

## The list of academic disciplines of the university component

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

**8D072 - Manufacturing and processing**  
(Code and classification of the direction of training)

**0720**  
(Code in the International Standard Classification of Education)

**D111 - Food production**  
(Code and classification of the educational program group)

**8D07202 - Food Safety**  
(Code and name of the educational program)

**Doctor of philosophy (PhD)**  
(Level of preparation)

set of 2023

**Developed**

By the Academic Committee of the EP  
The head of the AC Nurymzhan G.N.  
EP Manager Assenova B.

**Reviewed**

at the meeting of the Quality Assurance Commission of the Faculty of Engineering and Technology  
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.

Approved at the meeting of the Academic Council of the University Protocol No. 8 "25" April 2023.

**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

*Genres of academic writing. Academic text. Principles of structuring a scientific text. Formulation of a research question. The structure of the introduction. Writing a grant application and reporting documentation on scientific projects. Bibliography and reference apparatus. Annotations and features of their compilation. Dissertation as a scientific and qualifying academic text. Reviewing a scientific text.*

### Purpose of studying of the discipline

*Academic subscription is a methodology for writing scientific texts, such as essays, term papers, theses, master's and doctoral dissertations, scientific articles and monographs. Academic subscription is the ability to express and substantiate individual thoughts and ideas of doctoral students and convey them to the target audience. Academic writing is the ability to write scientific texts, choose and use the language and style of their writing.*

*Academic letter of doctoral students. Strengthening professional competence and communication links. Formation of linguistic and pragmatic thinking. The ability to write and execute scientific documents and texts competently.*

### Learning Outcomes

*ON1 Have an understanding of the scientific principles of food safety*

*ON2 Be able to conduct an analysis of foreign methods and means of ensuring the continuous improvement of the effectiveness of the international food safety management system*

### Learning outcomes by discipline

*Have an idea of the scientific foundations of food safety.*

*Be able to analyze foreign methods and means to ensure continuous improvement of the effectiveness of the international food safety management system*

### Prerequisites

*Masters degree course*

### Postrequisites

*Final examination*

## Research methods

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

### Short description of discipline

*Functions of science. Scientific education, its principles, patterns of ownership, levels of education. Logic of scientific research. Study forecast. Paths for the development of science and scientific research, the role of technical sciences, computer science and engineering research in modern science. Systems approach in science and technology. Informational approach in the study. Modeling. Change in information during the study.*

### Purpose of studying of the discipline

*Provision of conditions for obtaining high-quality professional education, acquisition of research, General cultural and professional competencies in the field of quality control and food safety.*

### Learning Outcomes

*ON3 Apply the general principles of planning and implementation of the HACCP system*

*ON4 Understands the genetic toxicity of substances, toxicological and hygienic problems arising in the food industry*

### Learning outcomes by discipline

*Apply the general principles of planning and implementation of the HACCP system.*

*Understands the genetic toxicity of substances, toxicological and hygienic problems arising in the food industry.*

### Prerequisites

*Masters degree course*

### Postrequisites

*Doctoral student research work, including internship and doctoral dissertation IV*

## Scientific Basics of Food Safety

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

### Short description of discipline

*Knowledge of general theoretical technology and technology for the analysis, synthesis and assessment of phenomena, methodological and regulatory materials on technological preparation of production, knowledge on ensuring the safety of food raw materials and food products. Food safety concept, terms and definitions. Food safety controls, challenges and perspectives. Risks and controls in the food supply system. HACCP Quality Control, Risk Assessment.*

### Purpose of studying of the discipline

*In the food industry, one of the main consumer requirements is food safety. Food safety is a mandatory component of all aspects of product quality. The Law of the Republic of Kazakhstan dated July 21, 2007 No. 301 "On Food safety" was adopted, in connection with which the legal basis for ensuring food safety was established to protect human life and health, the legitimate interests of consumers and the environment. Within the framework of this law, the state control and supervision of food safety is the organization of*

laboratories to determine the qualitative and quantitative composition of genetically modified objects and the level of harmful impurities, laboratories of the state veterinary and sanitary and epidemiological expertise in accordance with international requirements.

In accordance with the above-mentioned technical regulations and the Law of the Republic of Kazakhstan, by placing high requirements on the safety and quality of food products intended for general consumption, it is possible not only to improve nutrition, but also to improve the health of the population of the country. Therefore, this course is aimed at familiarizing doctoral students with the basic rules in the field of food safety, teaching them how to ensure production at all levels.

### **Learning Outcomes**

ON5 Identify the threats of preliminary measures identified by analyzing hazards that threaten food safety at work

ON6 Monitor compliance with the technological process, take part in the implementation of measures to ensure the safety of food production

### **Learning outcomes by discipline**

Identify the threats of preliminary measures identified by analyzing the hazards that threaten the safety of food products for production.

To monitor compliance with the technological process; to take part in the implementation of measures to ensure the safety of food production.

### **Prerequisites**

Masters degree course

### **Postrequisites**

Final examination

## **Doctoral student research work, 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**

organization of scientific research, search and exchange of scientific information

### **Purpose of studying of the discipline**

acquisition of knowledge concerning the object of scientific research

### **Learning Outcomes**

ON7 Use the knowledge of basic sciences in the design and development of food safety management systems; be able to organize research activities in the study of physico-chemical, toxicological, microbiological properties in food products, methods of their processing

### **Learning outcomes by discipline**

Collect, process, analyze, systematize scientific and technical information on the topic under consideration and develop and implement a food safety management system

### **Prerequisites**

Research methods

### **Postrequisites**

Doctoral student research work, including internship and doctoral dissertation II

## **Doctoral student research work, 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**

to monitor compliance with the process; to take part in the implementation of measures to ensure the safety of food production

### **Purpose of studying of the discipline**

search and exchange of scientific information in the organization of scientific research

### **Learning Outcomes**

ON7 Use the knowledge of basic sciences in the design and development of food safety management systems; be able to organize research activities in the study of physico-chemical, toxicological, microbiological properties in food products, methods of their processing

### **Learning outcomes by discipline**

Use general scientific methodology and terminology in the field of food safety; methods of scientific research necessary for independent research work

### **Prerequisites**

Doctoral student research work, including internship and doctoral dissertation I

### **Postrequisites**

Doctoral student research work, including internship and doctoral dissertation III

## **Pedagogical practice**

Discipline cycle	Basic disciplines
Course	2
Credits count	10
Knowledge control form	Total mark on practice

### **Short description of discipline**

pedagogical practice is aimed at achieving a high quality of postgraduate professional education,

*the implementation of theoretical knowledge, the development of professional qualities of a university teacher and the formation of competencies*

*of doctoral graduates in pedagogical activity and educational sphere Pedagogical practice is aimed at the formation of functional competencies, the development of abilities to perform tasks in professional and educational spheres. Pedagogical practice forms doctoral students' mastery of the skills of the educational process in higher educational institutions*

### **Purpose of studying of the discipline**

*formation of professional and personal competencies necessary for the organization of the educational process in higher education.*

### **Learning Outcomes**

*ON10 Implements the system of quality and safety of food products based on the HACCP system*

*ON11 To participate in the development of high-quality and safe packaging materials and their use in technological and sanitary modes of processing products and requirements for their quality.*

### **Learning outcomes by discipline**

*Be able to plan laboratory and practical classes, work with methodological, educational literature and programs.*

### **Prerequisites**

*International safety of technological process and production*

### **Postrequisites**

*Doctoral student research work, including internship and doctoral dissertation III*

## **Doctoral student research work, 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**

*to prepare a doctoral student who knows the methodology of scientific knowledge of processes and is able to apply scientific methods in the study of problems of modern production, the final result of whose research activity is the writing and successful defense of a doctoral dissertation.*

### **Purpose of studying of the discipline**

*conducting research and experimental work on the topic of the dissertation*

### **Learning Outcomes**

*ON7 Use the knowledge of basic sciences in the design and development of food safety management systems; be able to organize research activities in the study of physico-chemical, toxicological, microbiological properties in food products, methods of their processing*

### **Learning outcomes by discipline**

*analysis of the collected research results and execution on request*

### **Prerequisites**

*Doctoral student research work, including internship and doctoral dissertation II*

### **Postrequisites**

*Doctoral student research work, including internship and doctoral dissertation IV*

## **Doctoral student research work, 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 as part of the main educational programs of doctoral training areas contributes to the formation of highly qualified specialists capable of solving scientific and practical issues in engineering and technology.*

### **Purpose of studying of the discipline**

*collection of information and selection of materials, conducting research on the topic of the dissertation*

### **Learning Outcomes**

*ON7 Use the knowledge of basic sciences in the design and development of food safety management systems; be able to organize research activities in the study of physico-chemical, toxicological, microbiological properties in food products, methods of their processing*

### **Learning outcomes by discipline**

*the ability to work with databases and the correct formulation of a query on the research topic*

### **Prerequisites**

*Doctoral student research work, including internship and doctoral dissertation III*

### **Postrequisites**

*Doctoral student research work, including internship and doctoral dissertation V*

## **Research practice**

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

### **Short description of discipline**

*acquisition of experience in the study of an actual scientific problem, as well as the selection of necessary materials for the dissertation*

### **Purpose of studying of the discipline**

obtaining knowledge about innovative technologies of food production, knowledge of the methodology of scientific research

### **Learning Outcomes**

ON8 Analyze and apply modern foreign methods of analysis and means of ensuring food safety.

ON9 Applies knowledge of the history and origin of the food safety management system, the hazard analysis system and the critical control points, the Codex Alimentarius Commission activities, implements a food quality and safety system based on the HACCP system

ON10 Implements the system of quality and safety of food products based on the HACCP system

### **Learning outcomes by discipline**

use basic and reference literature; plan research work

### **Prerequisites**

Research methods

### **Postrequisites**

Doctoral student research work, including internship and doctoral dissertation VI

## **Doctoral student research work, 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**

possession of modern specialized skills and methods necessary for making effective decisions in the field of engineering and technology

### **Purpose of studying of the discipline**

apply measured values when implementing a food safety management system; use knowledge of fundamental sciences in their practical activities to solve research, information retrieval, methodological tasks; in the field of food safety

### **Learning Outcomes**

ON7 Use the knowledge of basic sciences in the design and development of food safety management systems; be able to organize research activities in the study of physico-chemical, toxicological, microbiological properties in food products, methods of their processing

### **Learning outcomes by discipline**

to build an effective integrated documentation system; to evaluate, monitor and analyze data related to documentation management; to conduct a general analysis and assessment of the actual status and relevance of all used documentation

### **Prerequisites**

Research practice

### **Postrequisites**

Doctoral student research work, including internship and doctoral dissertation VI

## **Doctoral student research work, 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**

contribute with their own original research to pushing the boundaries of the scientific field, which may merit publication nationally or internationally level

### **Purpose of studying of the discipline**

collection, processing, analysis, systematization of scientific and technical information on the topic under consideration

### **Learning Outcomes**

ON10 Implements the system of quality and safety of food products based on the HACCP system

ON11 To participate in the development of high-quality and safe packaging materials and their use in technological and sanitary modes of processing products and requirements for their quality.

### **Learning outcomes by discipline**

to use the knowledge of fundamental sciences in their practical activities to solve research, information retrieval, methodological problems in the field of food safety.

### **Prerequisites**

Doctoral student research work, including internship and doctoral dissertation V

### **Postrequisites**

Final examination