The list of academic disciplines of the university component

8D07 - Engineering, Manufacturing and Civil engineering
(Code and classification of the field of education)

8D071 - Engineering and engineering trades
(Code and classification of the direction of training)

0710
(Code in the International Standard Classification of Education)

D103 - Engineering and Manufacturing Industries
(Code and classification of the educational program group)

8D07101 - Technological machinery and equipment
(Code and name of the educational program)

Doctor of philosophy (PhD)
(Level of preparation)

set of 2023

Semey 2023

Developed
By the Academic Committee of the EP
The head of the AC Nurymkhan G
EP Manager Abdilova G.

Reviewed
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Recommended for approval by the Academic Council of the University
Protocol № 4.6 "10" April 2023
Chairman of the Commission on Quality Assurance Abdilova G.

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Approved
at the meeting of the Academic Council of the University
Protocol № 1 "01" of September 2023
Chairman of the Academic Council of the University Orynbekov D.R.

Academic writing

Discipline cycle	Basic disciplines
Course	1
Credits count	5
Knowledge control form	Examination

Short description of discipline
Academic writing is a procedural formalization of the process of scientific communication. As a result of mastering this discipline, the skill of constructing an academic text is formed based on the idea of its basic structure, goals, genre and stylistic features. The study of the discipline is aimed at improving the level of academic literacy, mastering Kazakh and international standards for the creation of academic texts, developing skills in writing scientific papers of a problematic direction.

Purpose of studying of the discipline
The purpose of the discipline is to develop students` relevant competencies aimed at forming readiness and ability to implement their own research projects and present their results in writing in accordance with the norms of the international academic community, including writing a graduation paper. Improving competence in the field of academic writing: the ability to organize your own ideas correctly, clearly substantiate them and convincingly express them; knowledge about the technologies of structuring academic text; reflection skills: finding errors and analyzing your own text.

Learning Outcomes
ON2 Broadcast educational information, teach yourself to acquire knowledge.
ON3 Demonstrate basic and general knowledge about the organization of a holistic technological process, the ability to manage technical activities, skills in choosing methods, forms and technologies of food production.
ON10 To carry out methodological support of the educational process.
ON12 To interact with the professional community and with all stakeholders of the education system.

Learning outcomes by discipline
- Evaluates modern aspects of the development of science and practice in the field of technological machines and equipment
- Transmits educational information, independently acquires knowledge
- Joins the system of social values

Prerequisites
Masters degree course

Postrequisites
Basic and profile disciplines of the EP

Membrane processes and technologies in the food industry

Discipline cycle	Basic disciplines
Course	1
Credits count	5
Knowledge control form	Examination

Short description of discipline
The use of membrane processes and technology in the food industry allows a doctoral student to create highly efficient and low-waste technologies for processing solutions of inorganic and organic compounds, including liquid food products. This course contributes to improving the quality of products, their biological value and full processing and use when using membrane processes in the food industry.

Purpose of studying of the discipline
Acquisition of knowledge necessary for the formation of scientific and methodological approaches in solving professional issues in the field of membrane processes and technologies in the food industry.

Learning Outcomes
ON2 Broadcast educational information, teach yourself to acquire knowledge.
ON3 Demonstrate basic and general knowledge about the organization of a holistic technological process, the ability to manage technical activities, skills in choosing methods, forms and technologies of food production.
ON11 To study the level of assimilation of educational content by students, to explore the educational environment.

Learning outcomes by discipline
- Demonstrates basic and general knowledge about the organization of an integral technological process, the ability to manage technical activities, skills in choosing methods and forms of hydromechanical processes for food processing.

Prerequisites
Masters degree course

Postrequisites
Basic and profile disciplines of the EP

Research methods

Discipline cycle	Basic disciplines
Course	1
Credits count	5
Knowledge control form	Examination

Short description of discipline
The discipline gives an idea of the methods of scientific research as a special way of knowing reality and a means of forming technical knowledge. The course is aimed not only at mastering theoretical knowledge, but also at the ability to apply new research paradigms in practice, introduce them into the research process, reveal and study historical facts, and adapt them to research work

Purpose of studying of the discipline
The discipline gives an idea of the methods of scientific research as a special way of knowing reality and a means of forming technical

knowledge. The course is aimed not only at mastering theoretical knowledge, but also at the ability to apply new research paradigms in practice, introduce them into the research process, reveal and study historical facts, and adapt them to research work.

Learning Outcomes

ON6 Manage the organization of experiments and processing of the received data.
ON7 Plan, simulate preparation and correctly conducts a scientific experiment. Performs processing of the obtained experimental data.
ON9 Apply the theory and technique of engineering experiment; understand the relationship of the theory and technique of engineering experiment with other sciences, the ability to manage technical activities, skills in using the theory and technique of engineering experiment.

Learning outcomes by discipline

- Demonstrates basic and general educational knowledge about the organization of a holistic technological process, the ability to manage technical activities, the skills of using scientific research methods.

Prerequisites

Masters degree course

Postrequisites

Basic and profile disciplines of the EP Research practice

Research work of the doctoral student, including internship and doctoral dissertation I

Discipline cycle	Profiling discipline
Course	1
Credits count	15
Knowledge control form	Total mark on practice

Short description of discipline

The research work of a doctoral student should correspond to the main problems of the specialty in which the doctoral dissertation is being defended. Be relevant, contain scientific novelty and practical significance. Be based on modern theoretical, methodological and technological achievements of science and practice. Based on modern methods of data processing and interpretation using computer technology. Be carried out using modern methods of scientific research. Contain research (methodological, practical) sections on the main protected provisions.

Purpose of studying of the discipline

The purpose of the research work is to prepare a doctoral student who owns the methodology of scientific knowledge and is able to apply scientific methods in the study of problems of modern science and technology.

Learning Outcomes

ON7 Plan, simulate preparation and correctly conducts a scientific experiment. Performs processing of the obtained experimental data.
ON11 To study the level of assimilation of educational content by students, to explore the educational environment.

Learning outcomes by discipline

- Prepares the results of scientific research based on modern achievements in science, technology and production on the formulated topic.

Prerequisites

Masters degree course

Postrequisites

Basic and profile disciplines of the EP Research practice

Research work of the doctoral student, including internship and doctoral dissertation II

Discipline cycle	Profiling discipline
Course	1
Credits count	20
Knowledge control form	Total mark on practice

Short description of discipline

The research work of a doctoral student should correspond to the main problems of the specialty in which the doctoral dissertation is being defended. Be relevant, contain scientific novelty and practical significance. Be based on modern theoretical, methodological and technological achievements of science and practice. Based on modern methods of data processing and interpretation using computer technology. Be carried out using modern methods of scientific research. Contain research (methodological, practical) sections on the main protected provisions.

Purpose of studying of the discipline

The purpose of the research work is to prepare a doctoral student who owns the methodology of scientific knowledge and is able to apply scientific methods in the study of problems of modern science and technology.

Learning Outcomes

ON7 Plan, simulate preparation and correctly conducts a scientific experiment. Performs processing of the obtained experimental data.
ON8 Demonstrate basic and general knowledge about the organization of an integral technological process, the ability to manage technical activities, skills in choosing methods and forms of hydromechanical processes for food processing.
ON11 To study the level of assimilation of educational content by students, to explore the educational environment.

Learning outcomes by discipline

- Prepares the results of scientific research based on modern achievements in science, technology and production on the formulated topic.

Prerequisites

Masters degree course

Postrequisites

Basic and profile disciplines of the EP

Pedagogical practice

Discipline cycle	Basic disciplines

Course	2
Credits count	10
Knowledge control form	Total mark on practice

Short description of discipline
The pedagogical practice of doctoral students is a real preparation of future teachers, conducted in conditions very close to the high-class work of a teacher. During the practice, doctoral students draw up a project of educational work with a group of students, and also carry out the concept of classes reflecting the completed stage of the educational process based on the search for specialized subjects, as well as demonstrate mastery of advanced technologies of teaching methods.

Purpose of studying of the discipline
To form practical skills of teaching and learning methods in universities. Consolidate the theoretical knowledge gained in the process of training and professional development.

Learning Outcomes
ON2 Broadcast educational information, teach yourself to acquire knowledge.
ON4 Introduce students to the system of social values.
ON5 Check the level of consolidation of theoretical knowledge gained in the process of training and professional development.

Learning outcomes by discipline
Examines the level of assimilation of the content of education by students, explores the educational environment

Prerequisites
Basic and profile disciplines of the EP

Postrequisites
Research work of the doctoral student, including internship and doctoral dissertation VI

Research work of the doctoral student, including internship and doctoral dissertation III

Discipline cycle	Profiling discipline
Course	2
Credits count	20
Knowledge control form	Total mark on practice

Short description of discipline
The research work of a doctoral student should correspond to the main problems of the specialty in which the doctoral dissertation is being defended. Be relevant, contain scientific novelty and practical significance. Be based on modern theoretical, methodological and technological achievements of science and practice. Based on modern methods of data processing and interpretation using computer technology. Be carried out using modern methods of scientific research. Contain research (methodological, practical) sections on the main protected provisions.

Purpose of studying of the discipline
The purpose of the research work is to prepare a doctoral student who owns the methodology of scientific knowledge and is able to apply scientific methods in the study of problems of modern science and technology.

Learning Outcomes
ON2 Broadcast educational information, teach yourself to acquire knowledge.
ON7 Plan, simulate preparation and correctly conducts a scientific experiment. Performs processing of the obtained experimental data.

Learning outcomes by discipline
- Prepares the results of scientific research based on modern achievements in science, technology and production on the formulated topic.

Prerequisites
Basic and profile disciplines of the EP

Postrequisites
Research practice

Research work of the doctoral student, including internship and doctoral dissertation IV

Discipline cycle	Profiling discipline
Course	2
Credits count	30
Knowledge control form	Total mark on practice

Short description of discipline
The research work of a doctoral student should correspond to the main problems of the specialty in which the doctoral dissertation is being defended. Be relevant, contain scientific novelty and practical significance. Be based on modern theoretical, methodological and technological achievements of science and practice. Based on modern methods of data processing and interpretation using computer technology. Be carried out using modern methods of scientific research. Contain research (methodological, practical) sections on the main protected provisions.

Purpose of studying of the discipline
The purpose of the research work is to prepare a doctoral student who owns the methodology of scientific knowledge and is able to apply scientific methods in the study of problems of modern science and technology.

Learning Outcomes
ON7 Plan, simulate preparation and correctly conducts a scientific experiment. Performs processing of the obtained experimental data.
ON11 To study the level of assimilation of educational content by students, to explore the educational environment.

Learning outcomes by discipline
- Prepares the results of scientific research based on modern achievements in science, technology and production on the formulated topic.

Prerequisites
Basic and profile disciplines of the EP

Postrequisites
Research practice

Research practice

Discipline cycle	Profiling discipline
Course	3
Credits count	10
Knowledge control form	Total mark on practice

Short description of discipline
Research practice is a type of research work focused on strengthening the systematization of theoretical and methodological training of a doctoral student, the actual mastering of the technology of research work, as well as improving the actual ability to perform scientific and experimental activities in accordance with the requirements for the level of training of a PhD doctor. During the practice, doctoral students are given the chance to perform experimental studies according to a previously researched plan that takes into account the problems of the doctoral dissertation.

Purpose of studying of the discipline
To analyze the latest theoretical, methodological and technological achievements of domestic and foreign science, as well as to consolidate practical skills, the application of modern methods of scientific research, processing and interpretation of experimental data in dissertation research.

Learning Outcomes
ON6 Manage the organization of experiments and processing of the received data.
ON7 Plan, simulate preparation and correctly conducts a scientific experiment. Performs processing of the obtained experimental data.
ON9 Apply the theory and technique of engineering experiment; understand the relationship of the theory and technique of engineering experiment with other sciences, the ability to manage technical activities, skills in using the theory and technique of engineering experiment.

Learning outcomes by discipline
- Manages the organization of experiments and processing of the obtained data.

Prerequisites
Basic and profile disciplines of the EP

Postrequisites
Research work of the doctoral student, including internship and doctoral dissertation V Research work of the doctoral student, including internship and doctoral dissertation VI

Research work of the doctoral student, including internship and doctoral dissertation V

Discipline cycle	Profiling discipline
Course	3
Credits count	20
Knowledge control form	Total mark on practice

Short description of discipline
The research work of a doctoral student should correspond to the main problems of the specialty in which the doctoral dissertation is being defended. Be relevant, contain scientific novelty and practical significance. Be based on modern theoretical, methodological and technological achievements of science and practice. Based on modern methods of data processing and interpretation using computer technology. Be carried out using modern methods of scientific research. Contain research (methodological, practical) sections on the main protected provisions.

Purpose of studying of the discipline
The purpose of the research work is to prepare a doctoral student who owns the methodology of scientific knowledge and is able to apply scientific methods in the study of problems of modern science and technology.

Learning Outcomes
ON2 Broadcast educational information, teach yourself to acquire knowledge.
ON6 Manage the organization of experiments and processing of the received data.
ON7 Plan, simulate preparation and correctly conducts a scientific experiment. Performs processing of the obtained experimental data.

Learning outcomes by discipline
- Prepares the results of scientific research based on modern achievements in science, technology and production on the formulated topic.

Prerequisites
Basic and profile disciplines of the EP

Postrequisites
Research practice

Research work of the doctoral student, including internship and doctoral dissertation VI

Discipline cycle	Profiling discipline
Course	3
Credits count	18
Knowledge control form	Total mark on practice

Short description of discipline
The research work of a doctoral student should correspond to the main problems of the specialty in which the doctoral dissertation is being defended. Be relevant, contain scientific novelty and practical significance. Be based on modern theoretical, methodological and technological achievements of science and practice. Based on modern methods of data processing and interpretation using computer technology. Be carried out using modern methods of scientific research. Contain research (methodological, practical) sections on the main protected provisions.

Purpose of studying of the discipline

The purpose of the research work is to prepare a doctoral student who owns the methodology of scientific knowledge and is able to apply scientific methods in the study of problems of modern science and technology.

Learning Outcomes

ON6 Manage the organization of experiments and processing of the received data.
ON7 Plan, simulate preparation and correctly conducts a scientific experiment. Performs processing of the obtained experimental data.
ON11 To study the level of assimilation of educational content by students, to explore the educational environment.

Learning outcomes by discipline

- Prepares the results of scientific research based on modern achievements in science, technology and production on the formulated topic.

Prerequisites

Basic and profile disciplines of the EP

Postrequisites

Research practice