

Department of Education and Science of Ukraine
State higher educational establishment
«Ukrainian State University of Chemical Technology»

Rector of SHEI USUCT
_____ O.A. Pivovarov
«_____» _____ 2019 p.

EDUCATIONALLY-PROFESSIONAL PROGRAM

First (bachelor) level

(name of level of higher education)

Bachelor

(name of degree that is appropriated)

AREA OF KNOWLEDGE 13 the Mechanical engineering

(code and name of area of knowledge)

SPECIALITY 131 Applied mechanics

(code and name of speciality)

It is ratified on meeting of
Scientific advice SHEI USUCT
from «_____» _____ 2019 year.
Protocol № _____

Dnipro-City
2019

Sheet of concordance

EDUCATIONALLY-PROFESSIONAL PROGRAM

Level of higher education	First (bachelor) level
Area of knowledge	13 the Mechanical engineering
Speciality	131 Applied mechanics
« CONCERTEDLY »	« DEVELOPERS »
Provost, chairman of scientific- and methodical advice of SHEI USUCT _____ (signature) <u>Goleus V.I.</u> (last name and initials) „_____” _____ 2019 yr.	Leader of project group _____ (signature) <u>Semenetz O.A.</u> (last name and initials) „_____” _____ 2019 yr.
Chief SMC _____ (signature) <u>Smotraev R.V.</u> (last name and initials) „_____” _____ 2019 yr.	Members of project group _____ (signature) <u>Anisimov V.M.</u> (last name and initials) „_____” _____ 2019 yr.
Scientifically-methodical department _____ (signature) <u>Fomenko G.V.</u> (last name and initials) „_____” _____ 2019 yr.	_____ (signature) <u>Mitrochin O.A.</u> (last name and initials) „_____” _____ 2019 yr.
Dean of mechanical faculty _____ (signature) <u>Nachovny I.I.</u> (last name and initials) „_____” _____ 2019 yr.	
Manager of department _____ (signature) <u>Sytar V.I.</u> (last name and initials) „_____” _____ 2019 yr.	It is given the Educationally-professional program to the action by the order of chancellor №____ from «____» _____ 2019p.

I. EDUCATIONALLY-PROFESSIONAL PROGRAM of BACHELOR PROFILE from speciality "Applied mechanics"

Program (general information) profile	
Complete name of qualification of original a language	A bachelor is from the applied mechanics
Official name of the educational program	The Educationally-professional program of preparation of bachelor is from the applied mechanics
Type of diploma and volume of the educational program	Diploma of bachelor from the applied mechanics, single (double, general at presence of corresponding agreements, programs of studies); on the base of complete universal middle education with the term of studies 11 are 240 credits, on the base of complete universal middle education with the term of studies 12 are 180-240 credits.
Complete name of establishment of higher education that awards qualification	State higher educational establishment «Ukrainian State University of Chemical Technology»
Accreditor organization	Accreditation commission of Ukraine (DOW is the "Навчально-методичний center on questions quality of education"). НАЗЯВО.
Period of accreditation	Accredited in 2013 Certificate of series of НД-II, № 0423939, term of action - 01.07.2018 yr.
A cycle/is a level	HPK of Ukraine is a 6 level, FQ - EHEA is the first cycle, EQF - LLL is a 6 level
Pre-conditions	Complete universal AV education
Teaching language (и)	Ukrainian
A	Aim of the educational program
Aim of the educational program	To provide to the students of receipt of knowledge, abilities and understanding in industry of chemical technologies, that will give possibility to execute original scientific researches or independently to work on a production to them.
B	Description of the educational program
Subject domain (area of knowledge, speciality)	Area of knowledge 13 is the Mechanical engineering: Speciality 131 is Applied mechanics
Basic focus of the program and specialization	Universal higher education is in industry of the applied mechanics
Orientation of the program	Professional and applied.

Features and differences	The program is practically directed, that determines the type of переддипломної practice.
C	Ability to work and study
A capacity is for employment	<i>Specialists on the mechanical engineering on enterprises and in project-designer organizations of machine-building industry, and also in other establishments on positions of master, mechanic, technician, designer and other, that envisage exploitation, service and repair of equipment.</i>
Further studies	Studies at second educational level after the master's degree programs in industry of the mechanical engineering.
D	Teaching style and methodology of studies
Going is near teaching and studies	Combination of lectures, practical, laboratory and seminar employments, writing of course projects or works, self-training, preparation of qualifying work.
Evaluation methods	Writing and verbal examinations, tests, presentations, defence of bachelor qualifying work.
E	Programmatic to the competence
Integral competence (IHT)	<i>Bachelor (level 6) : Ability to decide tasks and problems in certain industry of professional activity or in the process of studies that envisages realization of researches ма/або realization of innovations and is characterized the vagueness of terms and requirements</i>
General to the competence (GC)	GC- 1. A capacity is for abstract thought, analysis and synthesis on the basis of general technical concepts, logical arguments, established facts and engineering methodologies. GC - 2. Ability of the flexible thinking, openness to application of technical knowledge from professional and contiguous sciences and компетенцій in the wide range of possible jobs and in everyday life. GC - 3. Capacity for independent work and effective functioning as a member or leader of some working group at implementation of productive tasks and complex projects, definiteness and persistence in relation to the put tasks and taken duties. GC - 4. A capacity is for studies and capture modern knowledge with the high level of noninteraction. GC - 5. Ability effectively to communicate on professional themes with the representatives of engineering concord and with society on the whole, to be able to understand work other, to document the work, give and get clear instructions. Correctly to use the special concept vehicle, able to communicate
Special (to the	SK - 1. Ability of analysis of materials, constructions and processes

<p>profession) to the competence (SK)</p>	<p>on the basis of fundamental laws and knowledge of the applied mechanics, mechanics of liquid and gas, and also on the basis of corresponding mathematical and experimental methods.</p> <p>SK - 2. Ability to do the estimations of parameters of capacity of materials, constructions and machines in operating terms and find corresponding decisions for providing of the set level of reliability of constructions and processes, including at presence of some vagueness. Ability to conduct the technological and техніко-економічну estimation of efficiency of the use of NT and technical equipments. Ability to conduct the optimal choice of technological equipment, acquisition of technical complexes, have base ideas about the modern methods of their exploitation of equipment and acquisition of technical complexes.</p> <p>SK - 3. Ability to understand and able to use the analytical and numeral methods of mathematics for the decision of tasks of the applied mechanics, in particular calculations on durability, endurance, firmness, longevity, inflexibility in the process of the static and dynamic loading with the aim of estimation of reliability of details and constructions of machines.</p> <p>SK - 4. Ability to execute experimental researches, get, to analyse and critically estimate the results of experiment.</p> <p>SK - 5. Ability to discover, to formulate and decide the wide circle of problems of the applied mechanics on the basis of understanding them fundamental reasons and use of the theoretical and experimental methods mastered on an on-line tutorial.</p> <p>SK - 6. Ability to apply corresponding quantitative mathematical, scientific and technical methods, and also computer software for the decision of engineering tasks from the applied mechanics. A capacity is for the practical use of the computer-assisted systems of planning (CAD), production (CAM) and engineering researches (CAE).</p> <p>SK - 7. Ability to describe and classify the wide circle of technical objects and processes, that is base on thorough knowledge and understanding of wide circle of mechanical theories and practices, and also base knowledge of the allied subjects.</p> <p>SK - 8. Ability by an independent study to obtain new knowledge and abilities, using the already purchased professional and загально-наукові knowledge and skills.</p>
F	Програмні результати навчання
<p>Results of studies are in a когнітивній (cognitive) sphere</p>	<p>RKS- 1. To apply substantive provisions and methods of humanitarian and socio-economic sciences at the decision of public and professional tasks.</p> <p>RKS - 2. To apply knowledge of basic economic laws for the analysis of efficiency of machine-building productions.</p>

	<p>RKS - 3. To use information technologies, including by modern facilities of computer technique in industry of the mechanical engineering.</p> <p>RKS - 4. To execute research and test of new technological processes of making of wares.</p> <p>RKS - 5. To own skills of communication, able clear to speak out orally and in writing, freely to communicate in a public and professional environment.</p> <p>RKS - 6. To own the base vocabulary of one of foreign languages, able to read general and professional texts and pass their essence.</p> <p>RKS - 7. To apply methods and facilities of cognition for a self-education for intellectual development and for the increase of the professional level.</p> <p>RKS - 8. To use normative legal documents in the professional activity.</p>
<p>Results of studies in the field of valued-motivational</p>	<p>RSVM – 1. To analyse social and personality-meaningful problems, put before itself aims and to elect the ways of their achievement.</p> <p>RSVM – 2. To realize a role and place of scitech in history of humanity, with kind regards to behave to cultural and religious traditions.</p> <p>RSVM - 3. To argue the own point of view on the basis of laws of logic and base philosophical principles.</p> <p>RSVM - 4. To demonstrate and apply base knowledge in industry of natural sciences, use basic laws in professional activity, to apply the methods of mathematical analysis and design, theoretical and experimental research.</p> <p>RSVM - 5. Ability to demonstrate and use knowledge of theoretical bases of technology of engineer in planning of effective technological processes of treatment of details of machines.</p>
<p>Results of studies are in a psychomotor sphere</p>	<p>RPS - 1. To analyse scientific and technical information, study home and foreign experience after the subjects of research.</p> <p>RPS - 2. To develop the modern technological processes of making of new technique taking into account necessary requirements.</p> <p>RPS - 3. To develop technical documentation in accordance with the requirements of ЄСКД.</p> <p>RPS - 4. To estimate productive and unproductive charges on providing of necessary quality of products.</p> <p>RPS - 5. To understand essence of problem that arises up during professional activity and to find her effective decision. RPS- 6. To formulate made decision, summarize the got results and present the executed work as a report.</p> <p>RPS - 7. To control quantitative descriptions of processes that take place in the certain technical systems on the basis of existent methodologies.</p> <p>RPS - 8. To conduct a physical and numeral experiment, develop</p>

	corresponding experimental stands.
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RPS - 9. To execute the rules of accident, productive sanitation, fire safety and norm of labour protection prevention in practice.

**II DETERMINATION OF TRAINING DISCIPLINES / MODULES,
which will ensure achievement of the planned results of training and forms of
certification of higher education applicants for the educational program in
accordance with the standard of higher education**

**Table 1. Distribution of the content of the educational-professional program in
terms of training cycles and form of final control**

№	Subjects	Loans	hr.	Semester	Tetramestr	The final one control
<i>1. MANDATORY EDUCATIONAL DISCIPLINES</i>						
<i>1.1 General training cycle</i>						
1.1.1	History of Ukraine	3,0	90	2	4	Exam
1.1.2	Ukrainian language (professional direction)	3,0	90	5	9,10	Exam
1.1.3	History of Ukrainian Culture	2,0	60	1	1	Dif. Credit
1.1.4	Philosophy	5,0	150	5	9, 10	Exam
1.1.5	Foreign language (in professional orientation)	8,0	240	1, 2	1, 2, 3, 4	Exam
1.1.6	Physical culture (extracurricular discipline)			1, 2, 3, 4	1, 2, 3, 4, 5, 6, 7, 8	Credit
1.1.7	Physics	12,0	360	2, 3	3, 4, 5, 6	Exam
1.1.8	Maths	18,0	540	1, 2, 3	1, 2, 3, 4, 5	Dif. Credit
1.1.9	Chemistry	4,0	120	2	3, 4	Dif. Credit
1.1.10	Computer Science	6,0	180	2	3, 4	Dif. Credit
1.1.11	Applied mechanics					
1.1.11.1	Theoretical mechanics	8,0	240	3, 4	5, 6, 7, 8	Exam
1.1.11.2	Strength of Materials	8,0	240	4, 5	7, 8, 9	Dif. Credit
1.1.11.3	The theory of mechanisms and machines	6,0	180	4	7, 8	Exam
1.1.12	Ecology	2,0	60	1	2	Credit
1.1.13	History of engineering activity	2,0	60	1	1	Credit
1.1.14	Theoretical foundations of heat engineering	3,0	90	3	5	Dif. Credit
1.1.15	Electrical engineering, electronics and microprocessor technology	6,0	180	3	5,6	Exam
	<i>TOGETHER</i>	96,0	2880			

	<i>1.2 Cycle of professional training</i>					
1.2.1	Fundamentals of design					
1.2.1.1	Descriptive geometry, engineering and computer graphics	7,0	210	1	1, 2	Exam
1.2.1.2	Interchangeability, standardization and technical measurements	5,0	150	5, 6	10, 11	Dif. Credit
1.2.1.3	Machine parts	8,0	240	4, 5	8, 9	Exam
1.2.2	Technology of structural materials and materials science	6,0	180	3, 4	6, 7, 8	Exam
1.2.3	Economics, organization and management of enterprises	4,0	120	7	13, 14	Dif. Credit
1.2.4	Basics of labor protection	3,0	90	8	15	Exam
1.2.5	Hydraulics, hydraulic and pneumatic drives	4,0	120	3	6	Exam
1.2.6	Life Safety	2,0	60	1	1	Credit
1.2.7	Pre-diploma practice	6,0	180	8	16	Dif. Credit
1.2.8	Preparation of qualifying bachelor's work and state attestation (SA)	9,0	270			SA
	<i>TOGETHER</i>	54,0	1620			
	<i>MANDATORY EDUCATIONAL DISCIPLINES TOGETHER</i>	150,0	4500			
	<i>2. SELECTIVE EDUCATIONAL DISCIPLINES</i>					
	<i>2.1 General training cycle</i>					
2.1.1	Economic theory	2,0	60	5	10	Credit
2.1.2	Humanitarian module (Ethics of business communication)	2,0	60	3	5, 6	Credit
2.1.3	science of law	2,0	60	5	10	Credit
2.1.4	Computational Mathematics, Programming and Calculations on the Computer	4,0	120	4	7, 8	Exam
2.1.5	Theory of technical systems	3,0	90	1	2	Credit
2.1.6	Durability and dynamics of cars	10,0	300	6	11, 12	Exam
2.1.7	Analysis and control of materials	3,0	90	8	15	Exam
	<i>TOGETHER</i>	26,0	780			
	<i>2.2 Cycle of professional training</i>					
2.2.1	Technological foundations of machine building	6,0	180	6, 7	12, 13	Exam
2.2.2	Operating materials	3,0	90	4	7	Credit
2.2.3	Theory of cutting	5,0	150	5	9	Dif. Credit
2.2.4	Cutting tool	6,0	180	6	11, 12	Exam
2.2.5	Technological methods of production of billets	5,0	150	5	10	Exam
2.2.6	Equipment and transportation of machining shops	6,0	180	6	11, 12	Exam

2.2.7	Operation, maintenance and repair of chemical equipment	3,0	90	8	15	Credit
2.2.8	Theoretical basis of the technology of parts production and assembly of machines	7,0	210	7, 8	14, 15	Exam
2.2.9	The technology of processing of typical parts and assembling of machines	3,0	90	7	14	Exam
2.2.10	Mechano-assemblies and workshops	2,0	60	7	14	Credit
2.2.11	Technological equipment	3,0	90	7	13	Dif. Credit
2.2.12	Welding processes and their equipment	2,0	60	7	14	Exam
2.2.13	Operation of the cutting tool	3,0	90	7	13	Credit
2.2.14	Basics of mathematical modeling	2,0	60	7	13	Credit
2.2.15	CAD chemical technology	8,0	240	7, 8	13, 14, 15	Exam
	<i>TOGETHER</i>	64,0	1920			
	<i>SELECTIVE EDUCATIONAL DISCIPLINES TOGETHER</i>	90,0	2700			
	<i>TOTAL VOLUME</i>	240,0	7200			

Table 2. Generalized distribution of the content of educational and professional program by groups of components (disciplines) and training cycles

№	Training cycle	Educational load of the applicant of higher education (credits /%)		
		Compulsory components of an educational and professional program	Elective components of the educational-professional program	Total for the whole period of study
1.	General training cycle (generates general competencies)	96 / 40	26 / 10,8	122 / 50,8
2.	Cycle of professional training (forms special (professional) competence)	54 / 22,5	64 / 26,7	118 / 49,2
Total for the whole period of study		150 / 62,5	90 / 37,5	240 / 100

Table 3. List of disciplines of the educational-professional program of preparation of applicants for education of the first (Bachelor's) level, ECTS credits in training periods for training cycles, and a list of formed competencies and learning outcomes

Training cycles	Criteria of competencies	Criteria for learning outcomes	List of disciplines	ECTS loans
1	2	3	4	5
1. MANDATORY EDUCATIONAL DISCIPLINES				
1.1 General training cycle	GC-2, GC-4, GC-5, GC-7, GC-8	RKS-1, RKS-5, RKS-6, RKS-7, RKS-8, RSVM-1, RSVM-2, RSVM-3, RSVM-4, RPS-5, RPS-6	1.1.1 History of Ukraine	3
	GC-2, GC-4, GC-5, GC-7, GC-8	RKS-1, RKS-5, RKS-6, RKS-7, RKS-8, RSVM-1, RSVM-2, RSVM-3, RSVM-4, RPS-5, RPS-6	1.1.2 Ukrainian language (professional direction)	3
	GC-2, GC-4, GC-5, GC-7, GC-8	RKS-1, RKS-5, RKS-6, RKS-7, RKS-8, RSVM-1, RSVM-2, RSVM-3, RSVM-4, RPS-5, RPS-6	1.1.3 History of Ukrainian Culture	3
	GC-1, GC-2, GC-4, GC-5, GC-7, GC-8	RKS-1, RKS-5, RKS-6, RKS-7, RKS-8, RSVM-1, RSVM-2, RSVM-3, RSVM-4, RPS-5, RPS-6	1.1.4 Philosophy	5
	GC-1, GC-2, GC-3, GC-4, GC-5, GC-7,	RKS-1, RKS-5, RKS-6, RKS-7, RSVM-1, RSVM-3, RPS-1, RPS-6	1.1.5 Foreign language (in professional orientation)	8

	GC-3, GC-4, GC-5, GC-8	RKS-5, RKS-7, RSVM-1, RSVM-3, RPS-1, RPS-9	1.1.6 Physical culture (extracurricular discipline)	
	GC-1, GC-2, GC-3, GC-4, GC-5, GC-6, GC-7, GC-8	RKS-1, RKS-3, RKS-5, RKS-6, RKS-7, RSVM-1, RSVM-2, RSVM-3, RSVM-4, RPS-1, RPS-5, RPS-6, RPS-7, RPS-8, RPS-9	1.1.7 Physics	12
	GC-1, GC-2, GC-3, GC-4, GC-5, GC-6, GC-8	RKS-1, RKS-3, RKS-5, RKS-6, RKS-7, RSVM-1, RSVM-2, RSVM-3, RSVM-4, RPS-1, RPS-5, RPS-6, RPS-7, RPS-8, RPS-9	1.1.8 Maths	18
	GC-1, GC-2, GC-3, GC-4, GC-5, GC-6, GC-7, GC-8	RKS-1, RKS-3, RKS-5, RKS-6, RKS-7, RSVM-1, RSVM-2, RSVM-3, RSVM-4, RPS-1, RPS-5, RPS-6, RPS-7, RPS-8, RPS-9	1.1.9 Chemistry	4
	GC-1, GC-2, GC-3, GC-4, GC-6, GC-8	RKS-1, RKS-3, RKS-5, RKS-6, RKS-7, RSVM-1, RSVM-2, RSVM-3, RSVM-4, RPS-1, RPS-5, RPS-6, RPS-7, RPS-8, RPS-9	1.1.10 Computer Science	6
			1.1.11 Applied mechanics	
	GC-1, GC-2, GC-3, GC-4, GC-6, GC-8	RKS-1, RKS-5, RKS-7, RSVM-1, RSVM-3, RSVM-4, RPS-5, RPS-6, RPS-7, RPS-8	1.1.11.1 Theoretical mechanics	8

GC-1, GC-2, GC-3, GC-4, GC-5, GC-6, GC-8	RKS-1, RKS-5, RKS-7, RSVM-1, RSVM-3, RSVM-4, RPS-5, RPS-6, RPS-7, RPS-8	1.1.11.2 Strength of Materials	8
GC-1, GC-2, GC-3, GC-4, GC-5, GC-6, GC-7, GC-8	RKS-1, RKS-5, RKS-7, RSVM-1, RSVM-3, RSVM-4, RPS-5, RPS-6, RPS-7, RPS-8	1.1.11.3 The theory of mechanisms and machines	6
GC-1, GC-2, GC-3, GC-4, GC-5, GC-6, GC-8	RKS-1, RKS-5, RKS-7, RKS-8, RSVM-1, RSVM-3, RSVM-4, RPS-5, RPS-6, RPS-7, RPS-8, RPS-9	1.1.12 Ecology	2
GC-1, GC-2, GC-3, GC-4, GC-5, GC-6, GC-7, GC-8	RKS-3, RKS-5, RKS-7, RSVM-2, RSVM-3, RSVM-4, RPS-1, RPS-5, RPS-6, RPS-7	1.1.13 History of engineering activity	2
GC-1, GC-2, GC-3, GC-4, GC-5, GC-6, GC-7, GC-8	RKS-3, RKS-5, RKS-7, RSVM-2, RSVM-3, RSVM-4, RPS-1, RPS-5, RPS-6, RPS-7	1.1.14 Theoretical foundations of heat engineering	3
GC-1, GC-2, GC-3, GC-4, GC-5, GC-6, GC-7, GC-8	RKS-3, RKS-5, RKS-7, RSVM-2, RSVM-3, RSVM-4, RPS-1, RPS-5, RPS-6, RPS-7	1.1.15 Electrical engineering, electronics and microprocessor technology	2
TOGETHER			96

1.2 Cycle of professional training			1.2.1 Fundamentals of design	
	SK-6, SK-7, SK-8	RKS-3, RSVM-1, RPS-3, RPS-5, RPS-6	1.2.1.1 Descriptive geometry, engineering and computer graphics	7
	SK-1, SK-2, SK-4, SK-5, SK-6, SK-7, SK-8	RKS-3, RKS-7, RKS-8, RSVM-3, RPS-3, RPS-5, RPS-6, RPS-7, RPS-8, RPS-9	1.2.1.2 Interchangeability, standardization and technical measurements	5
	SK-2, SK-3, SK-6, SK-7, SK-8	RKS-3, RKS-7, RSVM-3, RSVM-4, RPS-5, RPS-8, RPS-9	1.2.1.3 Machine parts	8
	SK-1, SK-2, SK-3, SK-4, SK-5, SK-7, SK-8	RKS-3, RKS-7, RSVM-3, RSVM-4, RPS-5, RPS-8, RPS-9	1.2.2 Technology of structural materials and materials science	6
	SK-3, SK-6, SK-8	RKS-1, RKS-2, RKS-3, RKS-5, RKS-6, RKS-7, RKS-8, RSVM-1, RSVM-2, RSVM-3, RPS-4, RPS-5, RPS-6,	1.2.3 Economics, organization and management of enterprises	4
	SK-3, SK-6, SK-7, SK-8	RKS-1, RKS-3, RKS-5, RKS-7, RKS-8, RSVM-3, RSVM-4, RPS-1, RPS-5, RPS-6, RPS-7, RPS-8, RPS-9	1.2.4 Basics of labor protection	3
	SK-1, SK-2, SK-3, SK-4, SK-5, SK-	RKS-3, RKS-7, RSVM-3, RSVM-4, RPS-5, RPS-8,	1.2.5 Hydraulics, hydraulic and pneumatic	4

	6, SK-8	RPS-9	drives	
	SK-3, SK-6, SK-7, SK-8	RKS-1, RKS-3, RKS-5, RKS-7, RKS-8, RSVM-3, RSVM-4, RPS-1, RPS-5, RPS-6, RPS-7, RPS-8, RPS-9	1.2.6 Life Safety	2
	SK-1, SK-2, SK-3, SK-4, SK-5, SK-6, SK-7, SK-8	RKS-1, RKS-2, RKS-3, RKS-4, RKS-5, RKS-6, RKS-7, RKS-8, RSVM-1, RSVM-2, RSVM-3, RSVM-4, RSVM-5, RPS-1, RPS-2, RPS-3, RPS-4, RPS-5, RPS-6, RPS-7, RPS-8, RPS-9	1.2.7 Pre-diploma practice	6
	SK-1, SK-2, SK-3, SK-4, SK-5, SK-6, SK-7, SK-8	RKS-1, RKS-2, RKS-3, RKS-4, RKS-5, RKS-6, RKS-7, RKS-8, RSVM-1, RSVM-2, RSVM-3, RSVM-4, RSVM-5, RPS-1, RPS-2, RPS-3, RPS-4, RPS-5, RPS-6, RPS-7, RPS-8, RPS-9	1.2.8 Preparation of qualifying bachelor's work and state attestation (SA)	9
TOGETHER				54
MANDATORY EDUCATIONAL DISCIPLINES TOGETHER				150

2. SELECTIVE EDUCATIONAL DISCIPLINES				
2.1. General training cycle	GC-1, GC-2, GC-3, GC-4, GC-5, GC-6, GC-7, GC-8	RKS-1, RKS-2, RKS-3, RKS-5, RKS-6, RKS-7, RKS-8, RSVM-1, RSVM-2, RSVM-3, RPS-4, RPS-5, RPS-6,	2.1.1 Economic theory	2
	GC-2, GC-3, GC-4, GC-5, GC-6, GC-7, GC-8	RKS-1, RKS-5, RKS-7, RKS-8, RSVM-1, RSVM-3, RSVM-4, RPS-5, RPS-6,	2.1.2 Humanitarian module (Ethics of business communication)	2
	GC-2, GC-3, GC-4, GC-5, GC-6, GC-7, GC-8	RKS-1, RKS-5, RKS-7, RKS-8, RSVM-1, RSVM-3, RSVM-4, RPS-5, RPS-6,	2.1.3 Science of law	2
	GC-2, GC-3, GC-4, GC-6, GC-7, GC-8	RKS-1, RKS-3, RKS-5, RKS-6, RKS-7, RSVM-1, RSVM-2, RSVM-3, RSVM-4, RPS-1, RPS-5, RPS-6, RPS-7, RPS-8, RPS-9	2.1.4 Computational Mathematics, Programming and Calculations on the Computer	4
	GC-1, GC-2, GC-3, GC-4, GC-5, GC-6, GC-7, GC-8	RKS-1, RKS-3, RKS-5, RKS-6, RKS-7, RSVM-1, RSVM-2, RSVM-3, RSVM-4, RPS-1, RPS-5, RPS-6, RPS-7, RPS-8, RPS-9	2.1.5 Theory of technical systems	3
	SK-1, SK-2, SK-3, SK-4, SK-5, SK-6, SK-7, SK-8	RKS-3, RKS-4, RKS-5, RKS-7, RSVM-3, RSVM-4, RPS-1, RPS-5, RPS-6, RPS-7	2.1.6 Durability and dynamics of cars	10

	GC-1, GC-2, GC-3, GC-4, GC-5, GC-6, GC-7	RKS-3, RKS-7, RSVM-3, RSVM-4, RPS-5, RPS-8, RPS-9	2.1.7 Analysis and control of materials	3
			TOGETHER	26
2.2. Professional training cycle	SK-2, SK-4, SK-5, SK-6, SK-7, SK-8	RKS-1, RKS-2, RKS-3, RKS-4, RKS-5, RKS-7, RKS-8, RSVM-1, RSVM-2, RSVM-3, RSVM-4, RSVM-5, RPS-1, RPS-2, RPS-3, RPS-4, RPS-5, RPS-6, RPS-7, RPS-8, RPS-9	2.2.1 Technological foundations of machine building	6
			2.2.2 Operating materials	3
	SK-1, SK-3, SK-4, SK-5, SK-6, SK-7, SK-8	RKS-3, RKS-7, RKS-8, RSVM-3, RSVM-4, RPS-1, RPS-3, RPS-5, RPS-6, RPS-7, RPS-8, RPS-9	2.2.3 Theory of cutting	5
	SK-1, SK-2, SK-3, SK-4, SK-5, SK-6, SK-7, SK-8	RKS-3, RKS-7, RKS-8, RSVM-3, RSVM-4, RPS-1, RPS-3, RPS-5, RPS-6, RPS-7, RPS-8, RPS-9	2.2.4 Cutting tool	6
	SK-5, SK-6, SK-7, SK-8	RKS-2, RKS-3, RKS-4, RKS-7, RSVM-3, RSVM-4, RPS-1, RPS-2, RPS-3, RPS-4, RPS-5, RPS-6, RPS-7, RPS-8	2.2.5 Technological methods of production of billets	5
	SK-5, SK-6, SK-7, SK-8	RKS-3, RKS-4, RKS-7, RSVM-3, RSVM-4, RPS-1,	2.2.6 Equipment and transportation of	6

		RPS-2, RPS-3, RPS-4, RPS-5, RPS-6, RPS-7, RPS-8	machining shops	
	SK-1, SK-2, SK-4, SK-6, SK-7, SK-8	RKS-1, RKS-2, RKS-3, RKS-4, RKS-5, RKS-7, RKS-8, RSVM-1, RSVM-2, RSVM-3, RSVM-4, RSVM-5, RPS-1, RPS-2, RPS-3, RPS-4, RPS-5, RPS-6, RPS-7, RPS-8, RPS-9	2.2.7 Operation, maintenance and repair of chemical equipment	3
	SK-5, SK-6, SK-7, SK-8	RKS-2, RKS-3, RKS-4, RKS-7, RSVM-3, RSVM-4, RPS-1, RPS-2, RPS-3, RPS-4, RPS-5, RPS-6, RPS-7, RPS-8	2.2.8 Theoretical basis of the technology of parts production and assembly of machines	7
	SK-5, SK-6, SK-7, SK-8	RKS-3, RKS-4, RKS-7, RSVM-3, RSVM-4, RPS-1, RPS-2, RPS-3, RPS-4, RPS-5, RPS-6, RPS-7, RPS-8	2.2.9 The technology of processing of typical parts and assembling of machines	3
	SK-5, SK-6, SK-7, SK-8	RKS-2, RKS-3, RKS-4, RKS-7, RSVM-3, RSVM-4, RPS-1, RPS-2, RPS-3, RPS-4, RPS-5, RPS-6, RPS-7, RPS-8	2.2.10 Mechano-assemblies and workshops	2
	SK-2, SK-3, SK-4, SK-5, SK-6, SK-7, SK-8	RKS-3, RKS-7, RKS-8, RSVM-3, RSVM-4, RPS-1, RPS-3, RPS-5, RPS-6, RPS-7, RPS-8, RPS-9	2.2.11 Technological equipment	3

SK-2, SK-3,SK-4, SK-5, SK-6, SK-7, SK-8	RKS-3, RKS-7, RKS-8, RSVM-3, RSVM-4, RPS-1, RPS-3, RPS-5, RPS-6, RPS- 7, RPS-8, RPS-9	2.2.12 Welding processes and their equipment	2
SK-2, SK-3,SK-4, SK-5, SK-6, SK-7, SK-8	RKS-3, RKS-7, RKS-8, RSVM-3, RSVM-4, RPS-1, RPS-3, RPS-5, RPS-6, RPS- 7, RPS-8, RPS-9	2.2.13 Operation of the cutting tool	3
SK-1, SK-2, SK- 3,SK-4, SK-5, SK- 6, SK-7, SK-8	RKS-3, RKS-7, RKS-8, RSVM-3, RSVM-4, RPS-1, RPS-3, RPS-5, RPS-6, RPS- 7, RPS-8, RPS-9	2.2.14 Basics of mathematical modeling	2
SK-1, SK-2, SK- 3,SK-4, SK-5, SK- 6, SK-7, SK-8	RKS-3, RKS-4, RKS-5, RKS-7, RSVM-3, RSVM-4, RPS-1, RPS-5, RPS-6, RPS- 7	2.2.15 CAD chemical technology	8
TOGETHER			64
SELECTIVE EDUCATIONAL DISCIPLINES TOGETHER			90
TOTAL VOLUME			240

**Table 4. Matrix of conformity of program competences to educational components
(obligatory educational disciplines)**

The code of the discipline for the curriculum	1.1.1	1.1.2	1.1.3	1.1.4	1.1.5	1.1.6	1.1.7	1.1.8	1.1.9	1.1.10	1.1.11.1	1.1.11.2	1.1.11.3	1.1.12	1.1.13	1.1.14	1.1.15	1.2.1.1	1.2.1.2	1.2.1.3	1.2.2	1.2.3	1.2.4	1.2.5	1.2.6	1.2.7	1.2.8		
IHT																													
GC-1				+	+		+	+	+	+	+	+	+	+	+	+	+												
GC-2	+	+	+	+	+		+	+	+	+	+	+	+	+	+	+	+												
GC-3					+	+	+	+	+	+	+	+	+	+	+	+	+												
GC-4	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+												
GC-5	+	+	+	+	+	+	+	+	+			+	+	+	+	+	+												
GC-6							+	+	+	+	+	+	+	+	+	+	+												
GC-7	+	+	+	+	+		+		+				+		+	+	+												
GC-8	+	+	+	+		+	+	+	+	+	+	+	+	+	+	+	+												
SK-1																			+		+				+		+	+	
SK-2																				+	+	+	+			+		+	+
SK-3																					+	+	+	+		+	+	+	+
SK-4																					+		+	+		+		+	+
SK-5																					+		+	+		+		+	+
SK-6																				+	+	+		+	+	+	+	+	+
SK-7																				+		+	+	+	+		+	+	+
SK-8																				+	+	+	+	+	+	+	+	+	+

**Table 5. Matrix of conformity of program competences to educational components
(selective teaching disciplines)**

The code of the discipline for the curriculum	2.1.1	2.1.2	2.1.3	2.1.4	2.1.5	2.1.6	2.1.7	2.2.1	2.2.2	2.2.3	2.2.4	2.2.5	2.2.6	2.2.7	2.2.8	2.2.9	2.2.10	2.2.11	2.2.12	2.2.13	2.2.14	2.2.15	
IHT																							
GC-1	+				+		+																
GC-2	+	+	+	+	+		+																
GC-3	+	+	+	+	+		+																
GC-4	+	+	+	+	+		+																
GC-5	+	+	+		+		+																
GC-6	+	+	+	+	+		+																
GC-7	+	+	+	+	+		+																
GC-8	+	+	+	+	+																		
SK-1						+				+				+								+	+
SK-2						+					+			+				+	+	+	+	+	+
SK-3						+				+	+							+	+	+	+	+	+
SK-4						+		+		+	+			+				+	+	+	+	+	+
SK-5						+		+		+	+	+	+		+	+	+	+	+	+	+	+	+
SK-6						+		+		+	+	+	+	+	+	+	+	+	+	+	+	+	+
SK-7						+		+		+	+	+	+	+	+	+	+	+	+	+	+	+	+
SK-8						+		+		+	+	+	+	+	+	+	+	+	+	+	+	+	+

**Table 6. Matrix providing programmatic learning outcomes for relevant components
Educational-professional program (compulsory educational disciplines)**

The code of the discipline for the curriculum	1.1.1	1.1.2	1.1.3	1.1.4	1.1.5	1.1.6	1.1.7	1.1.8	1.1.9	1.1.10	1.1.11.1	1.1.11.2	1.1.11.3	1.1.12	1.1.13	1.1.14	1.1.15	1.2.1.1	1.2.1.2	1.2.1.3	1.2.2	1.2.3	1.2.4	1.2.5	1.2.6	1.2.7	1.2.8
RKS-1	+	+	+	+	+		+	+	+	+	+	+	+	+								+	+		+	+	+
RKS-2																						+			+	+	+
RKS-3							+	+	+	+					+	+	+	+	+	+	+	+	+	+	+	+	+
RKS-4																									+	+	+
RKS-5	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+					+	+		+	+	+
RKS-6	+	+	+	+	+		+	+	+	+	+											+			+	+	+
RKS-7	+	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+		+	+	+	+	+	+	+	+	+
RKS-8	+	+	+	+										+								+	+		+	+	+
RSVM-1	+	+	+	+	+	+	+	+	+	+	+	+	+	+				+	+			+			+	+	+
RSVM-2	+	+	+	+			+	+	+	+					+	+	+					+			+	+	+
RSVM-3	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+	+	+
RSVM-4	+	+	+	+			+	+	+	+	+	+	+	+	+	+	+		+	+			+	+	+	+	+
RSVM-5																			+						+	+	+
RPS-1					+	+	+	+	+	+					+	+	+							+		+	+
RPS-2																									+	+	+
RPS-3																			+						+	+	+
RPS-4																						+			+	+	+
RPS-5	+	+	+	+			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
RPS-6	+	+	+	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+		+			+	+	+

RPS-2								+				+	+	+	+	+	+					
RPS-3								+		+	+	+	+	+	+	+	+	+	+	+	+	
RPS-4	+							+				+	+	+	+	+	+				+	
RPS-5	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+
RPS-6	+	+	+	+	+	+		+		+	+	+	+	+	+	+	+	+	+	+	+	+
RPS-7				+	+	+		+		+	+	+	+	+	+	+	+	+	+	+	+	+
RPS-8				+	+		+	+		+	+	+	+	+	+	+	+	+	+	+	+	
RPS-9				+	+		+	+		+	+			+				+	+	+	+	

III - FORMS OF ATTESTATION OF HIGHER EDUCATION BUILDERS

<p>Forms of certification of applicants for higher education</p>	<p>A mandatory form of state certification establishes the implementation and protection of qualifying (diploma) works (projects).</p> <p>The system of competencies and learning outcomes indicated in sections IV and V are issued to the state attestation.</p> <p>The main means of objective control of the degree of achievement of the ultimate goals of education and training of bachelors is the technology for the implementation and protection of qualifying (diploma) works (projects) defined in the following documents: Regulation on EC, Methodological guidelines for the implementation of qualification (diploma) projects (works)</p>
<p>Requirements for final qualification work (in the presence)</p>	<p>Requirements for the final qualification work are set out in the Methodological Guidelines for the implementation of qualification (diploma) projects (works).</p> <p>The qualification work is accompanied by a review by the supervisor and a reviewer's review, which is the task of checking the completeness of the tasks, the quality of work in general and its verification for plagiarism.</p>
<p>Requirements for the certification / single state qualification exam (exams) (in the presence)</p>	<p>The certification examination program is approved by the higher educational institution. The qualification exam should include the assessment of the compulsory learning outcomes defined by this standard and the educational program.</p>
<p>Requirements for public security (demonstrations) (in the presence)</p>	<p>Requirements for public security are formulated in the Regulation on EC and methodological guidelines for the implementation of qualification (diploma) projects (works).</p>

IV - Requirements for the system of internal quality assurance in higher education

Determined in accordance with European Standards and Recommendations for the Quality of Higher Education (ESG) and Article 16 of the Law of Ukraine "On Higher Education"

Components of the system of internal quality assurance in higher education	Definitions, references and relevant documents
Principles and procedures for ensuring the quality of education	<ul style="list-style-type: none"> - Law of Ukraine "On Higher Education" of 01.07.2014 № 1556-VII; - Provisional provision on the organization of the educational process at the Secondary School of Economics and Management of SHEI USUCT (Order of the Rector of the Secondary School of Economics and Technical University of Udmurt of SHEI USUCT dated November 30, 2015, No. 290); - Regulations on the diploma with honors from the SHEI USUCT (Order of the Rector of the SHEI USUCT dated 25/02/2016, No. 55); - Regulation on the procedure for the creation and organization of the work of the examination commission at the Secondary School of Economics and Business Administration of Ukraine (Order of the Rector dated 01.04.2015, No. 68); - Regulations on the development of approval and review of working programs of educational disciplines (Order of the Rector of the SHEI USUCT dated 01.12.15, No. 291)
Monitoring and periodic review of educational programs	Annual monitoring of industry and labor market requirements, revision of educational programs, work curricula, work programs of academic disciplines. About the approval of lad project teams for the development of educational programs (Order of the Rector of the SHEI USUCT dated March 10, 2016, No. 74)
Annual assessment of higher education applicants	Regulations on the organization of rector's control over the quality of education (Order of the Rector dated March 17, 2014, No. 78)
Annual evaluation of scientific-pedagogical and pedagogical	Regulations on the commission of rector's control pedagogical skills of scientific and pedagogical workers of the University (Order of the Rector of the Dvnz

workers of a higher educational establishment	SHEI USUCT dated April 04, 2016, No. 85), Order of application of the rating system for the assessment of the activity of scientific and pedagogical workers of the SHEI USUCT (Order of the Rector dated 04.06.2010, No. 209 with changes to the order of 09.06 .0101 p. № 147), The procedure for applying the rating system for the assessment of the activities of the departments and faculties of the Secondary School of Economics and Management of the SHEI USUCT (Order of the Rector dated 04/06/2010, No. 209). Regularly publishing the results of such assessments on the official website of the higher education institution, on information stands and in any other way.
Improvement of scientific and pedagogical workers	Raising the qualification of scientific and pedagogical workers is carried out in accordance with the provision approved by the order of the Ministry of Education and Science of Ukraine from 24.01.2013. № 48 and the Regulations on the upgrading of qualifications and internship of pedagogical and scientific-pedagogical workers of the SHEI USUCT (Order of the Rector of the SHEI USUCT dated May 28, 2016, No.105)
The availability of the necessary resources for the organization of the educational process	Educational, methodological, logistical and personnel support corresponds to licensing conditions (CM Decree dated December 30, 2015 № 1187) of educational activity. License Serial AE №636496. Certificates in the field of training and specialties.
Availability of information systems for effective management of the educational process	The temporary provision on the organization of the educational process at the SHEI USUCT (Order of the Rector of the SHEI USUCT dated 30.11.2015 № 290) is supported by the Information and Analytical System for monitoring the educational process, which runs with the subsystems: Applicant, Educational process.
Publicity of information about educational programs, degrees of higher education and qualifications	Information about educational programs, degrees of higher education and qualifications is public and fully disclosed on the official web-portal of the university http://udhtu.com.ua
Prevention and Detection of Academic Plagiarism	Verification of the completeness of the tasks, the quality of work in general and its verification for plagiarism is carried out by the teacher - the head of the course or diploma work (project) in the established procedure with the use of the appropriate software

