#### Ministry of Agriculture of the Republic of Kazakhstan S.Seifullin Kazakh AgroTechnical University

Reviewed at the meeting of the Academic Council of the University Protocol No 5 " LAW" ft 2022

APPROVED BY
Deputy Chairman of the Board
for Academic Affairs – Rector
"Kazakh Agrotechnical
S Seifullin University"
A.M.Abdyrov
2022

#### **EDUCATIONAL PROGRAM**

6B07111 Technical service of motor vehicles (master of industrial training)

Code and classification of the field of education: 6B07 Engineering, manufacturing and construction industries Code and classification of training areas: 6B071 Engineering and Engineering affair

Group of educational programs B065 Motor vehicles

Duration of study: 4 years

Form of study: full-time

Language of instruction: Kazakh, Russian, multilingual

Astana 2022

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PhD, senior lecturer of the Professional Education Department Master psychological sciences, senior lecturer of the Professional Education Department

The educational program 6B07111 Technical service of motor vehicles (master of industrial training) was considered at the meeting of the Department of "Professional Education" "6 - 2022, protocol 8 - 2022, protocol 8 - 2022

It is recommended at a meeting of the of "Computer Systems and Professional Education" Faculty Council

"<u>18</u>" <u>ll</u> 2022, protocol № <u>6</u>

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# 1 Passport of the educational program

1.1 Purpose of the educational program

No	Fieldtitle	Note
1	The code of the educational program	6B07111
2	Code and classification of the field of education	6B07 Engineering, manufacturing and construction industries
3	Code and classification of the direction of training	6B071 Engineering
4	Name of the educational program	Technical service of motor vehicles (master of industrial training)
5	Type of EP	New EP;
6	Goal of EP	Preparation of highly qualified masters of industrial training, possessing professional competencies and personal qualities, capable of carrying out professional activities on the basis of technical, psychological and pedagogical disciplines and modern standards in this field of bachelor's training in the profile of Technical service of motor vehicles (master of industrial training).
7	Level NQF	6
8	LevelIQF	6
9	Learning outcomes	LO1 Analyze the features of social, political, cultural, psychological institutions in the context of their role in the modernization of Kazakh society, as well as systematize knowledge about the essence and forms of

manifestation of economic and legal phenomena and processes;

- LO 2 Possess the skills of pedagogical communication and methods of managing an individual and a group, monitoring the course of mental development of students at various levels of education, as well as master the basics of technical systems;
- LO 3 Using the basics of natural science knowledge and methodology to identify production problems and solve professional tasks;
- LO 4 Using languages to gain additional professional knowledge and form professionally significant personality traits;
- LO 5 Reading types of design documentation and execute drawings, diagrams in accordance with the requirements of the unified system of design documentationstandards, use computer programs for drawing up drawings;

Perform work on the basis of labor legislation and in accordance with the rules and regulations of labor protection, safety, industrial sanitation and fire protection;

LO 6 Perform calculations of elements in the structure for strength, rigidity, stability based on the laws of statistics, kinematics and dynamics;

Design parts, assemblies and mechanisms.

- LO 7 Using and carry out diagnostics of electrical, electrical machines and apparatuses, electronic equipment; Select types of devices for quality control and quality management of parts and assemblies of aggregates and machines;
- LO 8 To operate modern machines and equipment, motor vehicles to design technical service enterprises. To determine the features of the technology of the industry and a separate specialty in it; To carry out professional activities for the technical service of vehicles;
- LO 9 Being able to manage the educational process, develop educational and program documentation and use them to form the content of education,

	conduct educational work with students;  LO 10 To form the skills of research activity students  LO 11 Being able to conduct industrial training classes in accordance with the branch of training students, conduct industrial training classes using modern training technologies, form professional knowledge and skills among students, monitor training at various stages of vocational training.
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# The objectives of the educational program 6B07111 Technical service of motor vehicles (master of industrial training) are:

- formation of graduates' competencies necessary for the implementation of professional activities according to the direction of Technical service of motor vehicles (master of industrial training);
- formation of students' knowledge and skills in the application of technical disciplines and specialized knowledge for the organization of safe work during maintenance and repair of motor transport, for the development of design and technological documentation, for the repair of modernization and modification of vehicles, for the implementation of technical control of products and services and ensuring safety at the production site.
- formation of necessary competencies based on the study of psychological and pedagogical disciplines for decision-making in their professional activities, for the development of programs and the creation of mechanisms for improving and developing the educational process in college, ensuring the effectiveness of professional activity;
- formation of the ability to acquire new knowledge, psychological and pedagogical readiness to change the type and nature of their professional activities and providing graduates with the opportunity to continue their education;
- providing the variety of educational opportunities for students, the possibility of choosing an individual education program;

After successful completion of this educational program, the graduate is ready for maintenance and repair of motor transport at enterprises and organizations of the motor transport complex of various organizational and legal forms of ownership, in research, design and technological organizations, motor transport and auto repair enterprises, as well as to carry out teaching activities as a master of industrial training in professional educational institutions.

# 2 General characteristics of the educational program Significance

The steady increase in the number of vehicles in our country now inevitably entails the need to address issues of its maintenance and repair. In accordance with this, there is an increasing demand for training middle-level technical personnel (which includes graduates of technical and vocational education), who should be able to work on modern technological and diagnostic equipment, to use devices and tools to perform high-quality maintenance and repair of cars. These circumstances served as the basis for many educational institutions of the technical and vocational education system to include in the list of their specialties and training of students in the specialty 6B07111 Technical service of motor vehicles (master of industrial training)

The quality of training of the future specialist and master of industrial training is the most important indicator of the work of the institutions of the technical and vocational educationsystem and lies in the ability of the educational services provided to meet the needs and expectations of consumers. And in this an important role is played by the level of qualification of technical teaching staff.

The solution to the above problems is the training of qualified specialists in the field of vocational education with competencies in the field of training, as well as psychological, pedagogical and managerial competencies.

The educational program - 6B07111 Technical service of motor vehicles (master of industrial training) provides for the training of specialists for the transport sector of the economy of the Republic of Kazakhstan through the implementation of the principles of the Bologna Process and modern standards in this area of bachelor's degree, to provide high quality educational services in the field of professional and technical education.

#### Feature and competitive advantages:

A distinctive feature of the educational program is that modern requirements for the training of specialists with higher education were taken into account during the development, modern tendencies of training specialists in the system of technical and vocational education were taken into account. The program is compiled within the framework of the Bologna Process, taking into account the competence, modular and credit approaches.

The educational program is focused not only on the transfer of a system of theoretical knowledge in the field of both technical and social sciences, but, first of all, on the ability to apply this knowledge to solve real problems, i.e. on the formation of a basic level of professional competencies.

The uniqueness of the bachelor's degree program in the field of training 6B07111 Technical service of motor vehicles (master of industrial training) consists in multidisciplinary, combining technical, social and managerial sciences aimed at forming a graduate capable of carrying out not only maintenance and repair of motor transport, but also pedagogical activity as the master of industrial training.

#### 3. Competence model (portrait) graduate

#### 3.1 Areas of professional activity

-design-technical, technological sphere of professional activity in institutions of technical and additional professional education, in research, work out and design organizations and in production;

-pedagogical sphere of professional activity including training of specialists of working professions in the field of technical service of motor vehicles;

- service and technical, industrial sphere of professional activity, such as in car service centers for the sale, maintenance and repair of cars, at various maintenance stations of automotive equipment, in specialized enterprises providing car service services to individual consumers;

-research activities in the field of vocational education and in the workplace in the field of advanced training of employees in accordance with the specialization.

#### 3.2 Types of professional activity

Educational - to be able to conduct theoretical and industrial training classes in accordance with the branch of training of college students, conduct theoretical and industrial training classes using modern training technologies, form professional knowledge and skills of students, monitor training at various stages of vocational training.

Upbringing- to be able to manage the educational process of colleges, develop educational and program documentation and use them to form the content of education, conduct educational work with college students;

Researching - to form the skills of research activity among college students;

Designing - to use and carry out diagnostics of electrical machines and devices, electronic equipment; To carry out calculations of elements in the structure for strength, rigidity, stability based on the laws of statistics, kinematics and dynamics; to design parts, assemblies and mechanisms, expert services in the field of motor transport affairs and motor transport activities;

Engineering - to be able to operate modern machines and equipment, motor vehicles, to design technical service enterprises: to determine the features of the technology of the industry and a separate specialty in it; to carry out professional activities in working professions; maintenance and repair of motor vehicles, checking the technical condition of motor vehicles during state technical inspection.

#### 3.3 General education competencies

- to assess the surrounding reality on the basis of worldview positions formed by knowledge of the fundamentals of philosophy, which provide scientific understanding and study of the natural and social world by methods of scientific and philosophical cognition;
  - to argue his own assessment of everything that is happening in the social and industrial spheres;
- to demonstrate a civic position based on a deep understanding and scientific analysis of the main stages, patterns and peculiarities of the historical development of Kazakhstan;
- to assess situations in various areas of interpersonal, social and professional communication, taking into account basic knowledge of sociology, political science, cultural studies and psychology;
  - to use scientific methods and techniques of research of a specific science, as well as the entire socio-political cluster;
- toenter into communication in oral and written forms in Kazakh, Russian and foreign languages to solve the problems of interpersonal, intercultural and industrial (professional) communication;
  - -to operate with social, business, cultural, legal and ethical norms of the Kazakhstan society;
  - todemonstrate personal and professional competitiveness;
- touse various types of information and communication technologies in personal activities: Internet resources, cloud and mobile services for the search, storage, processing, protection and dissemination of information.

### 3.4 Basic competencies

- the ability to determine the algorithm for solving a transport problem, to take into account factors when building the structure of their interrelations and identifying priority areas;
- critical understanding and analysis of options for solving problems and predicting consequences, planning and implementation of transport tasks and projects;

- theability to prevent conflict situations when interacting with enterprises, mass media and mediate in conflict resolution;
- to analyze of the effectiveness of innovations of transport enterprises, application of management skills in innovative processes of transport equipment and technology;
- to possess of skills in handling modern technology, the ability to use information technology in the field of professional activity;
- to possess the skills of pedagogical communication and methods of managing an individual and a group, monitoring the progress ofmental development of students at various levels of education, as well as to master the basics of technical systems;

#### 3.5 Professional competencies

- the ability to develop design, technological, engineering and design estimates for the creation and repair of transport equipment;
- the ability to develop projects of transport equipment and technology taking into account technological, design, aesthetic, economic and other parameters;
- theability to work in a team, to be flexible and mobile in various conditions, knowledge of decision-making skills in conditions of uncertainty and risk;
- to be able to conduct theoretical and industrial training classes in accordance with the branch of training college students, conduct theoretical and industrial training classes using modern training technologies, form professional knowledge and skills among students, monitor training at various stages of vocational training.

#### 4 The base of passing professional practices Studying practice and industrial practice

Students will undergo practical training at the following enterprises: transport enterprises and divisions; regional transport management bodies and state transport inspection; freight forwarding enterprises and organizations; enterprises and organizations operating transport equipment; branded and dealer centers of machine-building and repair plants; marketing and freight forwarding services; transport management services.

#### Industrial (pedagogical) practice

There is comprehensive preparation of students for independent pedagogical activity, for the application of professional and pedagogical skills and skills of organizing all types of educational work in college.

Main tasks:

- deepening and consolidation of theoretical knowledge of students;
- formation and development of future masters of industrial training in the skills and abilities of the implementation of the pedagogical process;
- preparing students to conduct various forms of training sessions and types of lessons based on knowledge of psychological, pedagogical and technical disciplines

Pre-graduate practice

To form students' professional and pedagogical skills and skills of independent conduct of educational and research work. Obtaining factual material for writing a thesis, development of conducting and statistical processing of pedagogical experiment data.

Main tasks:

- determination of the research topic based on familiarity with the problems of the educational process in the institutions of the technical and vocational education system;
  - formation of students' skills to plan research work;
  - mastering the basics of research methodology and methods of scientific and pedagogical research by students.

#### The bases of practice:

- 1) Multidisciplinary College, Astana city
- 2) Construction and Technical College, Astana city
- 3) College "Service and Tourism" Astana city
- 4) Technical College, Astana city
- 5) Polytechnic College, Astana city
- 6) Agricultural College, Akmola region, Shortandinsky district
- 7) Higher College of Shchuchinsk, Akmola region

# 5 Structure of the educational program

	Name of disciplines forming competencies	Total co	mplexity
	rame of disciplines forming competencies	in academic hours	in academic hours
	CYCLE OF EDUCATIONAL DISCIPLINES	56	1680
		35	1050
1	History of Kazakhstan	5	150
2	Philosophy	5	150
3	Information and communication technology	5	150
4	Foreign language	10	300
5	Kazakh / Russian language	10	300
	Social-political module	13	390
6	Political science and sociology	4	120
7	Cultural studies and psychology	4	120
8	Basics of economics and law/ Basics of anti-corruption culture/ Introduction to leadership in education / Innovative entrepreneurship	5	150
	Physical education module	8	240
9	Physical education	8	240
	CYCLE OF BASIC DISCIPLINES	120	3600
	Basic module	23	690
10	Introduction to specialty	5	150
11	Profestional psychology	4	120
12	Business language and business communication	5	150
13	Professional pedagogy	5	150
14	Practical training	3	90
15	Internship	1	30

	Pure - science disciplines module	15	450
16	Physics * / Fundamentals of science	5	150
17	Mathematics	5	150
18	Engineering mathematics */ Discrete mathematics	5	150
	Professional language disciplines module	6	180
19	English for Academic purposes */Professional Kazakh (Russian) language	6	180
	Basic engineering module	25	750
20	Descriptive geometry and engineering graphics	5	150
21	Engineering mechanics	5	150
22	Computer graphics / Draft execution automation *	5	150
23	Fluid and gas mechanics, hydro and pneumatic actuator * / Hydraulics, hydrocars and hydraulic actuator	5	150
24	Labor protection and basics of life safety / Environmental Chemistry *	5	150
	General Technical module	15	450
25	Car theory * / Theory of tractor and vehicle	5	150
26	Internal Combustion Engines and Future Alternatives	5	150
27	Electric machines and drives * / Electrical engineering and electronics	5	150
	Design and Technology module	15	450
28	Computer-Aided Mechanism Design	5	150
29	Technology of construction materials */ Materials in engineering design	5	150
30	Design foundations and machine parts	5	150
	Profile-technical module	10	300
31	Internship	10	300
	Profile-pedagogical module	11	330
32	Pedagogical management */ Management of educational processes	5	150
33	Modern technologies in education * / Innovative educational technologies	5	150
34	Pregraduation practice	1	30
	CYCLE OF PROFILING DISCIPLINES	52	1560

	Design and Technology module	5	150
35	Fundamentals devices of vehicle and the theory of ICE (Internal combustion engine)	5	150
	Profile-technical module	15	450
36	Design and organization of technical service	5	150
37	Repair, maintenance and technical diagnostics of motor vehicles	5	150
38	Modern problems and directions of development of technologies for the use of vehicles	5	150
	Profile-pedagogical module	32	960
39	Organization of educational work	5	150
40	Methods of teaching technical disciplines	10	300
41	Organization of research work	5	150
42	Acmeology of professional development */Formation of professional competence	5	150
43	Internship	7	210
	Total credits/hours of theoretical training	228	6840
	ADDITIONAL TYPES OF TRAINING		
	professional practice	22*	
	Practical training	3*	
	Internship	18*	
	Pregraduation practice	1*	
	final examination	12	360
	Protection of a thesis / project or passing exams in two major disciplines	12	360
	Total credits / hours	240	7200

#### "Kazakh Agro-Technical University named after S.Seifullin" JSC

#### Schedule of the educational process for the 2023 - 2024 academic year

#### Faculty: Computer Systems and Professional Education Degree: Bachelor's degree

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PW - Presentation Week D - Delivery of FX
Es - Examination sessions Ep - Educational practice
Ed - enrollment in disciplines

Public holidays:

August 30, 31 - Constitution Day December 1 - Day of the First President December 16, 17 - Independence Day January 1, 2, 3, 4-New Year January 7-Christmas

· - Theoretical training Pg - Pre-graduate practice

Rp - Report protection

Ss - Summer semester
Rs - registration for the summer semester

March 8-International Women's Day March 21, 22, 28 Nauryz Melramy May 1, 2-The Holiday of Unity of the people of Kazakhstan May 7-Defender of the Fatherland Day

May 9-Victory Day July 6-Capital Day

H - Holidays Fc - Final certification

Pp - Production practice
Iw - Installation week
Cs - Contact session

Up - Undergraduate practice

Just weeks:

theoretical training - 30 weeks exam session - 6 weeks winter holidays - 3-4 weeks summer holidays-6-9 weeks

Mt - Military training

Tp- teaching practice

#### Министерство есльского хозяйства Республики Казахстан НАО "Казахский агротехнический университет им. С.Сейфуллина"

РАБО ЧИЙ УЧЕБНЫЙ ПЛАН
на 2023-2027 учебные тоды
дж Модульной образовательной программы "Technical service of the motor vehicles (master of industrial training)"
по специальности/ургипа образовательных програмы B065 - Vehicles
Степень: Bachelor
Форма обучения: Täll-time (hachelor 4 years) semester
Год поступления: 25-05-2023

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22		BS UC	PP 2202	Profestional psychology	5	4	4			5/150	15	1	30			30	75			$\perp$	5.0		$\Box$		$\vdash$
23 24		BS UC BS ES	DYaDO 2218 OED 1204	Business language and business communication Fundamentals of science	5	4	2	+	-	5/150 5/150	15 15	30.0	30		-	30 30	75 75	+		+-	5.0		$\vdash$		<del></del>
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26		BS UC	Mat 2220	Mathematics	5	3	3			5/150	15		30			30	75			5.0					
27		BS ES	IM 2205	Engineering mathematics	- 5	4	4			5/150	15		30			30	75				5.0		$\Box$		
28 29		BS ES BS UC	DM 2205 NGIG 2206	Discrete mathematics Descriptive geometry and engineering graphics	- 6	-	3	-	_	5/150 5/150	15 15	30.0	30		-	30 30	75 75	-	_	5.0		_	$\vdash$		$\vdash$
30	1	BS UC	IMSD 2221	Engineering mechanics (Statics, Dynamics)	5	4	4			5/150	15	15.0	15			30	75		1	3.0	5.0				
31		BS ES		Draft execution automation.	- 5	4	4			5/150		30.0	15			30	75				5.0				
32	Basic engineering	BS ES	KG 2210	Computer graphics		<u> </u>	4			5/150		30.0	15		-	30	75	-			0.0		$\vdash$		⊢
33 34		BS ES	MZhGGP 3212 PGP 3212	Fluid and gas mechanics, hydro and pneumatic actuator Pneumatic and hydraulic drives	- 5	6	6	+	_	5/150 5/150	15 15	_	30 30			30 30	75 75	-	-	+	-		5.0		$\vdash$
35		BS ES	OTOBZh 4211	Labor protection and basics of life safety	-	8	8			5/150	15		30		1	30	75			_					5.0
36		BS ES	OOS 4211	Environmental Chemistry	- 5	l *	8			5/150	15		30			30	75								5.0
37	Duefacaianal language dissistance	BS ES		English for A cademic purposes	5	3	3			5/150		_	45		-	30	75	_	_	5.0			$\vdash$		⊢
38 39	Professional language disciplines	BS ES	PKRYa 2224 POIYa 2224	Professional Kazakh (Russian) language Professionally-oriented Foreign Language	·	1 °	3		1	5/150 5/150		+	45 45			30 30	75 75		1	- 5.0	_		$\vdash$		$\vdash$
40		BS UC	APM 2208	Computer-Aided Mechanism Design	5	4	4		4	5/150	15		30			30	75			_	5.0				
41		BS UC	OKDM 3209	Design foundations and machine parts	5	5	5		5	5/150	15	15.0	15			30	75					5.0			
42 43	Design and Technology	BS ES	TKM 3213 MIP 3213	Technology of construction materials	5	6	6	1		5/150	15 15	-	30 30			30	75 75		-				5.0		⊢
44		AS UC	OUA TD 3306	Materials in engineering design Fundamentals devices of vehicle and the theory of ICE (Internal	5	5	5	1		5/150	15	30.0	30			30	75	1	_	-		5.0	$\vdash$		$\vdash$
45		BS UC	DVSPA 3217	Internal Combustion Engines and Future Alternatives	5	6	6			5/150	15		30			30	75						5.0		
46		BS ES	EMP 3214	⊟ectric machines and drives	- 5	6	6		$\vdash$	5/150	15	30.0	L			30	75	1	$\perp$	$\perp$	_		5.0		$\vdash$
47 48	General Technical	BS ES BS ES	EE 3214 TA 4223	Electrical engineering and electronics Tractors and cars			7			5/150 5/150	15 15	30.0			-	30 30	75 75	+		+-			$\vdash$		<del></del>
48		BS ES	TA 4223	Car theory	- 5	7	7			5/150	15		1			30	75	1	1	+			$\vdash$	5.0	
50		BS ES	PM 3216	Pedagogical management	- 5	6	6			5/150	15		30			30	75						5.0		
51		BS ES	UOP 3216	Management of educational processes	<u> </u>	Ť	6			5/150	15	1	30		1	30	75	1	1		_	_	L		$\vdash$
52	•	BS ES	APR 4225 FPK 4225	A cmeology of professional development Formation of professional competence	5	7	7	+	-	5/150 5/150	15 15	1	30 30		-	30 30	75 75	+	+	+-	-	-	$\vdash \vdash$	5.0	$\vdash$
53 54		BS ES	STO 4215	Modern technologies in education	-	7	7			5/150	15	30.0	30		t	30	75	1		+				- 5.0	$\vdash$
55	Profile-pedagogical module	BS ES	IOT 4215	Modern technologies in education	- 5		7			5/150	15	30.0				30	75							5.0	
56 57		BS UC		Pregraduation practice	2	8	7	1		2/60		-			60			1		+-			$\vdash$		2.0
57 58	1	AS UC	OVR 4302 MPTD 4304	Organization of educational work  Methods of teaching technical disciplines	5 10	7	7	+	7	5/150 10/300	15 30	+	30 60		1	30 60	75 150	+	+	+-	1		$\vdash$	5.0 10.0	$\vdash$
59	1	AS UC	ONIR 4303	Organization of research w ork	5	8	8		T .	5/150	15		30		<b>†</b>	30	75			_				10.0	5.0
60		AS UC	PP 4305	Internship	10	8				10/300					300					1					10.0
61		AS UC	SPNRTPTS 3301		5	5	5	_	_	5/150		20.5	15		1	30	75	1-	1	+	-	5.0	$\vdash \vdash$		$\vdash$
62 63	Profile-technical module	AS UC	POTS 3308	Repair, maintenance and technical diagnostics of motor vehicles  Design and organization of technical service	5	5	5	1	+ -	5/150	15 15	30.0	1		1	30 30	75 75	1	1	+-	1	5.0	$\vdash$		$\vdash$
64		AS UC		Internship	5	5	ľ			5/150		50.5			150							5.0			
65		AS UC	PP 3310	Internship	5	6			I	5/150					150					$\perp$			5.0		
						Add		rodules beyond Modules of choice		tion															
								entifically resea																	
		We	ekly average w	orkload at hours		1	1	T	I .			1						60	60	56	64	60	60	60	44

																	$\vdash$	t				
	Total micliuming PCS										1	270				1	+	T 200.0	Т	$\vdash$	$\overline{}$	T
<i>'</i>	Total including FCS	(MOPC)										240					$\leftarrow$	7200.0		$\vdash$		
6	Additional courses Module of final certification	M-FO\	l								Numbe	r of cred	ITS		Semeste	er	Nun	mber of h 240.0	ours	Num	iber of w	/eeks
	Total on curriculum	232		0		3	6960	525	330	1185	0	780	1170	2970	30	30	28	32	30	30	30	22
	Electives(BDPD/ES)	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	L 0	0	10	0
	University component(BDPD/UC)	0	0	- 0		0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	<u> </u>	0
	Core subjects(BDPD/CS)	0	0	0		0	0	0	0	0	0	0	0	0	0	0	10	0	10	0	10	10
5	Disciplines of personal development and the formation of leadership qualities(BDPD)	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	10	10	0	10	- 0
	Electives (BDFPC/ES)	0	0	0	$\rightarrow$	0	0	0	0	0	0	0	0	0	0	0	10	0	10	0	<u> </u>	0
	University component(BDFPC/UC)	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Core subjects(BDFPC/CS)	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4	Disciplines for the formation of professional competencies (BDFPC)	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Electives(VRS/ES)	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
	University component(VRS/UC)	60	7	0		1	1800	135	90	135	0	600	240	600	0	0	0	0	25	5	15	1
	Core subjects(V RS/CS)	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3	Profession requirements (VRS)	60	7	0		1	1800	135	90	135	0	600	240	600	0	0	0	0	25	5	15	1
	Electives(BS/ES)	60	12	0		0	1800	150	150	240	0	0	360	900	0	5	5	10	0	20	15	
	University component(BS/UC)	56	10	0		2	1680	150	60	240	0	180	300	750	5	3	16	20	5	5	0	2
	Core subjects(BS/CS)	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2	Base requirements (BS)	116	22	0		2	3480	300	210	480	0	180	660	1650	5	8	21	30	5	25	15	
	Electives (GER/ES)	5	1	0		0	150	15	0	30	0	0	30	75	0	5	0	0	0	0	0	
	University component(GER/UC)	0	0			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Core subjects(GEFVCS)	51	13	0		0	1530	75	30	540	0	0	240	645	25	17	7	2	0	0	0	
1 1	General education subjects(GER)	56	1 14	1 0	- 1	0	1680	90	30	570	1 0	1 0	270	720	25	22	1 /	1 2	1 0	0	1 0	

Модульный учебный план составлен в соответствии с типовым учебным планом специальности. (утв. Приказ МОН РК от 16.08.2013г. № 343), ГОСО (утв. Приказ МОН РК от 23.08.2012г. № 1080), модульной образовательной программой специальности. Модульный учебный план рассмотрен и утвержден на заседании методической комиссии факультета, протокол № от 20\_\_ г.

The relationship between the achievability of the formed learning outcomes according to the educational program and academic disciplines (The matrix of the influence of disciplines on the formation of learning outcomes.

Name of the	Brief course description (30-50 words)	Number			Gene	<u>rated</u>	learn	ing ou	ıtcom	es (co	des)		
discipline		of	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
		credits	1	2	3	4	5	6	7	8	9	10	11
	·	_											
	· · · · · · · · · · · · · · · · · · ·		ompor	ient									
-	1	5	+										
Kazakhstan													
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Philosophy		5											
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	history of Kazakhstan  Philosophy	Cycle of general educ University Component / history of Kazakhstan  Introduction to discipline; Kazakhstan on way to Independence stages of the formation to idea of a national state; Civil and political confrontation; The implementation to Soviet model of state construction; Contradictions and consequences to Soviet reforms in Kazakhstan; "Restructuring" in Kazakhstan; Kazakhstan economic development model; Social modernization – the basis to welfare of society; Ethno-demographic processes and the strengthening to inter-ethnic harmony; Social and political development prospects and spiritual modernization; The policy of forming a new historical consciousness of the people to the Great Steppe; Kazakhstan is a state recognized by the modern world; N.A. Nazarbayev - a person in history; Formation of a united future nation.	Cycle of general education discipunitersity Component / Optional Compone	Cycle of general education disciplines  University Component / Optional Component  Introduction to discipline; Kazakhstan on way to Independence stages of the formation to idea of a national state; Civil and political confrontation; The implementation to Soviet model of state construction; Contradictions and consequences to Soviet reforms in Kazakhstan; "Restructuring" in Kazakhstan; Kazakhstan economic development model; Social modernization – the basis to welfare of society; Ethno-demographic processes and the strengthening to inter-ethnic harmony; Social and political development prospects and spiritual modernization; The policy of forming a new historical consciousness of the people to the Great Steppe; Kazakhstan is a state recognized by the modern world; N.A. Nazarbayev - a person in history; Formation of a united future nation.  Philosophy  The emergence and development of philosophy. Basics of philosophical understanding of the world. Consciousness, soul and language. Being. Ontology and metaphysics. Human philosophy and value world. «Máńgilik El» and «Rýhanı jańgyrý» - a new	Cycle of general education disciplines  University Component / Optional Component  history of Kazakhstan  Introduction to discipline; Kazakhstan on way to Independence stages of the formation to idea of a national state; Civil and political confrontation; The implementation to Soviet model of state construction; Contradictions and consequences to Soviet reforms in Kazakhstan; "Restructuring" in Kazakhstan; Kazakhstan economic development model; Social modernization — the basis to welfare of society; Ethno-demographic processes and the strengthening to inter-ethnic harmony; Social and political development prospects and spiritual modernization; The policy of forming a new historical consciousness of the people to the Great Steppe; Kazakhstan is a state recognized by the modern world; N.A. 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3	Information and communication technologies	The discipline "ICT" includes the following topics: purpose, content and development trends of ICT; methods for collecting, storing and processing information; architecture of computer systems and networks; software and hardware for computer systems and networks for collecting, transmitting, processing and storing data; Internet resources, cloud and mobile services, Smart technologies	5	+					
4	Political science and sociology	Sociology in understanding the social world. Introduction to the theory of sociology. Sociological research. Social structure and stratification of society. Socialization and identity. Social change: the latest sociological debate. Political science as a science and academic discipline. The main stages of the formation and development of political science. Politics in the system of public life. Political power: the essence and mechanism of implementation. World politics and modern international relations.	4	+					
5	Cultural studies and psychology	Culture as a system. Structure and social functions of culture. The history of cultural thought. The main laws of the dynamics and development of culture. The peculiarity of the national culture. Psychology as a science and practical activity. Methods of psychology. Psychology of Personality. Characteristic activity. Emotionally - speech sphere. Individual personality feature. Interpersonal communication as a factor in the development of a harmonious personality of Kazakhstan. Technology effective interpersonal communication as the basis for the modernization of public consciousness.	4	+					
6	Kazakh (russian) language	Language and his basic functions. Speech: kinds and forms of speech. Functionally-semantic types of	10	+					

	T						 -		 
		speech. Functional styles of speech. General							
		description of functional styles of speech.Common							
		concept about scientific style of speech. Features of							
		scientific style at lexical, morphological, syntactic							
		level. Text as leading unit of verbal communication.							
		segmentation of text. Theme of text. Structure and							
		sense of text. Communicative tasks of text. A role of							
		suggestion is in text. function of suggestion.							
		Progression of text as increase of his volume and							
		information content. Compression as basic type of							
		processing of scientific text. A plan and his drafting							
		are in a scientific sphere. Types of plans. scientific							
		text. Composition-semantic structure of scientific							
		text. Summarizing of scientific text. Annotating of							
		scientific texts. Types of lemmatas. Reviewing of							
		scientific texts. Types of reports. Criticizing of							
		scientific text. Structure of scientific review. Review							
		about the advanced study.							
7	Foreign language	The course program is designed for the volume of	10	+					
		teaching - 300 hours, of which: 90 hours - classroom							
		work and 180 hours - independent work.							
		The course ends with a comprehensive exam. The							
		course is designed for 3 trimesters.							
		As a result of mastering the program, the student,							
		depending on the level of training, reaches the level							
		B1 or B2 at the time of completion of the course							
8	Physical	The formation of positive attitude, interest and need	8	+					
	education	for physical education and sports.							
		The improving the physical health of students on the							
		basis of increasing the arsenal of motor abilities,							
		professional-applied and methodical readiness.							
		Preparation and participation in mass sports and							
		recreational events and competitions in sports, with							

		broad-based participation of students in the active physical culture. The Comprehensive use of physical culture and sports as a general physical training. Improving the level of physical and functional status. Preventive use of physical training for health purposes. The students gain additional, necessary knowledge on the basics of psychological, pedagogical, medical and biological control according to the method and organization of independent exercise and "lifelong" sports.							
		Cycle of general educ							
	D : 0	University Component /	_	ompor	1ent		1		
9	Basics of economics and law	The discipline promotes knowledge of the subject of economic theory and methods of research, the basis of public production and forms of public economy, the mechanism of functioning of the market system, production, costs and income of the firm, national economy. Give an assessment of economic growth and instability of the market economy, inflation and unemployment as manifestations of economic instability. Demonstrate knowledge and skills in the financial and monetary credit system in the national economy and economic security. To master the basics of the theory of the state and law, the basics of constitutional, administrative, civil, labor, family,	5	+					
		criminal law.							
		Cycle of basic	-						
		University co			, ,	 			 
10	Introduction in the Teaching Profession	To introduce students to their professions, to motivate them to acquire the necessary knowledge, skills and abilities. The study of the discipline is associated with the need for students to form a	5		+				

					Ι					
		complete understanding of the chosen profession,								
		helps to orient themselves in choosing the direction								
		of professional specialization.								
11	Business	Communication as a socio-psychological problem.	5	+						
	language and	Types of business communication as the basis of								
	business	speech culture. Fundamentals of speech culture. The								
	communication	culture of business speech. Fundamentals of speech								
		technique. Speech technique. Forms of business								
		communication. Public speaking. Conflicts in								
		business communication. Ethics and etiquette of								
		business communication.								
12	Profestional	The purpose of the course is: to identify the	5	+						
12	psychology	interrelationships and interactions of professional	5	·						
	psychology	psychology and individual psychological								
		characteristics of a person due to technology,								
		technology, organization of production, the subject								
		of labor, the skill of the employee; to investigate								
		psychological and pedagogical issues of vocational								
		training and vocational education. As a result of the								
		study, students will know: the professional								
		formation of the worker's personality; psychological								
		aspects of vocational training and education;								
		psychological features of the organization of the								
		work of students; students will apply the methods of								
		professional psychology to study of the student's								
		personality; identify professionally important								
		personality qualities for a particular profession or								
		specialty.								
13	Professional	The purpose of the discipline: the formation of	5	+				+		
	pedagogy	professional competence through the assimilation of								
		theoretical foundations and practice-oriented aspects								
		of pedagogical science. As a result of mastering the								
		course, students will be able to: explain the								

		theoretical and methodological foundations of professional pedagogy; systematize the basic concepts of professional pedagogy; apply forms, methods and means of interaction with participants in the educational process; design the educational process; plan professional activities taking into account the laws and principles of training,								
		development, education; evaluate the social role of								
		the teaching profession in modern society.								
14	Mathematics	Formation of theoretical and practical foundations and training to determine the types and solution of differential equations. Basic concepts, terms and definitions of vector algebra and analytical geometry, probability theory and mathematical statistics. Methods of solving systems of linear equations, problems related to matrices and the study	5		+					
		and solution of engineering problems.								
15	Descriptive geometry and engineering graphics	Development of spatial imagination and instilling the skills of correct logical thinking, methods of constructing images of spatial forms on a plane, measuring these forms, allowing the transformation of images, rules for design documentation in accordance with the Unified System of Design Documentation (ESCD), execution and reading of drawings of individual parts and assembly units.	5			+				
16	Engineering mechanics (Statics, Dynamics)	The development of the academic discipline considers the general laws of the mechanical movement of bodies and their equilibrium. The main provisions related to the laws of equilibrium and motion of points of a mechanical system, taking into account the geometric forms of motion and under the influence of factors causing certain types of motion. Methods of transformation of systems of forces and	5			+	+			

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		conditions of equilibrium of material bodies, general									
		laws of dynamics of motion of mechanical systems									
		necessary for solving engineering problems									
17	Computer-Aided	The course "Computer-Aided Mechanism Design"	5				+		+		
	Mechanism	sets out the scientific foundations for the									
	Design	construction of mechanisms, machines and devices,									
		as well as methods for their theoretical and									
		experimental research. The process of course design									
		of flat-lever mechanisms of machines. Creation and									
		development of models of mechanisms in the CAD									
		editor. Methods of kinematic and dynamic studies of									
		mechanisms in the CAD system. Automation of									
		design in the analysis and synthesis of mechanisms									
18	Design	The device, principle of operation, technical	5				+				
	foundations and	characteristics, the scope of the basic mechanisms,									
	machine parts	standard parts and components of machines; bases of									
		calculations of parts and units of machines on the									
		criteria of performance; skills of analysis of the									
		device and the principle of operation of mechanisms									
		and units of machines.									
19	Internal	Formation of a system of competencies for solving	5					+			
	Combustion	professional tasks on the effective use of car engines									
	Engines and	and mastering the methodology and skills of									
	Future	independently solving problems in the design,									
	Alternatives	calculation and evaluation of technical and economic									
		indicators of internal combustion engines, the study									
		of alternative engines, traction dynamics and fuel									
		efficiency, dynamic characteristics of the car.									
		Cycle of basic disciplines		ompon	ent			 			
20	Physics	To form a system of fundamental knowledge in	5			+					
		physics among students, contributing to the effective									
		solution of practical problems of agricultural									
		production, as well as further personal development;									

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		the basics of scientific worldview and modern								
		physical thinking; to get acquainted with scientific								
		equipment and methods of physical research, to								
		acquire the skills of conducting a physical								
		experiment; to apply the knowledge gained for the								
		correct interpretation of basic physical phenomena.								
21	Fundamentals of	Fundamentals of natural sciences the basis of all	5		+					
	science	modern technics and technology. The study of								
		physics creates the foundations of theoretical								
		training and the fundamental component of								
		educational programs. The fundamental and basic								
		laws of physics allow us to understand the natural								
		phenomena taking place, to be aware of the ways								
		and methods of their description, scientific research								
		and rational processing of observational data								
22	English for	The course is designed for development of the	4			+				
	Academic	academic skills necessary for conducting academic								
	purposes	professional activities and research work: the ability								
		to write an academic text, the ability to listen and								
		take notes of a lecture in English, the ability to write								
		articles in English, with subsequent publication,								
		public speaking skills in an academic presentation								
		format.								
	Professionally-	To form the professional foreign language speech of				+				
	oriented Foreign	future specialists to increase the level of professional								
	Language	competence, proficiency in a professional foreign								
		language for the implementation of written and oral								
		information exchange, further development of								
		speech activity (reading, writing, listening and								
		speaking - monologue and dialogic speech). Rules of								
		speech behavior in accordance with situations of								
		professional communication, depending on the style								
		and nature of communication in the social,								

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		household and academic spheres.							
23	Engineering	General information of mathematical description and	5		+				
	mathematics	modeling of various real phenomena and processes.							
		combined disciplines combining elements of							
		physics, mathematics, computer methods of							
		calculation are focused on the application of							
		established methods for the design and analysis of							
		engineering solutions in the field of mechanical							
		engineering.							
	Discrete	Course Description: "Discrete Mathematics" is an	5		+				
	mathematics	integral part of the mathematical education of future							
		engineers. Discrete Mathematics Apparatus is the							
		main research tool for professionals involved in the							
		creation and operation of computers, programming							
		languages, information transmission and processing							
		tools, automated control systems and design.							
24	Draft execution	Study of the basic principles and methodologies of	5			+			
	automation	modern computer-aided design when creating							
		electronic tools, methods and techniques for solving							
		problems in the main sections of the discipline using							
		design automation tools, creation of mathematical							
		models of construction, automation of preparation							
		and release of design and technological							
		documentation: SolidWorks systems, Compass 3D,							
		Altium Designer, T-Flex CAD.							
	Computer	Formation of knowledge of design documentation in	5			+			
	graphics	accordance with standards, rules for constructing							
		drawings of detachable and one-piece connections of							
		parts and assembly units, developing the skills							
		necessary to complete and read technical drawings,							
		perform sketches of parts, draw up design and							
		technical documentation for production. Proficiency							
		in working with computer drawing programs at a high							

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		level.								
25	Occupational safety and the basics of health and safety	Formation of students knowledge, practical skills and abilities to create safe and healthy working conditions, to prevent the causes and conditions the emergence of a dangerous situations, to protect the population and production staff of national economy objects from the consequences of possible emergencies. The specific features of labor protection for women and youth, supervision and control of the implementation of health and safety legislation and liability for violations of the requirements of occupational safety.	5			+				
	Environmental Chemistry	Environmental protection or nature protection, nature protection is a set of measures designed to limit the negative impact of human activity on the environment. The diversity of the impact of scientific and technological progress on the surrounding biosphere. Protection and improvement of the environment for the prosperity of our and future generations	5			+				
26	Fluid and gas mechanics, hydro and pneumatic actuator	Methods of calculating the parameters of hydraulic machines, control and control elements; characteristics of hydraulic and pneumatic drives; calculate the characteristics of hydraulic machines, hydraulic drive; calculate the characteristics of the control and regulation of the hydraulic drive, read and make schemes of hydraulic and pneumatic drives; the main methods of calculation of hydraulic machines and controls and regulation of hydraulic drives	5				+	+		
	Pneumatic and hydraulic drives	Studying of technological equipment using hydraulic and pneumatic drives, classification of hydropneumatic machines and drives, features of	5				+	+		

hydraulic and pneumatic systems. The principle of operation and structural elements of hydraulic pneumatic actuators. Purpose, classification and characteristics of volumetric drives and calculation	
pneumatic actuators. Purpose, classification and	
characteristics of volumetric drives and calculation	
of mechanical energy losses in drives.	
27   Technology of   The ability to possess knowledge of the structure of   5       +	
construction the composition and properties of various materials	
materials (metals and nonmetals) to understand the	
technologies and methods of obtaining materials	
processing, using modern machines, machines and	
equipment to solve design, operational,	
experimental, research and design problems.	
28 Materials in The studying of the basics of design and engineering 5 +	
engineering activities in mechanical engineering, which allows	
design students to solve a wide range of practical problems	
related to the design of machine structures using the	
most modern scientific achievements, technologies	
and technical solutions in the field of engineering	
technical developments.	
29 Car theory Methods of determining the main traction, kinematic 5 +	
and fuel-economic parameters of cars, factors	
affecting the modes and durability, methods of	
traction testing of cars; methods and applications of	
calculation of units, assemblies and systems of	
transport and technological means	
Tractors and cars Formation of bachelor's skills in acquisition and 5 +	
operation of the company's tractor and vehicle fleet.	
Studying the basics of theory and calculation,	
engines, testing of tractors and vehicle necessary for	
the effective operation of machines in agro-industrial	
production and their operational modes of operation,	
technological properties.	
30 Electric machines Types of electromechanical energy converters; 5	

	and drives	design features of electric drives; operating modes, methods of selecting electric motors; drive characteristics, operating modes of electric drives of basic agricultural machinery and equipment; physical fundamentals of electric drives, selection and calculation of mechanical characteristics and transients in electric drives.							
	Electrical engineering and electronics	To study linear electric circuits of direct current, linear electrical circuits of single-phase sinusoidal current, three-phase circuits, concepts of nonlinear circuits and transients, magnetic circuits and transformers.	5				+		
31	Modern technologies in education	The essence and integral characteristics of education technologies. Technologies of personality-oriented learning. Technology of educational cooperation. Technology of developing learning. Problem-based learning. Technology of modular training. Information technology training. Distance education. Technologies of project training. Credit technology of training. Integrative learning technology. Modern assessment technologies.	5					+	
	Innovative educational technologies	To introduce the processes of the general development of innovative education and to develope the skills of building innovative activities. Content: historical and pedagogical prerequisites for preparation for innovative activity. Innovative education system. The quality of innovation activity and its indicators. Competencies: mastering the willingness to act in non-standard situations, to bear social and ethical responsibility for decision-making.	5					+	
32	Pedagogical management	The purpose of the discipline: the formation of professional competence in the management of an integral pedagogical process of an educational	5					+	

	Management of educational processes	institution. As a result of mastering the course, students will be able to: identify the signs of managerial functions; explain the specifics of a teacher's managerial activity; demonstrate skills in planning, organizing, stimulating and controlling the pedagogical process; systematize methods of managing the pedagogical process and educational institution; evaluate the role of pedagogical management in improving the quality of the educational system  The purpose of the course is to form the professional competence of students in the main issues of management of educational processes and systems. Students will be able to define the educational system as an object of management, identify processes in the education system, be able to apply a	5						+	
		competence-based approach to the design of the educational process, formulate goals in the field of education; be able to develop educational programs as tools for managing the quality of education; be able to evaluate the results of the educational process.								
		Cycle of major disciplines	University	compo	nent		l			
33	Fundamentals devices of vehicle and the theory of ICE (Internal combustion engine)	Common Car device. Purpose, classification of engines. Design features of mechanisms and engine systems. Design features transmissions, chassis controls. Engine systems; Analysis of the processes of intake, compression, expansion and release; analysis of combustion processes in engines with spark ignition and compression ignition; the main indicators characterizing the operation of the internal combustion engine; engine performance; kinematics, dynamics and engine balancing; analysis of ways to	5	•				+		

		improve the engine. The study of the theory and calculation of the engines of vehicles. Determination of operational and economic indicators of the internal combustion engine of transport equipment. The current state and development prospects of various internal combustion engines							
34	Design and organization of technical service	The studying of the rules for the design of technical service facilities of the agro-industrial complex, the justification of the production program of the service enterprise, the design of production zones and auxiliary units, the basics of the design of the construction part, the design features of service stations, refueling complexes, machinetechnological stations and repair shops, technical and economic evaluation of design solutions. fundamentals of the design of reconstruction, respecialization, expansion and technical re-equipment of technical service facilities.	5		+		+		
35	Modern problems and directions of development of technologies for the use of vehicles	Changes in the classification, indexing and general structure of vehicles. Development of internal combustion engines. Lubrication and cooling system. Electrics. Vehicle ignition system. The system of electric start of vehicles. Clutch. Transmission. Chassis of vehicles. Steering.	5				+		
36	Technical diagnostics and repair of vehicles	General characteristics of technological processes to ensure the efficiency of transport equipment in the production and repair. Interrelation of design, production, operation and repair of transport equipment. Development and registration of technological influences on units, systems of transport equipment at production and carrying out repairs. Characteristics and organizational and	5				+		

		technological features of work in the production and repair of transport equipment. Washing, disassembly and assembly, control and diagnostic and adjustment works. Locksmith and mechanical, body work, acceptance work. Technologies of production and repair of the engine and systems of transport equipment						
37	Organization of research work	The purpose of studying this discipline is to form the research culture of the future specialist. Students will know the methodology of scientific and pedagogical research; - the logic of scientific and pedagogical research; conceptual apparatus, knowledge and methods of scientific and pedagogical research; The result of studying the discipline should be known by of the future master of industrial training knowledge of: logic and structure of scientific research; methods of scientific research; methods of scientific research; methods of scientific seearch; methodological approaches and principles; be able to use methods of mathematical statistics.	5				+	
38	Organization of educational work	The issues studied are: key competencies in the implementation of educational activities at school; the educational work of the class teacher in educational institutions, its content and methodology; planning and conducting educational work with children studying in educational institutions. Formed competencies: formation of a scientific worldview and ideas about the theoretical foundations of the upbringing and development of children in educational institutions; mastering the methods of upbringing and development of children; knowledge of the laws of the formation of motor skills and abilities; the ability to carry out methodical guidance of education at school; the	5					

		ability to analyze a variety of systems and theories of education; mastering modern technologies of raising children at school.								
39	Methods of teaching technical disciplines	The purpose of the course is to study the theoretical foundations and practical skills necessary for the organization of training in technical disciplines and industrial training in the technical and vocational education system. As a result of the training, students are able to: determine the tasks, content and process of vocational and technical training, didactic principles of vocational and technical training, develop curricula and programs in technical disciplines, choose the optimal forms, methods and means of vocational and technical training, analyze the material for monitoring training at various stages of vocational training.	10							+
		Cycle of major disciplines	Optional c	ompon	ent					
40	Acmeology of professional development	The purpose of the discipline is to study the acmeological concept of professional development of personality andstrategies to achieve of the professionalism. Students will know the structure of professional activity, the essence, types, criteria and conditions for achieving professional "acme". the structure of professional activity. As a result of mastering the course, students will be able to determine the criteria for achieving: professional development, apply acmeological technologies and develop a professional acmeogram	5							+
	Formation of professional competence	The purpose of studying the course is to form readiness for future professional activity. As a result of studying the discipline, students will determine	5							+

the theoretical foundations and structure of professional competence, students will be able to
apply the capabilities of the innovative educational
environment as a factor in the development of
professional competence, technologies for the
development of professional competence, design the
program of psychological and pedagogical support
for the development of professional competence.