


<p>СӘТБАЕВ УНИВЕРСИТЕТИ</p> 	<p>THE MINISTRY OF EDUCATION AND SCIENCE OF THE REPUBLIC OF KAZAKHSTAN</p> <p>NON-PROFIT JOINT STOCK COMPANY KAZAKH NATIONAL RESEARCH TECHNICAL UNIVERSITY named after K.I. SATBAYEV</p>	
<p>QMS Document 3 level</p>	<p>Edition № 1 «<i>02</i>» <i>02</i> 2020</p>	<p>Reg. 029-04-01.1.01 - 2020</p>

REGULATIONS

for the development of degree programs at Satbayev University
(Kazakh National Research Technical University
named after K.I. Satbayev)

P 029-04-01.1.01 - 2020

Almaty 2020

PREFACE

1 DESIGNED by the Institute of Distance Education and Professional Development of NJSC "Kazakh National Research Technical University named after K.I.Satbayev"

2 AGREED

Responsible for translation

Head of the English Language Department

« 20 » 05 2022

 A. Turlybekova

3 DISCUSSED and approved by the Academic Council of NJSC "KazNRTU named after K.I.Satbayev" (minutes №. 17 of 06/25/2020)

4 APPROVED BY the Decision of the Board of NJSC "KazNRTU named after K.I.Satbayev" dated " 02 " 12 2020 №. 10

5 INTRODUCED for the first time

CONTENT

1	General regulations	4
2	Normative references	5
3	Basic terms and definitions	6
4	Algorithm for the formation of degree programs at Satbayev University	10
	Applications	12
	Amendment Record Sheet	24

1 General Regulations

1.1 The university, holding the status of a research university, sets as its main goal the development of innovative activities of the university, the commercialization of the results of scientific activities, the reorientation to the creative and innovative nature of the training of specialists, as well as the integration of scientific activities and the educational process at all levels of higher and postgraduate education.

The research university plays an important role in training professionals and high-level specialists, scientists and researchers needed by the economy, as well as generating new knowledge to support national innovation systems. High elitism, autonomy of management, high state financial support are the hallmarks of the research University.

Of particular relevance are the problems of managing scientific and innovative processes that ensure the processes of creating and disseminating knowledge, new technologies, innovations, which becomes a key factor in the implementation of these Rules, taking into account the innovative development of the education system, which is a determining condition for the formation of an innovative economy and increasing competitiveness.

1.2 The main objective of these Regulations is to create high-quality conditions for the development of the country's intellectual capital through the development of innovative activities. Satbayev University independently develops and implements the standards of educational programs for higher and postgraduate education. The University has the right to establish additional requirements for the profile orientation when enrolling in higher and postgraduate education programs. The development of these rules is aimed at creating educational programs for different learning paths, which contributes to the intellectual growth of the nation, capable of creating their own technologies, which will ensure the country's liberation from raw material export dependence, high growth dynamics in processing, intellectually oriented and science-intensive industries.

The "Concept of academic mobility of students of higher educational institutions of the Republic of Kazakhstan" sets urgent tasks in the field of vocational education, in particular: improving the relationship with the labor market; improving the competence of graduates; updating the content, methodologies and the corresponding learning environment.

These Rules are aimed at the optimal implementation of the principles of the Bologna process at Satbayev University (NJSC KazNRTU named after K.I. Satbayev) in all areas and levels of training. The transition to the implementation of educational programs based on competence that are significant for Kazakhstan, as it is able to ensure the production of a highly qualified work force necessary to ensure the competitiveness of the economy. Satbayev University is a complex that includes not only educational, but also research units, as well as structures that ensure the

innovative activities of the university and close cooperation between the latter and industry.

Educational programs based on competence contribute to the solution of these problems. It is important to emphasize that the development and implementation of educational programs based on competence implies constant feedback from the requirements of employers to the skills and knowledge of employees, which ensures the quality of training of future specialists, which has a significant impact on the economic development of the country, the processes of implementation and development of entrepreneurial infrastructure, small business development.

The proposed Regulations are aimed at creating educational programs based on competence in line with the concept of lifelong learning, since they aim to form highly qualified specialists who are able to adapt to a changing situation in the world of work, on the one hand, and continue professional growth and education, on the other.

This approach to learning allows to create a sense of success for each student, which is created by the organization of the educational process, within which the student can and must manage his own learning, which teaches him to take responsibility for his own learning, and in the future - for his own professional growth and career .

Thus, the students will be satisfied with education, he can improve it during his life, responding to changes in the labor market.

2 Normative references

1 Law of the Republic of Kazakhstan “About Education” No. 319- III dated July 27, 2007;

2 State obligatory standard of postgraduate education, approved by the Decree of the Government of the Republic of Kazakhstan dated October 31, 2018 No. 604;

3 Rules for organizing the educational process on credit technology of education, approved by the Order of the Minister of Education and Science of the Republic of Kazakhstan dated April 20, 2011 No. 152;

4 National qualifications framework, approved by the Protocol of the Republican tripartite commission on social partnership and regulation of social and labor relations of March 16, 2016;

5 Model curricula for the cycle of general education disciplines for organizations of higher and (or) postgraduate education, approved by Order of the Minister of Education and Science of the Republic of Kazakhstan dated October 31, 2018 No. 603;

6 [Satbayev University’s graduate frame model](#);

7 Guidelines for the use of the European Credit Transfer and Accumulation System (ECTS), developed as part of the Bologna Process and officially published by the European Commission in 2009.

3 Basic terms and definitions

Building an educational program is a means of achieving the goal of vocational training by determining the content and structure of the educational program based on the concept of organizing the educational process, in which the totality of the student's professional competence acts as the learning goal;

In this document, the following basic terms and definitions are used in accordance with the Law of the Republic of Kazakhstan "About Education", SCES RK 5.05.001-2005 "Coding System for Academic Disciplines of Higher and Postgraduate Education", international documents in the field of education, the European system of transfer and accumulation of credits (European Credit Transfer System):

education - a continuous process of education and training, carried out for the purposes of moral, intellectual, cultural, physical development and the formation of professional competence;

undergraduate - higher education, the educational programs of which are aimed at training personnel with the award of a bachelor's degree in the relevant specialty; bachelor - a degree awarded to persons who have mastered educational programs of higher education;

graduate - a professional postgraduate education program aimed at training scientific, scientific-pedagogical and managerial personnel with the award of the academic degree "master" in the relevant specialty:

- in scientific and pedagogical training (according to SCES) - at least 59 credits, of which at least 42 credits of theoretical training, at least 6 credits of practice, at least 7 credits of research work; - with profile training

- at least 28 credits (with a study period of 1 year) and at least 48 credits (with a study period of 1.5 years), of which, respectively, at least 18 and 36 credits of theoretical education, at least 2 and 3 credits of practice, at least 4 credits for experimental research work.

PhD - a professional educational program of postgraduate education aimed at training scientific and pedagogical personnel with a standard period of study of at least 3 years, awarding a scientific degree with the obligatory development of at least 75 credits, of which at least 36 credits of theoretical training, as well as at least 6 credits practice and at least 28 credits of research (experimental research) doctoral work (DSRW / DERW).

educational program (EP) - a single set of basic characteristics of education, including the goals, results and content of education, the organization of the educational process, the ways and methods of their implementation, the criteria for assessing learning outcomes;

student-centered learning - an approach to learning characterized by innovative teaching methods to promote learning through teacher-student communication;

competence - the ability of students to apply the knowledge, skills and abilities acquired in the process of learning in professional activities; professional

competence - knowledge, skills and abilities necessary for the effective implementation of professional activities;

descriptors (descriptors) - a description of the level and scope of knowledge, skills and competence acquired by students upon completion of the educational program of the corresponding level (stage) of higher and postgraduate education; descriptors are based on learning outcomes, competence formed, as well as the total number of credits (credit units);

learning outcomes - the amount of knowledge, skills, skills acquired and demonstrated by students in the development of the educational program, and the values and attitudes formed, confirmed by the assessment;

credit technology of education - training based on the choice and independent planning by the student of the sequence of studying disciplines with the accumulation of academic credits; academic credit - a unified unit for measuring the volume of scientific and (or) educational work (load) of a student and (or) teacher;

Standard Curriculum (SC) - an educational document developed on the basis of the classifier of specialties of higher and postgraduate education of the Republic of Kazakhstan and SCES, regulating the structure and volume of the educational program for the cycles of disciplines, indicating the list and the minimum amount of credits of disciplines of the mandatory component and all types of practices, final attestation, approved by the authorized body in the field of education; mandatory component (MC) - a list of academic disciplines and the corresponding minimum volumes of credits established by the standard curriculum and studied by students on a mandatory basis under the curriculum;

elective disciplines - academic disciplines included in the elective component within the established credits and introduced by educational organizations, reflecting the individual training of the student, taking into account the specifics of socioeconomic development and the needs of a particular region, the established scientific schools of a higher educational institution; curriculum - a document regulating the list, sequence, volume (labor intensity) of subjects, academic disciplines and (or) modules, professional practice, other types of educational activities of students of the appropriate level of education and form of control;

module - a system of courses in which each course corresponds to an equal number of credits or a multiple of it;

prerequisites - disciplines containing the knowledge, skills and abilities necessary for mastering the discipline being studied;

post requisites - disciplines for the study of which knowledge, skills and abilities are required, acquired upon completion of the study of this discipline;

working curriculum (WC) - an educational document developed by an educational organization independently on the basis of a model curriculum of a specialty and individual curricula of students;

midterm attestation of students - a procedure carried out in order to assess the quality of mastering by students of the content of a part or the entire volume of one academic subject, one academic discipline and (or) module, as well as professional modules within one qualification after completing their study;

final attestation of students - a procedure carried out in order to determine the degree of mastering the volume of academic subjects, academic disciplines and (or) modules provided for by the state compulsory standard of the corresponding level of education;

assessment methods - a full range of written, oral and practical tests / examinations, projects, presentations, presentations and portfolios that are used to assess student progress and confirm the achievement of learning outcomes for the educational component (unit / module);

assessment criteria - a description of what the student should be able to do and at what level in order to demonstrate the achievement of the learning outcome;

academic mobility - the movement of students or research teachers to study or conduct research for a certain academic period (semester or academic year) to another organization of higher and (or) postgraduate education (domestic or abroad) with the obligatory transfer of mastered curricula, disciplines in the form of academic credits in their organization of higher and (or) postgraduate education or to continue their studies in another organization of higher and (or) postgraduate education; coding system - a set of methods and rules for coding classification groups and classification objects of a given set; The European Credit Transfer and Accumulation System (ECTS) is a student-centered credit accumulation and transfer system based on the principle of transparency in learning, teaching and assessment processes.

In addition, the following abbreviations apply:

GED - general education disciplines;

BD - basic disciplines;

MD - major disciplines;

MC - mandatory component;

VC - vocative component;

EAEA - external assessment of educational achievements;

SIS - independent work of students;

TSIS - teacher assisted independent work of students.

Building an educational program is a means of achieving the goal of vocational training by determining the content and structure of the educational program based on the concept of organizing the educational process, in which the totality of the student's professional competence acts as the learning goal; The module included in the educational program is an autonomous, completed in terms of learning outcomes, structural element of the educational program, which has clearly formulated knowledge, skills, skills and competence acquired by students and adequate criteria. The modules of the educational program are logically interconnected components of the program of study in specific areas or disciplines.

Modular educational program - a training program that includes a set of training modules aimed at mastering by students the key competence necessary to obtain a certain academic degree and / or qualification;

A training module is a structural element of an educational program aimed at mastering specific learning outcomes by students, from which the competence they acquire are formed in whole or in part;

The use of modules allows:

A. In the field of educational content

- consistently form the content based on the qualification goals, optimize it (limit it to the most important in terms of the stated goals), move from the academic discipline to the module, which leads to a thorough restructuring of the content;
- specify the place and role of individual training sessions;
- to ensure a balance between the desired dimensions (volumes) of the components of the educational program and the mobility of students;
 - meet the demands of interdisciplinary, strengthen the interdisciplinary and/or cross disciplinary of the content of the educational program;
 - to integrate classes beyond the scope of a separate specific academic discipline;
- apply modular technologies in the implementation of the concept of "education throughout life" (LLL);
 - to develop systemic thinking in students (as opposed to its disciplinary construction);
 - combine competence related to different areas.

B. In the field of assessment

- to carry out early diagnosis of gaps and continuous assessment, which leads to improved management of the process of mastering knowledge and competence (module-by-module control);
- focus examination requirements on the module, and not on a specific academic discipline;
- provide an assessment of the received (achieved) learning outcomes.

C. In the field of individualization of educational programs and educational routes

- to ensure greater openness and flexibility of educational paths;
- create "transitions" between hitherto isolated educational routes, between different training courses and types (kinds) of universities;
- to form a new educational resource within the framework of an individualized educational program;
- replace rigid educational programs with more dynamic training modules;
- to increase the motivation of students to meet the regulated deadlines for the implementation of educational programs;
 - ensure transparency in the organization of individual training;
 - create additional opportunities for individual profiling, when the modular structure acts as a "constructor".

D. In the field of the social role of the university

- to increase the possibility of rapid adaptation, rapid mutual adjustment of educational and qualification goals, which leads to the strengthening of the social role of higher education;
 - to create additional conditions for a more accurate idea of the educational career and future employment in terms of modules and periods of study, which instills in students the culture of self-development that is so in demand in our dynamic time.

E. In the field of organization of the educational process and educational technologies

- to increase the compactness of the structure of education;
- to organize the educational process more rationally, to practice its simple and visible structuring;
- to realize the benefits of continuous fixation at the documentary level of the results obtained, which are planned by modules;
- achieve transparency of acquired qualifications at any time;
- more purposefully implement the student-centered nature of education with the appropriate organizational, methodological and technological reconfiguration of the educational process.

F. In the field of building up the resource potential of universities

- to strengthen the cooperation of higher educational institutions, including by focusing their strengths;
- More efficient use of funds and resources.

The main terms and definitions are given in the Rules for organizing the educational process on credit technology of education, approved by order of the Minister of Education and Science of the Republic of Kazakhstan dated April 20, 2011 No. 152.

4 Algorithm for the formation of degree programs at Satbayev University

1 The study of the State Compulsory Standard of Higher Education to identify the basic requirements for the content of the disciplines of the module and the formed competence, taking into account the Dublin descriptors (Appendix 1).

2 Identify interdisciplinary correspondences for the formation of the module and competence. Each module assumes uniqueness in the formation of the competence of future specialists. The competence being formed cannot be duplicated in other modules.

3 To study the labor market and the requirements of employers for future specialists.

4 Teachers of the department make their proposals to the head of the department on the formation of modules in accordance with the goals and objectives of the disciplines, indicating the learning outcomes of the module, volume and duration.

5 The head of the graduating department forms the initial version of the educational program on the basis of SCES EP and QED and the proposals of teachers (Appendix 2).

6 At the methodological council of the department, the correctness of the compilation of modules, its effectiveness in the preparation of future specialists, compliance with the requirements for the formation of educational programs established by the CTE Regulations are analyzed.

7 Teachers draw up the final versions of the Description of the modules.

8 Based on the results of the analysis, adjustments are made to the initial version of the modules of the educational program.

9 General mandatory modules include the disciplines of the compulsory component of the GED TC cycle, are developed by the relevant special departments and are mandatory for all educational programs.

10 Compulsory EP modules include mandatory disciplines of database and MD cycles, and may also include elective disciplines, taking into account the specifics of the socioeconomic development of the region and the needs of the labor market, established scientific schools.

11 Elective modules for a particular EP consist of one or more options for educational programs (the total amount of credits for each option should be the same, in terms of modules they can be different) depending on the proposed specialization and taking into account the individual interests of students.

12. When compiling modular educational programs, one should comply with the requirements specified in the Rules for organizing the educational process on credit technology of education, approved by order of the Minister of Education and Science of the Republic of Kazakhstan dated April 20, 2011 No. 152 and the State Compulsory Standard of Higher Education.

13. Necessary conditions for the implementation of control:

- already at the stage of formulating the results, adequate control methods and evaluating tools should be planned;

- it is assumed that a clear description of the learning outcomes should be provided;

- results orientation entails the development of new methods of teaching, learning (learning) and assessment;

- checking the level of competence formation should be carried out with the help of modeling (simulating) exercises, tests for readiness and suitability, questionnaires, interviews, group discussions, presentations;

- students positively perceive modern forms of control and their motivating effect;

- teachers should be trained in the application of new methods of monitoring and evaluation.

14. The developed educational program is submitted for discussion by the EMC of the Institute, the Committee for the Development of Educational Programs. After development, the educational program is sent for examination and recommendation to the Academic Planning Committee of the University and further for approval by the University's Educational and Methodological Council (for undergraduate programs). Postgraduate education programs, as well as higher education programs approved by the EMC, are submitted for approval by the Academic Council of the University. Further, it is approved by the rector on the basis of the decision of the academic council of the university.

Appendix 1

DUBLIN DESCRIPTORS BY LEVEL OF EDUCATION**1 Undergraduate**

1.1 Learning outcomes are formulated both at the level of the entire program and at the level of a module, a separate discipline.

First level descriptors suggest abilities:

- 1) demonstrate knowledge and understanding in the field of study, including elements of the most advanced knowledge in this field;
- 2) apply this knowledge and understanding at a professional level;
- 3) formulate arguments and solve problems in the area under study;
- 4) to collect and interpret information for the formation of judgments, taking into account social, ethical and scientific considerations;
- 5) communicate information, ideas, problems and solutions to both specialists and non-specialists.

1.2. The general competence of a university graduate are formed on the basis of the requirements for general education, social and ethical competence, economic and organizational and managerial competence, and special competence.

1.3 General education requirement:

- 1) have basic knowledge in the field of natural sciences (social, humanitarian, economic) disciplines that contribute to the formation of a highly educated personality with a broad outlook and a culture of thinking;
- 2) have the skills to handle modern technology, be able to use information technology in the field of professional activity;
- 3) have the skills to acquire new knowledge necessary for everyday professional activities and continuing education in the postgraduate.

1.4. Requirements for social and ethical competence:

- 1) know the social and ethical values based on public opinion, traditions, customs, social norms and focus on them in their professional activities;
- 2) observe the norms of business ethics, possess ethical and legal standards of conduct;
- 3) know the traditions and culture of the peoples of Kazakhstan;
- 4) be tolerant of the traditions, culture of other peoples of the world;
- 5) know the basics of the legal system and legislation of Kazakhstan;
- 6) know the trends in the social development of society;
- 7) be able to adequately navigate in various social situations;
- 8) be able to work in a team, correctly defend their point of view, offer new solutions;
- 9) be able to find compromises, correlate their opinion with the opinion of the team;
- 10) strive for professional and personal growth.

1.5 Requirements for economic and organizational and managerial competence:

- 1) possess the basics of economic knowledge, have scientific ideas about management, marketing, finance, etc.;

2) know and understand the goals and methods of state regulation of the economy, the role of the public sector in the economy.

1.6. Requirements for readiness to change social, economic, professional roles, geographical and social mobility in the face of increasing dynamism of change and uncertainty:

1) be able to navigate in modern information flows and adapt to dynamically changing phenomena and processes in the global economy;

2) be flexible and mobile in various conditions and situations related to professional activities;

3) possess the skills of making decisions of an economic and organizational nature in conditions of uncertainty and risk.

1.7 Special competence are developed for each specialty of higher education on the basis of professional standards, taking into account the requirements of employers and the social demand of society.

When forming the framework of competence, one should be guided by the [Satbayev University's Graduate Framework Model](#). All the constituent elements of the undergraduate competency framework should be made up of the total competence transferred in each discipline of the EP and reflected in the syllabus of the discipline.

2 Graduate

2.1 The learning outcomes are expressed through competence and are designed on the basis of *the Dublin Descriptors of the 2nd level of study* (Master's) and correspond to the acquisition of the following abilities and skills by the Master's graduate:

- demonstrate developing knowledge and understanding gained at the level of higher professional education, which is the basis or opportunity for original development, or application of ideas, often in the context of scientific research;

- apply knowledge, understanding and ability to solve problems in new or unfamiliar situations in contexts and within broader (or interdisciplinary) areas related to the field of study;

- integrate knowledge, cope with complexity and make judgments based on incomplete or limited information, taking into account the ethical and social responsibility for the application of these judgments and knowledge;

- clearly and clearly communicate their conclusions and knowledge and their rationale to specialists and non-specialists;

- Continue learning on your own.

2.2 Requirements for key competence of graduates of a specialized master's program:

Master student must

have an idea:

- about modern trends in the development of scientific knowledge;

- about actual methodological and philosophical problems of natural (social, humanitarian, economic) sciences;

- about the contradictions and socioeconomic consequences of globalization processes;
- on the current state of the economic, political, legal, cultural and technological environment of the global business partnership;
- on the organization of strategic enterprise management, innovation management, leadership theories;
- about the main financial and economic problems of the functioning of enterprises.

know:

- methodology of scientific knowledge;
- the main driving forces for changing the structure of the economy;
- features and rules of investment cooperation;
- at least one foreign language at a professional level, allowing for scientific research and practical activities.

be able to:

- apply scientific methods of cognition in professional activities;
- critically analyze existing concepts, theories and approaches to the study of processes and phenomena;
- integrate knowledge gained within different disciplines, use it to solve analytical and managerial problems in new unfamiliar conditions;
- conduct a micro economic analysis of the economic activity of the enterprise and use its results in enterprise management;
- put into practice new approaches to the organization of marketing and management;
- make decisions in complex and non-standard situations in the field of organization and management of the economic activity of an enterprise (firm);
- apply in practice the norms of the legislation of the Republic of Kazakhstan in the field of regulation of economic relations;
- think creatively and be creative in solving new problems and situations;
- carry out information-analytical and information-bibliographic work with the involvement of modern information technologies;
- summarize the results of experimental research and analytical work in the form of a dissertation, article, report, analytical note, etc.

have skills:

- solving standard scientific and professional problems;
- scientific analysis and solution of practical problems in the organization and management of economic activities of organizations and enterprises;
- research problems in the field of management and marketing and use the obtained
- results for improving enterprise management methods;
- professional communication and intercultural communication;
- oratory, the correct and logical formulation of their thoughts in oral and written form;
- expanding and deepening the knowledge necessary for everyday professional activities and continuing education in doctoral studies;

- use of information and computer technologies in the field of professional activity.

- *be competent:*

- in the field of research methodology in the specialty;
- in the field of modern problems of the world economy and the participation of national economies in world economic processes;
- in the organization and management of the enterprise;
- in the implementation of industrial relations with various organizations, including public service bodies;
- in ways to ensure constant updating of knowledge, expansion of professional skills and abilities.

2.3 Requirements for key competence of graduates of scientific and pedagogical master's programs: must have an idea of:

- about the role of science and education in public life;
- about current trends in the development of scientific knowledge;
- about topical methodological and philosophical problems of natural (social, humanitarian, economic) sciences;
- about the professional competence of a teacher of higher education;
- about the contradictions and socioeconomic consequences of globalization processes;

know:

- methodology of scientific knowledge;
- principles and structure of the organization of scientific activity;
- psychology of cognitive activity of students in the learning process;
- psychological methods and means of improving the efficiency and quality of education;

be able to:

- use the acquired knowledge for the original development and application of ideas in the context of scientific research;
- critically analyze existing concepts, theories and approaches to the analysis of processes and phenomena;
- integrate knowledge gained within different disciplines to solve research problems in new unfamiliar conditions;
- by integrating knowledge, make judgments and make decisions based on incomplete or limited information;
- apply the knowledge of pedagogy and psychology of higher education in their pedagogical activities;
- apply interactive teaching methods;
- carry out information-analytical and information-bibliographic work with the involvement of modern information technologies;
- think creatively and creatively approach the solution of new problems and situations;
- be fluent in a foreign language at a professional level, allowing to conduct scientific research and teach special disciplines in universities;

- summarize the results of research and analytical work in the form of a dissertation, scientific article, report, analytical note, etc.;

have skills:

- research activities, solving standard scientific problems;
- implementation of educational and pedagogical activities on credit technology of education;

- methods of teaching professional disciplines;
- use of modern information technologies in the educational process;
- professional communication and intercultural communication;
- oratory, the correct and logical formulation of their thoughts in oral and written form;

- expanding and deepening the knowledge necessary for everyday professional activities and continuing education in doctoral studies.

be competent:

- in the field of scientific research methodology;
- in the field of scientific and scientific-pedagogical activity in higher educational institutions;

- in matters of modern educational technologies;
- in the implementation of scientific projects and research in the professional field;

- in ways to ensure constant updating of knowledge, expansion of professional skills and abilities.

2.4 ***Special competence*** are developed separately for each specialty of the graduate, taking into account the requirements of employers and the social demand of society.

3 PhD

3.1 Learning outcomes are expressed through competence and are designed based on

Dublin Qualification Descriptors Level 3 (doctoral studies) and correspond to the acquisition by a doctoral graduate of the following abilities and skills:

- demonstrate a systematic understanding of the field of study, mastery of the skills and research methods used in this area;

- plan, develop, implement and adjust the complex process of scientific research;

- to contribute with their own original research to the expansion of the boundaries of the scientific field, which may merit publication at the national or international level;

- critically analyze, evaluate and synthesize new and complex ideas;

- communicate their knowledge and achievements to colleagues, the scientific community and the general public;

- to promote the development of a society based on knowledge.

3.2 ***General competence*** of doctoral studies:

PhD doctor must:

have an idea:

- about the main stages of development and paradigm shift in the evolution of science;
- about the subject, ideological and methodological specifics of the natural (social, humanitarian, economic) sciences;
- about scientific schools of the relevant branch of knowledge, their theoretical and practical developments;
- about the scientific concepts of world and Kazakhstani science in the relevant field;
- on the mechanism for introducing scientific developments into practice;
- on the norms of interaction in the scientific community;
- about the pedagogical and scientific ethics of a scientist-researcher.

know and understand:

- current trends, directions and patterns of development of domestic science in the context of globalization and internationalization;
- methodology of scientific knowledge;
- achievements of world and Kazakhstani science in the relevant field;
- (recognize and accept) the social responsibility of science and education;
- perfect foreign language for scientific communication and international cooperation;

be able to:

- organize, plan and implement the process of scientific research;
- analyze, evaluate and compare various theoretical concepts in the field of study and draw conclusions;
- analyze and process information from various sources;
- conduct independent scientific research, characterized by academic integrity, based on modern theories and methods of analysis;
- generate their own new scientific ideas, communicate their knowledge and ideas to the scientific community, expanding the boundaries of scientific knowledge;
- choose and effectively use modern research methodology;
- plan and predict their further professional development.

have skills:

- critical analysis, evaluation and comparison of various scientific theories and ideas;
- analytical and experimental scientific activity;
- planning and forecasting the results of the study;
- oratory and public speaking at international scientific forums, conferences and seminars;
- scientific writing and scientific communication;
- planning, coordinating and implementing scientific research processes;
- a systematic understanding of the field of study and demonstrate the quality and effectiveness of the selected scientific methods;
- participation in scientific events, fundamental scientific domestic and international projects;
- leadership and team management;

- responsible and creative attitude to scientific and scientific-pedagogical activity;

- conducting a patent search and experience in the transfer of scientific information using modern information and innovative technologies;

- protection of intellectual property rights to scientific discoveries and developments;

- fluent communication in a foreign language.

be competent:

- in the field of scientific and scientific-pedagogical activity in the conditions of rapid renewal and growth of information flows;

- in carrying out theoretical and experimental scientific research;

- in setting and solving theoretical and applied problems in scientific research;

- in conducting a professional and comprehensive analysis of problems in the relevant field;

- in matters of interpersonal communication and human resource management;

- in matters of university training of specialists;

- in the examination of scientific projects and research;

- to ensure continuous professional growth.

3.3 **Special competence** are developed separately for each doctoral specialty, taking into account the requirements of employers and the social demand of society.

STRUCTURE OF EDUCATIONAL PROGRAMS OF SATBAYEV UNIVERSITY

Educational program of the specialty

code and name of specialty

Level: _____

Undergraduate / Graduate / PhD

1. Passport of the degree program

1.1 List of qualifications and positions

A graduate of this educational program is awarded the academic degree "bachelor _____"

SEP bachelors _____ EP _____ can hold primary positions _____ in research institutions, design and design organizations without presenting requirements for work experience in accordance with the qualification requirements of the Qualification Directory for the positions of managers, specialists and other employees, approved by order of the Minister of Labor and Social Protection of the Population of the Republic of Kazakhstan dated May 21 2012 No. 201.

1.2 Qualification characteristics of the graduate of the educational program

1.2.1 Area of professional activity

The area of professional activity is the field of science and technology, which includes a set of technologies, means, methods and methods of human activity aimed at creating conditions for the exchange of information at a distance, the transformation of information using electronic means.

1.2.2 Objects of professional activity

The objects of professional activity of graduates are technological systems, technical means that provide any transmission, emission and reception of signs, signals, written text, images, sounds, via wire, radio, optical or the following other systems, as well as the conversion of information by electronic means: communication networks and switching systems; multi-channel telecommunication systems, including _____ systems of the optical range; radio communication systems and devices, including satellite, radio relay and mobile communication systems; systems and devices for sound and television broadcasting, electroacoustics and speech information, multimedia technology; data transmission systems and devices; electronic, including computer systems for managing objects, information conversion; means of information protection in telecommunication systems; means of metrological support of telecommunication systems and networks; management and marketing in telecommunications; management of operational and service maintenance of telecommunication devices.

1.2.3 Subjects of professional activity

The subjects of the professional activity of the bachelor in the educational program _____ are the following

systems: *telecommunications; radio communications; television; broadcasting; radar and navigation; radio controls, transmitting and receiving radio centers, television centers; mobile communications; special devices of radio engineering; electronic and computer; controlled by microcontrollers and microcomputers.*

1.2.4 Types of professional activity.

Bachelor _____ *SEP* _____

EP _____ can perform the following types of professional activities:

Production and technological activities: *development and implementation of optimal technologies for the manufacture of technical means of radio engineering, electronics and telecommunications; organization and effective implementation of input quality control of materials, production control of technological processes, quality of finished products; efficient use of materials, equipment, algorithms and programs for selecting and calculating the parameters of technological processes; standardization and certification of technical means of radio engineering, electronics and telecommunications during their manufacture and repair.*

Service and operational activities: *operation of radio engineering, electronics and telecommunications systems, their technical, information, mathematical and software; prevention, repair, adjustment of technical means of radio engineering, electronics and telecommunications, equipment testing.*

Organizational and managerial activities: *organizing the work of a small team of performers, making managerial decisions in the face of various opinions; finding a compromise between different requirements (cost, quality, safety and deadlines) both in long-term and short-term planning and determining optimal solutions; assessment of production and non-production costs to ensure the required product quality.*

Installation and adjustment activities: *implementation of metrological verification of the main means of measuring the quality indicators of products; installation and adjustment of technical means of radio engineering, electronics and telecommunications.*

Calculation and design activities: *formulation of goals and objectives of design under given criteria and restrictions; development of generalized options for solving problems, analysis of these options, forecasting the consequences, finding compromise solutions in a multi-criteria environment; development, design, modeling and implementation of projects for radio engineering, electronics and telecommunications systems, taking into account energy, technological, design, operational, ergonomic and economic indicators.*

Experimental research activities: *carrying out analytical and experimental work and research to diagnose and assess the state of radio engineering, electronics and telecommunications systems using the necessary methods and means of monitoring and analysis; creation of mathematical and physical models of systems of radio engineering, electronics and telecommunications; use of methods of mathematical processing of results for experimental activities.*

1.2.5 Functions of professional activity

Bachelor of SEP _____ EP

_____ in accordance with basic and specialized training can perform the following functions at the objects of professional activity: *design; exploitation; service; mounting; adjustment; accompaniment; testing; providing software and/or hardware protection.*

1.2.6 Areas of professional activity

Directions of professional activity include *the development, implementation and operation of the following systems, depending on the studied educational programs within the specialty: telecommunications; radio communications; television _____; broadcasting; radar and navigation; radio control; mobile communications; radio transmission and radio reception of television and sound signals; radio engineering for special purposes; electronic and computer; controlled by microcontrollers and microcomputers.*

1.3 Learning outcomes**1.3.1 Key competence:**

- in the field of the native language;
- in the field of foreign languages; possession of grammar, vocabulary, phonetics, the ability to communicate in writing and orally with a native speaker of a particular language in a real life situation.
- fundamental mathematical, natural science and technical training;
- computer;
- educational;
- social (interpersonal, intercultural, civil) with society, community, team, family, friends, partners, conflicts and their settlement, cooperation, tolerance, respect and acceptance of the other (race, nationality, religion, status, role, gender), social mobility;
- entrepreneurial, economic;
- cultural, as well as additional abilities - critical thinking, creativity (creativity), innovative dimension, active life position) - realizing the ability and desire to learn throughout life, not only professionally, but also in personal and social life

1.3.2 Special competence:

- knowledge and understanding;
- application of knowledge and understanding;
- formation of judgments;
- communication skills;
- learning skills or ability to learn.

2. The content of the educational program (CEP)

3. Summary table on the volume of the educational program

Year of study	Term	Number of studying modules	Number of learning disciplines		Number of credits KZ					Total hours	ECTS	Quantity	
			MC	VC	Theoretical learning	Educational practice	Internship	Final attestation	Total			exam	dif. credit
1	1										30		
	2										30		
2	3										30		
	4										30		
3	5										30		
	6										30		
4	7										30		
	8										30		
total											240		

Notes:

1. Educational programs are developed for all trajectories of learning and mandatory for all forms of education. It is not allowed to reduce the volume of disciplines of the mandatory component. For each student studying on the basis of technical and vocational education or higher education, upon enrollment, a collation sheet is filled in and the total amount of credits mastered by him at Satbayev University (NJSC KazNRTU named after K.I. Satbayev) and the amount of credits in the context of each type of modules is determined. When forming an educational trajectory for enrollment, short-term students are offered modules, taking into account the reccredited disciplines (and their volume).

2. The undergraduate educational program contains:

1) theoretical training, including the study of cycles of general education, basic and major disciplines;

2) additional types of training - various types of professional practices, physical culture, etc.;

3) intermediate and final attestations.

At the same time, undergraduate educational programs are designed on the basis of a modular system for studying disciplines.

3. The educational program of the graduate contains:

1) theoretical training, including the study of cycles of basic and major disciplines;

2) practical training of undergraduates: various types of practices, professional internships;

3) for scientific and pedagogical graduate - research work, including the implementation of a master's thesis;

4) for specialized graduate - experimental research work, including the implementation of a master's thesis;

5) midterm and final attestation.

4. The educational program for the preparation of a Doctor of Philosophy (PhD) has a scientific and pedagogical focus and involves fundamental educational,

methodological and research training and in-depth study of disciplines in relevant areas of science for the system of higher and postgraduate education and the scientific field. The educational program for the preparation of a doctor in the profile involves fundamental educational, methodological and research training, and in-depth study of disciplines in relevant areas of science for the sectors of the national economy, the social sphere: education, medicine, law, art, services and business.

5. The main criteria for the completion of the educational process for the preparation of a bachelor, master, doctor of PhD are determined in accordance with the State Educational Standards of the corresponding level.

6. For the undergraduate EP, the production practice is planned starting from the 2nd year, regardless of the number of credits and types of professional practices provided for by the State Educational Standards and TWEP. The timing, types and content of practices are set taking into account the prerequisites.

7. The total amount of credits of obligatory and university components in the context of cycles of disciplines (GED, BD, MD) must not be less than the credits established by the SES and TWEP. It is allowed to increase the volume of disciplines of the compulsory component due to additional types of training.

AMENDMENT RECORD SHEET _____*name of the document*

Sequential number of amendment	Reason (link to document)	Section, paragraph of the document	Type of amendment (amend, cancel, add)	Notification number and date	Amendment made	
					date	Last name and initials, signature, position