and scientific worldview; - to give assessment to everything happening in
MC3		develop the ability to interpersonal social and professional communication in the state, Russian and foreign languages;	<ul> <li>implement the use of language and speech tools based on a system of grammatical knowledge; analyze information in accordance with the situation of communication;</li> <li>to carry out the use of linguistic and speech means based on the system of grammatical knowledge; analyze information in accordance with the communication situation;</li> </ul>
MC4	Module. Professional and communicative	The development of information literacy through the mastery and the use of modern information and communication technologies in all areas of life and work;	<ul> <li>evaluate the activities and actions of communication participants.</li> <li>to use in personal activities various types of information and communication technologies: Internet resources, cloud and mobile services for searching, storing, processing, protecting and distributing information;</li> </ul>

MC5	Have an corrupt legislatio	intolerant attitude toward behavior, respectful of on and law.	<ul> <li>analyze events and actions from the point of view of the area of legal regulation and be able to refer to the necessary regulatory acts;</li> <li>to be guided in the current legislation; using the law, to protect their rights and interests,</li> <li>to carry out professional activities on the basis of a developed legal awareness, legal thinking and legal culture;</li> <li>to acquire a sufficient level of legal awareness;</li> <li>be able to assess the facts and phenomena of professional activity from an ethical point of view;</li> <li>apply moral rules and norms of behavior in specific life situations</li> </ul>
MC6	Be comp informat basic kr use the knowled apply th situation	betent to analyze and obtain tion in accordance with the nowledge of the economy; e basics of economic lige in various fields;able to his knowledge in solving al and practical problems.	<ul> <li>to know the fundamental problems of the functioning of the economy, the mechanism of action and manifestation of economic laws, as well as the main features of the leading schools and areas of economic science;</li> <li>to be aware of economic terms and categories, use them in their educational activities;</li> <li>to understand and know the main events of the world and domestic economic history, the course of ongoing reforms in the light of the strategy "Kazakhstan - 2050", development trends in the field of modern business;</li> <li>to distinguish and compare the behavior of market agents in different types of market structures;</li> <li>to compare the impact of macroeconomic policies in different countries;</li> <li>to argue their own views on modern macroeconomic phenomena;</li> <li>to use the knowledge gained in practice to assess the results of economic reforms in Karakhstan</li> </ul>
MC7	To be co of metho of low assessmo efficience	ompetent in the application ods for the implementation waste production and the ent of the environmental cy of economic activity.	<ul> <li>- know the contents of the basic terms in the field of ecology, environmental management; modern global and regional environmental problems and their solutions;</li> <li>- be able to apply environmental knowledge to solve and predict possible environmental problems;</li> <li>- apply methods for the implementation of low-waste production and assess the environmental performance of economic activity.</li> <li>- establish causal relationships between phenomena occurring in nature and society,</li> <li>- apply environmental knowledge to solve and predict possible environmental problems.</li> </ul>
MC8	Contribution this known issues of	tte to the ability to apply wledge to address the safety and reliability of	- to know the main legislative acts on industrial safety, labor protection, environmental protection and civil protection;

		operation of machinery and	- apply the knowledge gained to address the
		equipment and knowledge of the	safety and reliability of the operation of
		issues of social protection of	machinery and equipment;
		workers.	- ability to evaluate machinery and process
			equipment in terms of exposure to abnormal
			situations.
MC9	Module. Socio- political knowledge and a healthy lifestyle	form the skills of self-development and education throughout life;	<ul> <li>situations.</li> <li>-to assess situations in various spheres of interpersonal, social and professional communication, taking into account the basic knowledge of sociology, political science, cultural studies and psychology;</li> <li>to synthesize knowledge of these sciences as a modern product of integrative processes;</li> <li>to use scientific methods and approaches of research of a specific science, as well as the entire socio-political cluster;</li> <li>develop their own moral and civic position;</li> <li>operate with the social, business, cultural, legal and ethical norms of Kazakhstan society;</li> <li>demonstrate personal and professional competitiveness;</li> <li>to put into practice knowledge in the field of social sciences and humanities, having international recognition;</li> <li>to make a choice of methodology and analysis;</li> <li>summarize the results of the study;</li> <li>to synthesize new knowledge and present it</li> </ul>
			in the form of humanitarian socially significant
			products;
MC10		form a personality capable of mobility in the modern world, critical thinking and physical self- improvement.	- to build a personal educational trajectory throughout life for self-development and career growth, focus on a healthy lifestyle to ensure full social and professional activities through methods and means of physical culture.
	Core and majo	or subjects competencies	Learning Outcomes
MC11	¥		
MC12			
MC13			-
MC14			
MC15			
MC16			
MC17			
MC18			
MC19			
MC20			

e		The number of studied discipline		r of lines			-	gu	Quantity					
Training cours	Semester	CC	UC	OC	Theoretical training	Training practice	<b>Professional</b> internship	Professional practice	Final asessment	Total	Total hours	Military trainin	exam	differentiated credit
т	1	4	3		30					30	900		7	
1	2	4	2	1	29	2				31	930		7	1
п	3	3	2	1	30					30	900		6	
11	4	1	4	2	25		5			30	900		7	1
тт	5		3	3	30					30	900		6	
	6		4	2	26		5			31	930		6	1
IV -	7		3	3	26		4			30	900		6	1
	8		3	2	19			4	8	31	930		5	1
To	tal	12	24	14	215	2	14	4	8	243	7290	588	40	5

### 5. Summary table reflecting the volume of disbursed credits in the context of the educational program:

#### Information about the disciplines

discipline         (30-50 words)         of credits         competencies (codes)           1         History of Kazakhstan (SE)         The study of the course is aimed at the formation of students the concept of modern history of the Fatherland, based on a holistic and objective coverage of the problems of ethinogenesis of the Kazakh people, the evolution of forms of statehood and civilization in the great steppe and the totality of the most significant historical facts and events. Systematization of history, forming a scientific worldview and citizenship. Creation of ideological and spiritual basis for consolidation of multi-ethnic and multi- confessional Kazakhstan society         MC2           2         Philosophy         The course is aimed at the formation of students ideas a well as skills of self-analysis and moral self- regulation, the development of research abilities and the formation of intellecute potential. Special attention is paid to the problems of preservation of national identity, the assimilation of such key worldview concepts as justice, dignity and freedom and the role of philosophy in the modernization of public consciousness and the solution of global problems of our time         MC3           3         Foreign language         Taeching a foreign language communication skills in four main types of speech activity; Hinguistic competence – development of communication skills in four main types of speech activity; Hanguage the personality of the savallable methods and rechniques of self-study of languages and clusters.         MC3           4         Kazakh (Russian) language         The discipline is aimed for the development of language the personality of the sudent who is able to carry out cognitive and formomunication in the Russian langu	N⁰	Name of the	Short description of the discipline	Number	Formed
General education subjects cycle / Core Component         Core Component           1         History of Kazakhstan (SE)         The study of the concept of modern history of the Fatherland, based on a holistic and objective coverage of the problems of ethnogenesis of the Kazakh people, the evolution of forms of statehood and civilization in the great steppe and the totality of the most significant historical facts and events. Systematization of histori, forming a scientific worldview and citizenship. Creation of ideological and spiritual basis for consolidation of multi-ethnic and multi- corfessional Kazakhstan society         MC2           2         Philosophy         The course is aimed at the formation of students ideas about philosophy as a special form of knowledge of the world, its main sections, problems and methods, as well as skills of self-analysis and moral self- regulation, the development of research abilities and the formation of inellectual and creative potential. Special attention is paid to the problems of preservation of national identity, the assimilation of such key worldvice concepts as justice, dignity and freedom and the role of philosophy in the modernization of global problems of our time         10         MC3           3         Foreign language         Teaching a foreign language communicative speech competence – development of such key worldvice, orthographic, lexical, grammatical; socio-cultural competence – development of familiarization with the available methods and techniques of self-study of the student who is able to carry out cognitive and communicative activities in the Russian language in the available methods and techniques of self-study of the student who is able to carry out cognitive and communication in the context of the implementation of state programs of trilingualiam and spiri		discipline	(30-50 words)	of credits	competencies (codes)
1         History of Kazakhstan (SE)         The study of the concept of modern history of the Fatherland, based on a holistic and objective coverage of the problems of ethnogenesis of the Kazakh people, the evolution of forms of statehood and civilization in the great steppe and the totality of the most significant historical facts and events. Systematization of historical knowledge about the main events of history, forming a scientific worldview and citizenship. Creation of ideological and spiritual basis for consolidation of multi-ethnic and multi- corfessional Kazakhstan society         5         MC2           2         Philosophy         The course is aimed at the formation of students ideas about philosophy as a special form of knowledge of the world, its main sections, problems and methods, as well as skills of self-analysis and moral self- regulation, the development of research abilities and the formation of intellectual and creative potential. Special atrentom is paid to the problems of preservation of national identity, the assimilation of such key worldview concepts as justice, dignity and freedom and the role of philosophy in the modernization of of torigin language communicative competence in the totality of its components: speech competence – development of communicative competence, orthoorgraphic, lexical, grammatical; socio-cultural competence – the mastery of new linguistic means (phonetic, orthoorgraphic, lexical, grammatical; socio-cultural competence – the mastery of new linguistic means (phonetic, orthoorgraphic, lexical, grammatical; social, professional, intercultural competence – familiarization with the available methods and techniques of self-study of naguages and cultures.         10         MC3           4         Kazakh (Russian) language         The discipline is aimed for the development of language and professional,			General education subjects cycle / Core Component		(00005)
Kazakhstan (SE)       students' the concept of modern history of the Fatherland, based on a holistic and objective coverage of the problems of ethnogenesis of the Kazakh people, the evolution of forms of statehood and civilization in the great steppe and the totality of the most significant historical facts and events. Systematization of historical knowledge about the main events of history, forming a scientific worldview and citizenship. Creation of idelogical and spiritual basis for consolidation of multi-tentic and multi-confessional Kazakhstan society       5         2       Philosophy       The course is aimed at the formation of students ideas about philosophy as a special form of knowledge of the world, its main sections, problems and methods, as well as skills of self-analysis and moral self-regulation, the development of research abilities and the formation of intellectual and creative potential. Special attention is paid to the problems of preservation of alotal identity, the assimilation of such key worldview concepts as justice, dignity and freedom and the role of philosophy in the modernization of global problems for urime       10       MC3         3       Foreign language       Teaching a foreign language communicative competence - the totality of its components: speech competence - the development of foreign language communicative competence - the mastery of new linguistic means (phonetic, onthographic, lexical, grammatical; socio-cultural competence - the formation of the ability to represent their comparise and cultures:       10       MC3         4       Kazakh (Russian) language be personality of the student who is able to carry out cognitive and communication and the Russian language in the areas of interpersonal, social, professional, intercultural communication in the context of the i	1	History of	The study of the course is aimed at the formation of	5	MC1
4         Fatherland, based on a holistic and objective coverage of the problems of ethnogenesis of the Kazakh people, the evolution of forms of statehood and civilization in the great steppe and the totality of the most significant historical facts and events.           Systematization of historical knowledge about the main events of history, forming a scientific worldview and citizenship. Creation of ideological and spiritual basis for consolidation of multi-ethnic and multi- confessional Kazakhstan society         5           2         Philosophy         The course is aimed at the formation of students ideas about philosophy as a special form of knowledge of the world, its main sections, problems and methods, as well as skills of self-analysis and moral self- regulation, the development of research abilities and the formation of intellectual and creative potential. Special attention is paid to the problems of preservation of national identity, the assimilation of such key worldview concepts as justice, dignity and freedom and the role of philosophy in the modernization of public consciousness and the solution of global problems of our time         10         MC3           3         Foreign language         Tracching a foreign language communicative competence - the totality of its components: speech competence - development of new linguistic means (phonetic, orthographic, lexical, grammatical; socio-cultural competence - the formation of the ability to represent their country, its culture: educational and cognitive competence of familiarization with the available to carry out cognitive and communication and techniques of self-study of languages and cultures.         10         MC3           4         Kazakh (Russian) language         The discipline is aimed for the development		Kazakhstan (SE)	students the concept of modern history of the		
3         Foreign language         Teaching a foreign language sets tasks or the solution of the model of public consciousness and the solution of public formation of the development of foreign language         5         MC2           3         Foreign language         Teaching a foreign language sets tasks or the available methods and techniques of speech activity; illinguistic competence — the masin cybonet the indivity of its components; speech and the toxility of the source is a solution of sublems of the available methods, as well as foreign language to encode the world, its main sections, problems and methods, as well as skills of self-analysis and moral self-regulation, the development of research abilities and the formation of nublic-thems of preservation of national identity, the assimilation of such key worldview concepts as justice, dignity and freedom and the role of philosophy in the modernization of public consciousness and the solution of global problems of our me         10         MC3           3         Foreign language         Teaching a foreign language sets tasks for the development of foreign language communicative competence — in the totality of its components: speech competence — evelopment of communication skills in four main types of speech activity; linguistic competence — the mastery of new linguistic means (phonetic, orthographic, lexical, granmatical; socio-cultural competence — the available methods and techniques of self-study of languages and cultures.         10         MC3           4         Kazakh (Russian) language the processes, method of stude programs of trilingualism and spiritual modernization on stude programs of trilingualism and spiritual modernization of national intercultural commendence and the rotorage nad cultures.         10			Fatherland, based on a holistic and objective coverage		
4         Kazakh (Russian)           3         Foreign language           3         Foreign language           4         Kazakh (Russian)           4         Kazakh (Russian)           4         Kazakh (Russian)           5         Information of solicy of spech activity; inguage the personality of the available to confessional kazakh the intercultural communication of such the course is aimed at the formation of students ideas about philosophy as a special form of knowledge of the world, its main sections, problems and methods, as well as skills of self-analysis and moral self- regulation, the development of research abilities and the formation of intellectual and creative potential. Special attention is paid to the problems of preservation of national identity, the assimilation of such key worldview concepts as justice, dignity and freedom and the role of philosophy in the modernization of public consciousness and the solution of global problems of our time         10         MC3           3         Foreign language         Teaching a foreign language communicative competence in the totality of its components: speech competence – the mastery of new linguistic means (phonetic, orthographic, lexical, grammatical; socio-cultural competence – the mation of the ability to represent their country, its culture; educational and cognitive competence – familiarization with the available to carry out cognitive and communicative activities in the context of the implementation of state programs of trilingualism and spiritural modernization of anterpersonal, social, professional, intercultural commetment of language the processes, methods of search, storage and         5         MC1, MC4 <td></td> <td></td> <td>of the problems of ethnogenesis of the Kazakh people,</td> <td></td> <td></td>			of the problems of ethnogenesis of the Kazakh people,		
2         Philosophy         The great steppe and the totality of the most significant historical facts and events. Systematization of history forming a scientific worldview and citizenship. Creation of ideological and spiritual basis for consolidation of multi-ethnic and multi-confessional Kazakhstan society         5         MC2           2         Philosophy         The course is aimed at the formation of students ideas about philosophy as a special form of knowledge of the world, its main sections, problems and methods, as well as skills of self-analysis and moral self-regulation, the development of research abilities and the formation of intellectual and creative potential. Special attention is paid to the problems of preservation of national identity, the assimilation of such key worldview concepts as justice, dignily and freedom and the role of philosophy in the modernization of global problems of our time           3         Foreign language         Teaching a foreign language sets tasks for the development of foreign language communicative competence in the totality of its components: speech competence – development of communication skills in four main types of specch activity; linguistic competence – development of communication skills in four main types of specch activity; linguistic competence – familiarization with the available methods and techniques of self-study of languages and cultures.         10         MC3           4         Kazakh (Russian)         The discipline is aimed for the development of integrand, social, professional, intercultural competinized on inthe context of the implementation of student who is able to carry out cognitive and communicative activities in the context of the implementation of state programs of intringualism and spiritual modemization of national conscious			the evolution of forms of statehood and civilization in		
4         Kazakh (Russian) language         Foreign language to foreign language         10         MC3           4         Kazakh (Russian) language         The corpresent their country, its culture; the solution of sublement of the solution of sublement of the world, its main sections, problems and methods, as well as skills of self-analysis and moral self- regulation, the development of research abilities and the formation of intellectual and creative potential. Special attention is paid to the problems of preservation of national identity, the assimilation of such key worldview concepts as justice, dignity and freedom and the role of philosophy in the modernization of public consciousness and the solution of global problems of our time         10         MC3           3         Foreign language         Teaching a foreign language sets tasks for the development of foreign language communicative competence – the totality of its components: speech competence – development of communication skills in four main types of speech activity; linguistic competence – the formation of the ability to represent their country, its culture; educational and cognitive competence – familiarization with the available methods and techniques of self-study of languages and cultures.         10         MC3           4         Kazakh (Russian) language         The discipline is aimed for the development of national and cognitive compresonal, social, professional, intercultural communication in the constrot of the implementation of state programs of trilingualism and spiritual modernization of national consciousness. Discipline involves the successful mattery of speech activities in according to level training         5         MC1, MC4			the great steppe and the totality of the most significant		
4         Kazakh (Russian)           7         Information and completence — the formation of students ideas and the formation of incelocity is completence in the complete			historical facts and events.		
3       Foreign language       Teaching a foreign language sets tasks for the development of foreign language sets tasks for the development of such activities in the totality of its competence – development of the ability is and its competence – familiarization with the available methods and techniques of self-such yof the such use is self-such yof the such use is a solution of such the totality of the such use is a solution of such the total and competence – the formation of the available methods and techniques of self-such yets and the total total activities in the ability to represent the totality of the such two is able to competence – the formation of the available methods and techniques of self-such yets and the totality of the such two is able to competence – the formation of the available methods and techniques of self-such yof the such two is able to competence – the formation of the ability to competence – the formation of the ability to represent their competence – the formation of the ability to represent their competence – the formation of the ability of the such who is able to carry out cognitive and communication in the custor of the available methods and techniques of self-such yof of languages and cultures.       10       MC3         4       Kazakh (Russian) language in the areas of interpersonal, social, professional, intercultural communication of state programs of trilingualism and spiritual modernization of national consciousness. Discipline involves the successful material and yof the successful materis and the successes methods of secreces and a			Systematization of historical knowledge about the		
and citizenship. Creation of ideological and spiritual basis for consolidation of multi-centric and multi-confessional Kazakhstan society <ul> <li>Philosophy</li> <li>The course is aimed at the formation of students ideas about philosophy as a special form of knowledge of the world, its main sections, problems and methods, as well as skills of self-analysis and moral self-regulation, the development of research abilities and the formation of intellectual and creative potential. Special attention is paid to the problems of preservation of national identity, the assimilation of such key worldview concepts as justice, dignity and freedom and the role of philosophy in the modernization of public consciousness and the solution of global problems of our time</li> </ul> <li>Foreign language</li> <li>Teaching a foreign language communicative competence in the totality of its components: speech competence – development of communication skills in four main types of speech aritivity; linguistic means (phonetic, orthographic, lexical, grammatical; socio-cultural competence – the formation of the ability to represent their country, its culture; educational and cognitive competence – familiarization with the available methods and techniques of self-study of languages and cultures.</li> <li>Kazakh (Russian) language in the areas of interpersonal, social, professional, intercultural communicative and to chary out cognitive and communicative and consciousness. Discipline is naived for the sucesful and spiritual modernization of national consciousness. Discipline involves the successful mastery of speech activities in the context of the implementation of state programs of trilingualism and spiritual modernization of national consciousness. Discipline involves the successful mastery of speech activities in according to level training         <ul> <li>Information and copplice bereases, methods of solar corage an</li></ul></li>			main events of history, forming a scientific worldview		
basis for consolidation of multi-ethnic and multi- confessional Kazakhsan society         MC2           2         Philosophy         The course is aimed at the formation of students ideas about philosophy as a special form of knowledge of the world, its main sections, problems and methods, as well as skills of self-analysis and moral self- regulation, the development of research abilities and the formation of intellectual and creative potential. Special attention is paid to the problems of preservation of national identity, the assimilation of such key worldview concepts as justice, dignity and freedom and the role of philosophy in the modernization of global problems of our time         10         MC3           3         Foreign language         Teaching a foreign language sets tasks for the development of foreign language communicative competence in the totality of its components: <b>speech competence</b> – development of communication skills in four main types of speech activity; <b>linguistic competence</b> – the mastery of new linguistic means (phonetic, orthographic, lexical, grammatical; <b>socio-cultural competence</b> – the formation of the ability to represent their country, its culture; <b>educational and cognitive competence</b> – familiarization with the available methods and techniques of self-study of languages and cultures.         10         MC3           4         Kazakh (Russian) language         The discipline is aimed for the development of carry out cognitive and communicative activities in the Russian language in the areas of interpersonal, social, professional, intercultural communication in the context of the implementation of state programs of trilingualism and spiritual modernization of national consciousness. Discipline involves the successful mastery of speech activities in according to level training			and citizenship. Creation of ideological and spiritual		
2         Philosophy         The course is aimed at the formation of students ideas about philosophy as a special form of knowledge of the world, its main sections, problems and methods, as well as skills of self-analysis and moral self- regulation, the development of research abilities and the formation of intellectual and creative potential. Special attention is paid to the problems of preservation of national identity, the assimilation of such key worldview concepts as justice, dignity and freedom and the role of philosophy in the modernization of public consciousness and the solution of global problems of our time         10         MC3           3         Foreign language         Teaching a foreign language sets tasks for the development of foreign language communicative competence in the totality of its components: <b>speech competence</b> – the mastery of new linguistic means (phonetic, orthographic, lexical, grammatical; <b>socio-cultural competence</b> – the formation of the ability to represent their country, its culture; educational and cognitive competence – familiarization with the available methods and techniques of self-study of languages and cultures.         10         MC3           4         Kazakh (Russian) language         The discipline is aimed for the development of language the personality of the student who is able to carry out cognitive and communication in the context of the implementation of state programs of trilingualism and spiritual modernization of national consciousness. Discipline involves the successful mastery of speech activities in according to level training         5         MC1, MC4 analyze the processes, methods of search, storage and			basis for consolidation of multi-ethnic and multi-		
2       Philosophy       The course is aimed at the formation of students ideas       5       MC2         about philosophy as a special form of knowledge of the world, its main sections, problems and methods, as well as skills of self-analysis and moral self-regulation, the development of research abilities and the formation of intellectual and creative potential. Special attention is paid to the problems of preservation of national identity, the assimilation of such key worldview concepts as justice, dignity and freedom and the role of philosophy in the modernization of gubble consciousness and the solution of global problems of our time       10       MC3         3       Foreign language       Teaching a foreign language sets tasks for the development of foreign language communicative competence – development of components: speech competence – development of communication skills in four main types of speech activity; linguistic competence – the mastery of new linguistic means (phonetic, orthographic, lexical, grammatical; socio-cultural competence – the formation of the ability to represent their country, its culture; educational and cognitive competence – familiarization with the available methods and techniques of self-study of languages and cultures.       10       MC3         4       Kazakh (Russian)       The discipline is aimed for the development of language the personality of the student who is able to carry out cognitive and communication in the context of the implementation of state programs of trilingualism and spiritual modernization of national consciousness. Discipline involves the successful mastery of speech activities in according to level training       5       MC1, MC4 analyze the processes, methods of search, storage and	-		confessional Kazakhstan society		
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4       Kazakh (Russian)         4       Kazakh (Russian)         1       Information and comsuring         5       Information and communication			as well as skills of self analysis and moral self		
4       Kazakh (Russian)         4       Kazakh (Russian)         1       Mc3         4       Kazakh (Russian)         1       De discipline in of the ability to critically explanation in the context of the implementation of such key worldview concepts as justice, dignity and freedom and the role of philosophy in the modernization of global problems of our time         3       Foreign language       Teaching a foreign language sets tasks for the development of foreign language communicative competence in the totality of its components:       10       MC3         5       Information and cognitive and communication of the ability to represental, social, professional, intercultural communication of state programs of trilingualism and spiritual modernization of state programs of trilingualism and spiritual modernization of state programs of trilingualism and spiritual modernization and communication of state programs of trilingualism and spiritual modernization of network the successful mastery of speech activities in the context of the implementation of state programs of trilingualism and spiritual modernization of network the successful mastery of speech activities in according to level training         5       Information and communication and processes, methods of search, storage and       5       MC1, MC4			as well as skills of self-analysis and motal self-		
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communication analyze the processes, methods of search, storage and	З	Information and	Formation of the ability to critically evaluate and	5	MCI, MC4
technology processing of information methods of collecting and		technology	analyze the processes, methods of search, storage and processing of information methods of collecting and		
transmitting information through digital technologies		locimology	transmitting information through digital technologies		
Mastering the concentual foundations of the			Mastering the concentual foundations of the		
architecture of computer systems, operating systems			architecture of computer systems, operating systems		

		and networks. Formation of knowledge about the		
		concepts of development of network and web		
		applications, information security tools.		
	Social and political kno	owledge module (Social Studies Political Studies, Cultu	ıral Studies, l	Psychology)
6	Social Studies	studies society, revealing the internal mechanisms of	2	MC2, MC9
		its structure and development of its		
		structures(structural elements: social communities,		
		institutions, organizations and groups); patterns of		
		social action and mass behavior of people, as well as		
		the relationship between the individual and society		
		sociology explains social phenomena, collects and		
		summarizes information about them.		
7	Political Studies	the science of politics, the laws of the emergence of	2	MC2, MC9
		political phenomena (institutions, relations,		
		processes), the ways and forms of their functioning		
		and development, the methods of management of		
		political processes, political consciousness, culture,		
		etc., political consciousness, culture, etc.		
8	Cultural Studies	teachings about culture, its history, essence, laws of	2	MC2, MC9
		functioning and development, which can be found in		
		the works of scientists, representing various options		
		for understanding the phenomenon of culture. In		
		addition, the cultural Sciences study the system of		
		cultural institutions through which human education is		
		carried out and which produce, store and transmit		
0	Davidh alla ari	Cultural information	2	
9	Psychology	Psychology – a science whose purpose is to study the	Z	MC2, MC9
		mechanisms of functioning of the numan psyche. It		
		situations resulting in thoughts feelings and		
		experiences Psychology is what helps us to know		
		ourselves more deeply to understand our problems		
		and their causes to realize our shortcomings and		
		strengths Her study will contribute to the		
		development in man of moral character and ethics		
10	Physical Training	The discipline covers a range of issues related to	8	MC10
10	r nystear Training	physical culture as part of human culture, healthy	0	11010
		lifestyle, its main components, socio-biological basis		
		of adaptation of the human body to physical and		
		mental activity, preparation for independent physical		
		culture and sports, age physiology, self-control of		
		physical condition, psychophysical basis of physical		
		culture and sports, hygiene.		
	·	General education subjects cycle / Optional componer	nt	
11	Law and anti-	The purpose of the discipline is the education of	5	MC5 - LO1,
	corruption culture	Kazakhstani patriotism as a necessary condition for		LO2
		the improvement of legal statehood in the Republic of		
		Kazakhstan, the formation of students' world		
		knowledge, the improvement of public, legal culture		
		and private legal knowledge. Improving legal literacy		
		within the framework of anti-corruption legislation		
		and the formation of anti-corruption views of		
		students, standards of behavior, negative attitude to		
		any manifestations of corruption.		
12	Economy	The purpose of the discipline is to reveal the general	5	MC5 - LO2,
		toundations of economic theory; study of the laws of		LO13
		tarming and the rational behavior of business entities		
		at various levels, clarification of the principles and		
		laws of economic development.		

13	Ecology	The formation of environmental knowledge and	5	MC6–LO2,
		consciousness, acquiring in-depth knowledge of		LO10, LO11
		general ecology, the foundations of sustainable		
		development of nature and society, obtaining		
		theoretical and practical knowledge of modern		
		methods for the rational use of natural resources and		
		environmental protection.		
14	Life safety	The discipline «Life Safety» sets out the objectives of	5	MC7 – LO1,
		the course: organizing and ensuring the protection of		LO2
		the population from the consequences of accidents,		
		catastrophes, natural disasters and the use of modern		
		means of destruction; ensuring the sustainable		
		functioning of business facilities in emergency		
		situations of peace and war; organizing and carrying		
		out rescue and other urgent work in the centers of		
		destruction and areas of catastrophic flooding,		
		measures to eliminate the consequences of modern		
		weapons, natural disasters, major accidents and		
		catastrophes.		
15	Entrepreneurship	To form students' readiness for entrepreneurial	5	
	_	activity to create new products and provide services		
		through theoretical, scientific and practical		
		knowledge. To teach the student to develop a business		
		plan for an innovative design solution or a business		
		idea for organizing entrepreneurial activities.		
16	Fundamentals of	As a result of studying the theoretical course, student	5	
	scientific research	must learn the methodology and methodology of		
		scientific research, be able to identify problem		
		situations using the methods of analysis, synthesis and		
		abstract thinking. As a result of learning the		
		discipline, the student will acquire the skills of		
		presenting scientific materials and forming the text of		
		a scientific work. The knowledge gained during the		
		course is necessary for the subsequent study of the		
		disciplines of the professional cycle, the passage of		
		professional practices, the preparation of the final		
		qualifying work.		
15	Y Y 1 3 2 1 .	Core subjects cycle / University component	_	
17	Higher Mathematics	The course of higher mathematics is the main	5	
		roundation of the mathematics education of a		
		specialist. Sections (linear algebra, vector algebra,		
		analytical geometry and elements of mathematical		
		analysis) contain modern methods of analysis and are		
		focused on the use of mathematical methods in		
10	Dhysics	The formation of on in death understanding of the	E	
18	Filysics	the formation of an in-depth understanding of the	D	
		structure of matter, the nature of the phenomena		
		occurring in it, determining the development of		
		natural science and scientific and technological		
		development of new brenches of technology and new		
		technologies		
10	Descriptive	Instituction and presentation of methods for	1	
17	geometry and	constructing images and research of ways to solve	+	
	engineering granhies	problems of a geometric nature. The study of methods		
	engineering graphies	of projecting spatial objects on a plane the		
		development of students spatial representations: the		
		formation of the theoretical foundations of drawing		
		construction; Teaching students to the rules of		
I		, 0		

		execution and design documentation; the study of the		
		theory of drawing construction; the transfer of		
		theoretical knowledge, practical skills and abilities to		
		develop and read product drawings.		
20	Chemistry	Acquisition of new knowledge and skills in the field	4	
	-	of electroplating chemistry, methods of chemical and		
		physico-chemical analysis, formation of a general		
		chemical outlook and development of chemical		
		thinking in the field of metalworking.		
21	Materials Science	Formation of basic knowledge about the main groups	4	
		of metallic and non-metallic engineering materials,		
		about their most important properties, distinctive		
		features and areas of application, about methods of		
		improving their physical, mechanical, technological		
		and operational properties.		
22	Theoretical	Basic concepts and axioms of mechanics; ways of	6	
	mechanics	transforming systems of forces; conditions of		
		equilibrium of solids under the action of forces; ways		
		of specifying the movement of a point, determining its		
		speed and acceleration; translational, rotational and		
		plane motion of a body, complex motion of a point;		
		the main tasks of the point dynamics; the geometry of		
		the masses of the mechanical system; general		
		theorems of dynamics.		
23	Strength of materials	Resistance of materials is the basis of all engineering	5	
		calculations for strength, stiffness and stability of all		
		structural elements. The physical and mechanical		
		properties of materials, stresses and strains in the		
		simplest and most complex types of deformation are		
		studied. The laws of stability of structural elements, as		
		well as the behavior of materials under dynamic and		
24	T1	Variable loads are considered.	5	
24	I neory of	Familiarization with the main types, principles of	5	
	mechanisms and	machines the principles of operation of individual		
	machines	machines, the principles of operation of individual		
		Study of general methods of research and design of		
		schemes of mechanisms necessary for creating		
		machines: Formation of skills for finding kinematic		
		machines; Formation of skills for finding kinematic and dynamic parameters of specified mechanisms and		
		machines; Formation of skills for finding kinematic and dynamic parameters of specified mechanisms and machines; Determination of optimal parameters of		
		machines; Formation of skills for finding kinematic and dynamic parameters of specified mechanisms and machines; Determination of optimal parameters of designed mechanisms according to specified		
		machines; Formation of skills for finding kinematic and dynamic parameters of specified mechanisms and machines; Determination of optimal parameters of designed mechanisms according to specified kinematic and dynamic properties.		
25	Machine details and	machines; Formation of skills for finding kinematic and dynamic parameters of specified mechanisms and machines; Determination of optimal parameters of designed mechanisms according to specified kinematic and dynamic properties.	6	
25	Machine details and design basics	machines; Formation of skills for finding kinematic and dynamic parameters of specified mechanisms and machines; Determination of optimal parameters of designed mechanisms according to specified kinematic and dynamic properties. Formation of students' skills of making optimal decisions when choosing the most rational materials.	6	
25	Machine details and design basics	<ul> <li>machines: Formation of skills for finding kinematic and dynamic parameters of specified mechanisms and machines; Determination of optimal parameters of designed mechanisms according to specified kinematic and dynamic properties.</li> <li>Formation of students' skills of making optimal decisions when choosing the most rational materials, shapes, sizes, degrees of accuracy and surface</li> </ul>	6	
25	Machine details and design basics	<ul> <li>machines' of mechanisms necessary for creating machines; Formation of skills for finding kinematic and dynamic parameters of specified mechanisms and machines; Determination of optimal parameters of designed mechanisms according to specified kinematic and dynamic properties.</li> <li>Formation of students' skills of making optimal decisions when choosing the most rational materials, shapes, sizes, degrees of accuracy and surface roughness, as well as technical conditions for</li> </ul>	6	
25	Machine details and design basics	<ul> <li>schemes of mechanisms necessary for creating machines; Formation of skills for finding kinematic and dynamic parameters of specified mechanisms and machines; Determination of optimal parameters of designed mechanisms according to specified kinematic and dynamic properties.</li> <li>Formation of students' skills of making optimal decisions when choosing the most rational materials, shapes, sizes, degrees of accuracy and surface roughness, as well as technical conditions for manufacturing, assembly and requirements for the</li> </ul>	6	
25	Machine details and design basics	<ul> <li>schemes of mechanisms necessary for creating machines; Formation of skills for finding kinematic and dynamic parameters of specified mechanisms and machines; Determination of optimal parameters of designed mechanisms according to specified kinematic and dynamic properties.</li> <li>Formation of students' skills of making optimal decisions when choosing the most rational materials, shapes, sizes, degrees of accuracy and surface roughness, as well as technical conditions for manufacturing, assembly and requirements for the operation of parts and assembly units of machines.</li> </ul>	6	
25	Machine details and design basics Basics of	<ul> <li>schemes of mechanisms necessary for creating machines; Formation of skills for finding kinematic and dynamic parameters of specified mechanisms and machines; Determination of optimal parameters of designed mechanisms according to specified kinematic and dynamic properties.</li> <li>Formation of students' skills of making optimal decisions when choosing the most rational materials, shapes, sizes, degrees of accuracy and surface roughness, as well as technical conditions for manufacturing, assembly and requirements for the operation of parts and assembly units of machines.</li> <li>The discipline «Basics of interchangeability» links</li> </ul>	6	
25	Machine details and design basics Basics of interchangeability	<ul> <li>schemes of mechanisms necessary for creating machines; Formation of skills for finding kinematic and dynamic parameters of specified mechanisms and machines; Determination of optimal parameters of designed mechanisms according to specified kinematic and dynamic properties.</li> <li>Formation of students' skills of making optimal decisions when choosing the most rational materials, shapes, sizes, degrees of accuracy and surface roughness, as well as technical conditions for manufacturing, assembly and requirements for the operation of parts and assembly units of machines.</li> <li>The discipline «Basics of interchangeability» links into a single whole the design, production technology,</li> </ul>	6	
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25	Machine details and design basics Basics of interchangeability	<ul> <li>schemes of mechanisms necessary for creating machines; Formation of skills for finding kinematic and dynamic parameters of specified mechanisms and machines; Determination of optimal parameters of designed mechanisms according to specified kinematic and dynamic properties.</li> <li>Formation of students' skills of making optimal decisions when choosing the most rational materials, shapes, sizes, degrees of accuracy and surface roughness, as well as technical conditions for manufacturing, assembly and requirements for the operation of parts and assembly units of machines.</li> <li>The discipline «Basics of interchangeability» links into a single whole the design, production technology, operation and repair, as well as the control of products, and considers the requirements for the nature and accuracy of typical connections of machine parts, methods for ensuring the required accuracy,</li> </ul>	6	
25	Machine details and design basics Basics of interchangeability	<ul> <li>schemes of mechanisms necessary for creating machines; Formation of skills for finding kinematic and dynamic parameters of specified mechanisms and machines; Determination of optimal parameters of designed mechanisms according to specified kinematic and dynamic properties.</li> <li>Formation of students' skills of making optimal decisions when choosing the most rational materials, shapes, sizes, degrees of accuracy and surface roughness, as well as technical conditions for manufacturing, assembly and requirements for the operation of parts and assembly units of machines.</li> <li>The discipline «Basics of interchangeability» links into a single whole the design, production technology, operation and repair, as well as the control of products, and considers the requirements for the nature and accuracy of typical connections of machine parts, methods for ensuring the required accuracy, metrological assurance of product quality.</li> </ul>	6	
25 26 27	Machine details and design basics Basics of interchangeability Metal cutting and	<ul> <li>schemes of mechanisms necessary for creating machines; Formation of skills for finding kinematic and dynamic parameters of specified mechanisms and machines; Determination of optimal parameters of designed mechanisms according to specified kinematic and dynamic properties.</li> <li>Formation of students' skills of making optimal decisions when choosing the most rational materials, shapes, sizes, degrees of accuracy and surface roughness, as well as technical conditions for manufacturing, assembly and requirements for the operation of parts and assembly units of machines.</li> <li>The discipline «Basics of interchangeability» links into a single whole the design, production technology, operation and repair, as well as the control of products, and considers the requirements for the nature and accuracy of typical connections of machine parts, methods for ensuring the required accuracy, metrological assurance of product quality.</li> </ul>	6 5 5	
25 26 27	Machine details and design basics Basics of interchangeability Metal cutting and cutting tools	<ul> <li>schemes of mechanisms necessary for creating machines; Formation of skills for finding kinematic and dynamic parameters of specified mechanisms and machines; Determination of optimal parameters of designed mechanisms according to specified kinematic and dynamic properties.</li> <li>Formation of students' skills of making optimal decisions when choosing the most rational materials, shapes, sizes, degrees of accuracy and surface roughness, as well as technical conditions for manufacturing, assembly and requirements for the operation of parts and assembly units of machines.</li> <li>The discipline «Basics of interchangeability» links into a single whole the design, production technology, operation and repair, as well as the control of products, and considers the requirements for the nature and accuracy of typical connections of machine parts, methods for ensuring the required accuracy, metrological assurance of product quality.</li> <li>The course «Metal cutting and cutting tools» studies the basics of cutting theory, types of metal cutting,</li> </ul>	6 5 5	

		well as cutting tools: types and methods of		
		application.		
28	Metal-cutting	The formation of complex knowledge structures and	5	
	machines	kinematic schemes of machine tools, rules of		
		operation and maintenance, the calculation of process		
		capabilities in choosing machine tools in the		
		machining, familiarization with the principles of		
		operation of automatic, semi-automatic, special and		
		aggregate machines and automatic lines, CNC		
		machine tools, management, measuring, loading and		
		unloading operations.		
29	Technological	The discipline forms a complex of knowledge on the	5	
	equipment	design and constructive execution of technological		
		equipment for various purposes, on the calculation of		
		the selevices and the choice of clamping devices, on		
		the calculation of power devices and the necessary		
		devices		
		Core subjects cycle / Ontional Component		
30	Computer graphics	Forms students worldviews in computer graphics and	6	
	Comparer Stupines	systematic mastery of students knowledge in the field	0	
		of automating the execution of design graphic and text		
		documentation, creating, processing and displaying		
		digital graphic images, as well as instilling in students		
		the skills of using computer-aided design systems for		
		solving design problems.		
31	Locksmith business	The basic information about the physical, mechanical	6	
		and technological properties of materials is given. The		
		issues of heat treatment of metals and alloys, the rules		
		for performing the main types of metalworking:		
		marking, cutting and cutting, filing, threading,		
		bending and straightening, lapping, drilling,		
		countersinking, deployment, riveting, soldering, etc.,		
		types of tools for each locksmith operation, methods		
		of their implementation and methods of workplace		
		organization are described. The description of metal-		
		cutting machines used in the repair of equipment is		
		also given. The issues of operation of metal-cutting		
		locksmith and installation works the organization of		
		wolding works, best treatment of metals and allows		
		are considered		
32	Fundamentals of	The fundamentals of hydraulics and heat engineering	1	
52	hydraulics and heat	are considered as a single heat engineering process	-	
	engineering	consisting of: a heat source, a heat carrier and a heat		
	88	exchanger connected by the laws of physics,		
		thermodynamics, fluid and gas mechanics. The main		
		directions in industrial hydraulics and heat		
		engineering and their relationship with water as the		
		main factor in obtaining heat and the role of the heat		
		carrier from the heat source to the heat exchanger are		
		described.		
33	Fluid and gas	Formation of a complex of knowledge of the basic	4	
	mechanics	laws of fluid and gas mechanics, the ability to apply		
		these laws to solve practical problems and possession		
		of standard methods for calculating the hydro-		
		mechanical parameters of technological processes, as		
		well as processes occurring in hydraulic systems of		
		technological equipment and automation in		

		mechanical engineering.		
34	Standardization,	Formation of students' knowledge about state acts and	4	
	certification and	regulatory documents in the field of standardization		
	technical	and certification of products in production; about the		
	measurement	principles and methods of standardization and		
		certification; about control methods; about the State		
		standard; The essence and basic concepts of		
		certification. Goals and principles of certification.		
		Formation of knowledge and skills in the use of		
		measuring instruments, testing and control;		
		Familiarization with the types and characteristics of		
		measuring instruments used in technological		
		machines and equipment.		
35	Accuracy rating and	Formation of students' knowledge about the methods	4	
	technical	of ensuring the interchangeability of various standard		
	measurements	compounds, about the normalization of the accuracy		
		of parameters that determine the quality of products in		
		mechanical engineering. Development of students '		
		skills in analyzing the influence of input parameters		
		on the functional parameters of the product and its		
		parts, as well as skills in choosing the accuracy of		
		input parameters, the purpose of landings, the		
		tolerance fields of bearings, threads, keyway and		
		spline connections. Development of practical skills in		
		the implementation of technical measurements and the		
		use of widely used measuring instruments in		
		mechanical engineering.		
36	Lifting and transport	The study of the discipline «Lifting and transport	5	
	machines	machines» is intended for the implementation of		
		fundamental training in the field of device, design,		
		calculation methods and research, development		
		trends, areas of use of the main types of lifting and		
		transport machines used for complex mechanization		
		and automation of loading and unloading operations		
		at machine-building enterprises.		
37	Hydraulic pneumatic	Familiarization of students with the current state and	5	
	drive and hydraulic	prospects for the development of calculation and		
	pneumatic	design of hydraulic pneumatic machines, the study of		
	automation	the design, the principle of operation of this group of		
		machines, mastering the methods of calculation and		
		selection of parameters, mastering rational methods of		
		operation of hydraulic pneumatic drives of		
		technological machines; the study of factors affecting		
		the choice of hydropneumatic equipment of		
		technological machines and the technical indicators of		
		their work; the study of the device, the principle of		
		operation, calculation and selection of the main		
		parameters of hydropneumatic equipment, the		
		conditions of its use and operation.		
38	Basics of electrical	Formation of a complex of knowledge on the device,	5	
	engineering,	principles of operation of electric machines and		
	electronics and	apparatuses, as well as on automation; forms		
	automation	knowledge about the circuits of an electric circuit,		
		basic concepts and definitions; about electric circuits		
		of direct and sinusoidal current; about electric		
		machines and apparatuses; about electronic and		
		semiconductor devices; about elements of automated		
		systems.		
39	Electronics and	«Electronics and microprocessor technology»	5	

	microprocessor technology	introduces students to the classification of microprocessor systems and electronics (EMT), basic architectures (EMT), functional nodes and the principle of operation of the processor, by studying the architecture, the command system, the procedure for working with the main peripheral devices and subsystems of a specific single-chip RISC microcontroller, fixes the main theoretical provisions.	~	
40	Robotics and flexible production systems	The study of industrial robots and manipulators of technological equipment, features of the design and calculation of modern structures of robotic complexes, their layout and structures, characteristics and requirements, conditions for the use of various types of manipulators in production. Students receive the necessary complex of knowledge on the means of automation of modern production, the ability to determine a rational combination of the main technical and economic indicators, instilling practical skills necessary for the research, calculation and design of industrial robots and manipulators.	2	
41	Design and manufacture of blanks	Studying the discipline gives students knowledge and skills in choosing the method of obtaining workpiece, providing low-waste and non-waste technology, methods of design and production of blanks. The main objectives of the discipline are to get acquainted with the current state of procurement and new promising ways of obtaining workpiece.	5	
42	Tractors and cars	To form students" knowledge of the design and construction of tractors and cars, the basics of theory and calculation, testing of tractors and their engines. To teach students to properly understand and evaluate the design of existing machines, the general structure of tractors and cars, internal combustion engines.	5	
43	Road construction machines	Familiarization of students with the structure and layout of a road-building machine, the main units, mechanisms, systems, their components that determine the technical and economic qualities and scope of application of machines; with the design of general-purpose parts and assemblies used in the layout of machines, methods for assessing their technical and operational performance.	5	
44	Agricultural machinery	Formation of theoretical knowledge about the 5 classification, purpose, device, technical characteristics of agricultural machines, as well as practical skills in the design and layout of agricultural machines.		
45	Reclamation and construction machines	Formation of theoretical knowledge about the classification, purpose, device, technical characteristics of reclamation and construction machines, as well as practical skills in the design and layout of reclamation and construction machines.	5	
	Major subjects cycle /University component			Г
46	Technological processes of machine-building production	Formation of students" theoretical foundations about the types and structure of technological processes of modern machine-building production and the stages of the life cycle of manufactured products. Technological processes such as cutting of materials in the production of blanks, welding production processes, processes in the processing of materials by	5	

		physical and electrophysical methods, processes in		
		chemical and electrochemical processing of materials,		
		foundry processes, metal forming processes,		
		technological processes for obtaining various products		
		and the equipment and tools used in this process are		
		considered.		
47	Mechanical	Formation of deep scientific knowledge of the	5	
	engineering	theoretical foundations of the design and production		
	technology	of engineering products, as well as the skills to solve		
		the main problems associated with ensuring the		
		specified quality of machines and its parts.		
		Knowledge of the basics of engineering technology		
		of blonks and machine parts the progress of		
		technological operations technological processes and		
		the entire cycle of manufacturing the parts pacessary		
		for the analysis forecasting planning and control of		
		engineering production		
48	Organization of	The discipline considers the basic concepts of the	6	
10	machine-building	organization of production: the principles of the	0	
	production	organization of the production process forms		
	Production	methods and types of production, the concept of the		
		production cycle; methods of calculating the		
		economic efficiency of in-line production; selection		
		and justification of the type of production and the		
		formation of enterprise structures, calculation and		
		analysis of the production cycle of manufacturing		
		products; planning the needs of the enterprise in		
		various types of equipment, calculation of the		
		economic efficiency of improving the organization of		
		production; methods of analysis and evaluation of the		
		organizational and technical level of production.		
49	The economy of the	The study of the theory and practice of economic	5	
	enterprise	activity of enterprises, their interaction with other		
		participants in the economic process. Economic and		
		social efficiency of production. Investment and		
		innovation policy of the enterprise. Ensuring the		
		competitiveness of products. The economic strategy		
		production The company's finances		
50	Labor protection in	Studying the discipline gives students the knowledge	5	
50	mechanical	and skills to identify dangerous and harmful	5	
	engineering	production factors in mechanical engineering The		
	engineering	main objectives of studying the discipline are the		
		development of a system of technical measures and		
		means to ensure occupational safety in mechanical		
		engineering, the development of the content of the		
		main issues of industrial safety and labor protection		
		management, the development of the main directions		
		of fire safety at enterprises and organizations of		
		mechanical engineering.		
51	Automation of	Formation of students' competencies necessary for the	5	
	machine-building	development and implementation of modern		
	production	principles, methods and means of automation of		
		technological processes, as well as the impact of the		
		level of automation of technological and production		
		processes on the efficiency of production and		
		competitiveness of products.		
	Major subjects cycle /Optional component			

52	Installation,	«Installation, operation and repair of industrial	5	
	operation and repair	equipment» is a discipline that forms the knowledge	c	
	of industrial	necessary for the effective placement, operation and		
	equipment	organization of the repair service of industrial		
	• Jash ment	equipment, where the production efficiency of		
		placement and the causes of various malfunctions		
		during operation and ways to eliminate them by		
		various methods of restoration are studied Formation		
		of knowledge and skills for the installation of		
		of knowledge and skins for the instantation of		
		technological equipment of machine-building		
		production; to ensure the effective use and		
		maintenance of technological machines; to ensure the		
		rhythmic and economical operation of the equipment		
		of the site of an industrial enterprise; study of the		
		main regulatory documents for the installation and		
		operation of technological machines and equipment;		
		methods of technical control in the conditions of		
		existing production.		
53	Prevention and	The information about the prevention, diagnosis of the	5	
	repair of industrial	condition and repair of technological equipment is		
	equipment	presented. The data on the rational operation of		
		equipment, repair technology, standard methods of		
		restoring parts, on the features of operation,		
		maintenance of the main elements and aggregates of		
		technological machines and apparatuses, features of		
		equipment storage are presented. The maximum use		
		of existing equipment which is of great importance		
		for the development of industry requires its proper		
		operation constant maintenance of working condition		
		and timely repair		
54	CAD of	The study of the methodological foundations of	5	
54	technological	computer aided design of technological processes	5	
	processes	technological aggingment and tools Practical		
	processes	development of a number of CAD subsystems of		
		technological processes that have become widespread		
		in industry and are characteristic representations of		
		in industry and are characteristic representatives of		
		functional subsystems. Familiarization with the		
		prospects and main directions of improving CAD		
		tecnnological processes.	_	
	Theory of automatic	Formation of knowledge on the basics of the theory of	5	
	control of	automatic control, basic principles of building modern		
	technological	process control systems, a means of synthesis and		
	systems	analysis of control systems, presentation of the		
55		modern material and technical base and capabilities of		
55		control tools. Development of a set of problems for		
		finding transition functions and time equations of		
		automated systems for analyzing the quality of the		
		control process. Application of automated systems		
		with certain characteristics.		
56	Computer modeling	This course studies the basic mathematical models	5	
	and additive	and methods of computer modeling in mechanical		
	technologies in	engineering. The study of the course and the		
	mechanical	acquisition of knowledge is carried out in the		
	engineering	activities of designing a computer model, developing		
		algorithms, their software implementation. solving		
		educational tasks for building computer models of		
		technological processes. «Additive Technologies» is		
		the technological methods of laver-by-laver		
		construction of models by fixing layers by methods:		

		sintering, fusion, gluing, polymerization-depending on the nuances of a particular technology. At all stages of the project, each technological operation is performed in a digital CAD/CAM/CAE system and is located in a single technological chain.		
57	CAD system	CAD system (computer-aided design computer design support) is a computer-aided design system designed to perform design work using computer technology, as well as allowing you to create design and technological documentation for individual products, buildings and structures. The system allows increasing the efficiency of engineers " work by automating work at the design and pre-production stages.	5	
58	Design of mechanical engineering production	Study of the design of the main production system of machine-building industries; study of the technological parameters of the workshop, methods of their determination; selection of buildings and structures; placement of main and auxiliary equipment in the workshops; implementation of a feasibility study, the selected planning project. Formation of skills for designing sections and workshops of machine-building production		
59	Car designs and Assembly technologies	Formation of knowledge and skills on the design and technology of car assembly; to ensure the effective use and maintenance of cars; to identify the causes of malfunctions, to prevent the occurrence of malfunctions and eliminate their consequences; to ensure the rhythmic and economical operation of the equipment of the site of an industrial enterprise for assembly; study of the main regulatory documents for the assembly of cars; methods of technical control in the conditions of existing production; The ability to design technological processes for assembling cars; control the parameters of the assembly process and assembly quality management; develop measures to improve the efficiency of using the equipment of the machine assembly line.	5	
60	Digitalization of machine-building production	f Familiarization with the theoretical foundations and 4 principles of designing digital machine-building industries, mastering techniques and tools for building digital productions based on information and production technologies.		
61	Engineering ecology	Formation of knowledge of the theoretical foundations of environmental engineering, study of methods and means of ensuring environmental and industrial safety at a machine-building enterprise, environmental problems of machine-building enterprises and principles of production organization from the point of view of environmental safety, development of engineering and technical solutions that ensure environmental safety in the technosphere.	4	

## Appendix to EP

### Practice base

N⁰	Name of companies	Contacts: phone number, e-mail
		Almaty region, Karasay district,
1	Machine-Building Planty	Zharmukhambet village. +7 (727) 352-70-80.
	Machine-Dunding Thant//	E-mail: infoQMOZ@psi-grup.kzz
2	LLP «Agricultural Engineering	Almaty city, Raimbek avenue, 312,
	Research and Production Center»	+7(727)247-95-86, E-mail: space@yandex.kz
3	ISC «CARDANVAL»	Shymkent city, 160050, Tole bi street, 127,+7(7252) 54-
-		02-73, +7(7252) 54-03-12 E-mail: kardanval@mail.ru
4	JSC «Almaty Heavy Machinery	Almaty city, Tole bi street, 198, +7(/727) 250-82-05,
	Plant»	+7 (727) 250-85-19, E-mail: reception@aztm.kz
5	LLP «AGROTECH plant»	Almaty city, Khaliullin street, $32$ , $+7(727)234-45-96$ ,
		+7 (727) 234-45-98, +7 (727) 234-48-60,
		E-mail: zavod@agrotex.kz
6	LLP «Hyundai Premium Oskemen»	EKR, Ust-Kamenogorsk city, K.Satpayev avenue, 62/3.
		+7 (7232) 49-23-25, E-mail: Hyundai-yk@hyundai-yk.kz
7	LLP «China Machine parts»	Almaty city, Nauryzbay Batyr street, 47/87.
	F	Тел: 8 (701) 676-66-77.
8	LLP «SarvarkaAvtoProm»	Kostanay city, Promyshlennaya street, 1.
		8 (7142) 39-10-01, E-mail: akhmetova.ds@sap.amh.kz
9	LLP «Talgar Experimental Foundry	Almaty region, Talgar city, Kunayev street, 258,
	and Mechanical Plant»	E-mail: analitiko@yandex.ru
10	LLP «REM-CRANE»	Almaty city, Tausamal md, Akbata str., 10.
		+7(727) 372-21-75, 297-05-07, E-mail: rem_ltd@mail.ru
11	LLP «Talgarskoe UPP OO KOS»	Almaty region, Talgar city, $+77273882757$ , $+77277428292$ ,
		E-mail: too.uppkos@mail.ru
12	LPP «Electroapparat»	Almaty city, Sokpakbayev street, 71.
	11	$+7(727)$ 301-67-73, E-mail: elektroapp_to@mail.ru
10	LLP «Мекада»	Almaty region, Karatal district, Bastobe village,
13		Komarov street, $\pm /(728)342-19-61, \pm /(728)342-04-58$
		+7(728)342-19-61, E-mail: Mekada2007@mail.ru.
14	LLP «Almapack Co LTD»	Almaty city, Algerim-1 microdistrict, Embankment street, 31.
	1	+ 7 (727) 230-15-00, E-mail: almapack-co-ltd.all.biz
15	LLP «RemStrojByt-1»	Aimaty city, Kaikaman-2 microdistrict, Kenbayev, 9.
		E-mail: rss-1@mail.ru
16	LLP «Petromashzavod»	<b>INKK</b> , PEUROPAVIOVSK CITY, AUYEZOVA Street, 264.
		+/ (/152) 54-01-54, E-Inall: post_Info@pinz.asia
17	JSC «Kentau Transformer Plant»	r urkestan region, Kentau chy, Koznabayev street, 2. $17(72526)$ 2.24 20. E moil. $14\pi$ @alacayer com
		+7 (72550) 5-24-59, E-Inall: Ktz@alageuni.com
18	LLP «Aktau Foundry»	$\pm 7$ (7292) 54-42-35, 54-40 95, a maily info@alg kg
	-	$\pm 1$ (1272) 34-42-53, 54-40-93, c-IIIaII. IIII0@aIZ.KZ
19	JSC «SRI «Gidropribor»	UTAISK City, 0-mail Streel, $109, \pm7$ (7112) 31-30-11, E-mail: offee@gidronrihor kz
		Almaty radion Taldylayraan aity Maday atr 1
20	LLP «Kainar-AKB»	Annaty region, range will gan city, where $s_1$ . 1, $\pm 7$ (7282) 40-05-55 E-mail: priampaya@kainar kz
		Almaty city Alatau district "Industrial zone Almaty
21	IIP "Hundai Trans Kazakhstan	md Algebes 7 str 138/5
21	LLI «Hyundai Halis Kazakiistali»	пи. лідаваз, 7 su., 130/3. Тел. 7007 F-mail: htk@hyundai.kz