The list of academic disciplines of the university component

7M01 - Pedagogical sciences
(Code and classification of the field of education)

7M015 - Training of teachers in Natural science subjects
(Code and classification of the direction of training)

0114
(Code in the International Standard Classification of Education)

M012 - Training of computer science teachers (kazakh, russian, english languages)
(Code and classification of the educational program group)

7M01503 - Informatics
(Code and name of the educational program)

Master
(Level of preparation)

set of 2024

Semey 2024

Developed
Academic Committee of the OP
Head of JSC Ospanova D..
Manager OP Ryszhova A.

Reviewed
Considered
At a meeting of the Academic Quality Commission of the
Natural and Mathematical of the faculty
Protocol № 3 "9" of January 2024
At a meeting of the Academic Quality Commission of the Higher School of Physical and Mathematical
Sciences
Recommended for approval by the Academic Council of the University
Protocol No.1 «06» june 2024
Chairman of the Commission Zheldybayeva B.S.

Approved

at a meeting of the University Academic Council by protocol No. 6/1 of January 19, 2024.

at a meeting of the University Academic Council by protocol No. 11 of June 28, 2024.
Chairman of the Academic Council of the University Orynbekov D.R.

Foreign language (professional)

Discipline cycle	Basic disciplines
Course	1
Credits count	3
Knowledge control form	Examination

Short description of discipline
Mastery of general cultural, professional and special competencies for the implementation of professional activities, involving teaching free reading of original literature of the relevant branch of knowledge in a foreign language; development of oral communication skills in monological and dialogical form in the specialty; development of written scientific communication skills on topics related to the scientific work of a graduate student, as well as familiarization with the forms and types of international cooperation in the scientific field.

Purpose of studying of the discipline
The purpose of studying the discipline "Foreign language (professional)" in the master`s degree program is the systematic deepening of communicative competence within the framework of international standards of foreign language education on the basis of further development of skills and abilities of active language proficiency in the professional activity of the future master.

Learning Outcomes
ON1 Apply fundamental scientific, pedagogical, managerial, communicative knowledge and skills in professional activities.

Learning outcomes by discipline
- to know the specifics of oral and written speech in the fields of professional, scientific, socio-political relations;
- to know the national and cultural peculiarities of the creation and organization of a text in a foreign language within the framework of professionally motivated conditions;
- to know the stylistic features of the vocabulary of a foreign language in the field of professional communication;
be able to perform:
- implementation of professional activity in linguistic, sociolinguistic, information-analytical and communicative aspects;
- creating your own verbal and non-verbal order in the fields of professional and scientific socio-political relations;
- the use of a variety of language and speech means adequate to social factors, communication conditions, the status of the interlocutor and his communicative intentions;
-be able to organize speech activity as a representative of another culture and the nature of communication in accordance with the tasks of communication, the speech situation, individual characteristics;
the presence of skills:
- to perceive by ear and understand the appropriate level of messages of a business, informational and vocational nature;
- dialogical and monological communication within the framework of professional activity;
- to get acquainted and study business and scientific and technical documentation, which provides for obtaining information from what has been read and using it in speech;
- have the skills of systematic presentation of thoughts, thinking, information when writing letters of an official, professional nature;

Prerequisites
Bachelor

Postrequisites
The research work of a student, including an internship and the implementation of a master s thesis II Practice research

History and philosophy of science

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

Short description of discipline
The discipline is aimed at studying the culture of scientific thinking, forms analytical capabilities and research skills, provides theoretical and practical knowledge necessary for a future scientist. Explores the historical evolution of the sciences and the philosophical perspectives they form. The origins of modern science, its social and institutional connections are described. General philosophical issues related to thought experiments, confirmation and refutation of theories, the origin and application of quantitative and high-quality research methods are considered.

Purpose of studying of the discipline
the formation of an interdisciplinary worldview among undergraduates, based on a deep understanding of the history and philosophy (theory) of scientific thinking, as part of a universal culture.

Learning Outcomes
ON1 Apply fundamental scientific, pedagogical, managerial, communicative knowledge and skills in professional activities.

Learning outcomes by discipline
ве able to apply fundamental scientific, pedagogical, managerial, and communicative knowledge and skills in professional activities

Prerequisites
Basic and profile disciplines of the EP

Postrequisites
Informatization of education and learning problems

Higher Education Pedagogy

Discipline cycle	Basic disciplines
Course	1
Credits count	3
Knowledge control form	Examination

Short description of discipline
The course is aimed at studying the main directions, principles and patterns of higher education. During the course of the course, the

basic concepts of modern pedagogy, concepts and theories of teaching and upbringing, didactics of higher education will be considered. The master`s student will master the skills of designing the organization of the educational process, techniques of individual and group reflection, will be able to correctly formulate pedagogical goals, apply educational technologies in the educational process. in the process, to design work programs of disciplines.

Purpose of studying of the discipline
The purpose of mastering the discipline is to master the system of knowledge about higher education, its content, structure, principles of educational process management and mastering modern technologies in the field of management and organization of the educational process

Learning Outcomes
ON1 Apply fundamental scientific, pedagogical, managerial, communicative knowledge and skills in professional activities.

Learning outcomes by discipline
• Be able to solve the problems of higher pedagogical education and the prospects for its further development;
• Have the skills to consider the application of effective university technologies;
• Solve topical and psychological and pedagogical problems,

Prerequisites
Bachelor

Postrequisites
Methodological training of Informatics teacher at the University Pedagogical practice

Psychology of management

Discipline cycle	Basic disciplines
Course	1
Credits count	3
Knowledge control form	Examination

Short description of discipline
The content of the course is aimed at mastering the approaches and directions of management psychology, psychological laws of management, features of planning and solving management problems. Students will get acquainted with the psychological methods of resolving conflict situations, master the ways of motivating work, the methods of using effective management styles. Skills will be formed to analyze the psychological causes underlying the decline in the effectiveness of the management process.

Purpose of studying of the discipline
The purpose of the discipline "Psychology of Management" is the formation of scientifically based ideas about the system of mental phenomena, psychological variables of behavior and conscious human activity in modern conditions and allows undergraduates to form skills of applying the acquired psychological knowledge in educational activities

Learning Outcomes
ON1 Apply fundamental scientific, pedagogical, managerial, communicative knowledge and skills in professional activities.

Learning outcomes by discipline
- be able to determine the forms and methods of effective team management;
- develop plans for the development of organizations, provide psychological support for the activities of organizations;
- possess methods of solving managerial tasks.

Prerequisites
Basic and profile disciplines of the EP

Postrequisites
Informatization of education and learning problems

Informatization of education and learning problems

Discipline cycle	Profiling discipline
Course	1
Credits count	5
Knowledge control form	Examination

Short description of discipline
Formation and development of competences: scientific and scientific-practical thinking; deepening of theoretical and practical training of undergraduates in the chosen direction of Informatics and pedagogical activity; ensuring the choice of individual scientific direction and development of the ability to solve modern scientific and practical problems of Informatics and education; providing fundamental knowledge at the intersection of Informatics and other Sciences, guaranteeing them professional mobility in the real developing world.

Purpose of studying of the discipline
The purpose of studying the discipline is aimed at the formation and development of competencies: scientific and scientific-practical thinking; deepening the theoretical and practical training of undergraduates in the chosen direction of informatics and pedagogical activity; ensuring the choice of an individual scientific direction and the development of the ability to solve modern scientific and practical problems of informatics and education; providing fundamental knowledge at the intersection of computer science and other sciences, guaranteeing them professional mobility in the real developing world.

Learning Outcomes
ON5 Possession of the ability to generalize and critically evaluate the results obtained by domestic and foreign researchers, identify promising areas, draw up a research program.
ON6 Possess in-depth scientific knowledge in the field of software.
ON7 Recognize the essence and significance of information in the development of modern society.

Learning outcomes by discipline
Apply knowledge of the theoretical foundations and technologies of teaching informatics and ICT.
To carry out methodological support of the educational process.
Have the ability to generalize and critically evaluate the results obtained by domestic and foreign researchers, identify promising areas, draw up a research program

- Possess different forms of classes using technologies and means of informatization of education;
- To know the methods and forms of informatization of the educational process, as well as the requirements for a teacher in the field of informatization of education.

Prerequisites
Modern methods of control and evaluation

Postrequisites
Mobile learning and virtual reality

Research activities of students in computer science

Discipline cycle	Profiling discipline
Course	1
Credits count	5
Knowledge control form	Examination

Short description of discipline
When teaching the discipline, it is about the basics of organizing students ` project activities on the subject of Computer Science and teaching them how to choose a topic for the project and create it. It considers individual-oriented technologies, methods of organizing students ` own activities that combine problem-based approaches, group, reflexive, Presentation, Research, search, and other methods aimed at solving the project`s goals and objectives. Develops the skills of a future specialist in using didactic means of development, training and education.

Purpose of studying of the discipline
The purpose of the discipline is to create conditions for the formation of professional competence of undergraduates in the development of educational and research projects in the process of teaching computer science and the formation of experience in solving educational and research problems in a new educational environment.

Learning Outcomes
ON5 Possession of the ability to generalize and critically evaluate the results obtained by domestic and foreign researchers, identify promising areas, draw up a research program.
ON6 Possess in-depth scientific knowledge in the field of software.
ON7 Recognize the essence and significance of information in the development of modern society.

Learning outcomes by discipline
Apply knowledge of the theoretical foundations and technologies of teaching informatics and ICT.
To carry out methodological support of the educational process.
Have the ability to generalize and critically evaluate the results obtained by domestic and foreign researchers, identify promising areas, draw up a research program
- to take an active pedagogical position, to have their own desire for research activities;
- predict the future of their own activities and the activities of students;
- establish business forms of communication with students;
- to diagnose the creative abilities of students in a certain area.

Prerequisites
Planning and organization of scientific and pedagogical research

Postrequisites
The research work of a student, including an internship and the implementation of a master s thesis II Practice research

The research work of a student, including an internship and the implementation of a master s thesis I

Discipline cycle	Profiling discipline
Course	1
Credits count	11
Knowledge control form	Total mark on practice

Short description of discipline
In the research work of a master`s student, which includes the completion of an internship and the execution of a master`s thesis, familiarization with the topics of research work, the choice of the research topic, determination of the methodology and methods of research, training in the review and analysis of scientific literature, conducting research work, as well as creating a report on the research work and publishing on the topic, developing the skills of public defense of the completed work.

Purpose of studying of the discipline
Professional development and collection of materials for the preparation of a dissertation

Learning Outcomes
ON10 Organizes educational and research activities using mobile technologies.Carries out search, analysis and evaluation of information necessary for setting and solving professional problems in the field of education; owns planning technologies in professional activities in the field of scientific research.

Learning outcomes by discipline
Organizes educational and research activities using mobile technologies. Carries out search, analysis and evaluation of information necessary for setting and solving professional problems in the field of education; owns planning technologies in professional activities in the field of scientific research.
Organizes educational and research activities using mobile technologies. Carries out search, analysis and evaluation of information necessary for setting and solving professional problems in the field of education; owns planning technologies in professional activities in the field of scientific research.

Prerequisites
Planning and organization of scientific and pedagogical research

Postrequisites
Practice research

Pedagogical practice

Discipline cycle	Basic disciplines
Course	2
Credits count	6
Knowledge control form	Total mark on practice

Short description of discipline

Pedagogical practice performs a general professional preparatory function in terms of preparing undergraduates for teaching at a university. Pedagogical practice of undergraduates acquisition of practical skills of conducting training sessions in higher educational institutions. The practice of undergraduates is carried out within the framework of the general concept of master`s training and during the practice it is planned to conduct experimental work in accordance with the topic of the dissertation. They will also learn how to teach students educational and scientific work.

Purpose of studying of the discipline

The purpose of the practice is to deepen, improve and consolidate the acquired theoretical knowledge, the ability to apply them in pedagogical activity

Learning Outcomes

ON1 Apply fundamental scientific, pedagogical, managerial, communicative knowledge and skills in professional activities.

Learning outcomes by discipline

• consolidation of knowledge, skills and abilities acquired by undergraduates in the process of studying the disciplines of the master`s program;
• mastering the methodology of preparing and conducting various forms of classes;
• mastering the methodology of the analysis of training sessions;
• formation of an idea about modern educational information technologies;
• instilling self-education and self-improvement skills, promoting the activation of scientific and pedagogical activities of masters.
As a result of passing the scientific and pedagogical practice, the student must acquire the following practical skills, abilities and general cultural competence:
- readiness for self−development, self-realization, use of creative potential.

Prerequisites

Methodological training of Informatics teacher at the University

Postrequisites

Competence-based learning in higher education

The research work of a student, including an internship and the implementation of a master s thesis II

Discipline cycle	Profiling discipline
Course	2
Credits count	4
Knowledge control form	Total mark on practice

Short description of discipline

In the research work of a master`s student, which includes the completion of an internship and the execution of a master`s thesis, familiarization with the topics of research work, the choice of the research topic, determination of the methodology and methods of research, training in the review and analysis of scientific literature, conducting research work, as well as creating a report on the research work and publishing on the topic, developing the skills of public defense of the completed work.

Purpose of studying of the discipline

The purpose of the master`s research work is the formation of general cultural and professional competencies necessary for conducting both independent research work, the result of which is the writing and successful defense of a master`s thesis (project), and research work as part of a research team.

Learning Outcomes

ON10 Organizes educational and research activities using mobile technologies.Carries out search, analysis and evaluation of information necessary for setting and solving professional problems in the field of education; owns planning technologies in professional activities in the field of scientific research.

Learning outcomes by discipline

Organizes educational and research activities using mobile technologies. Carries out search, analysis and evaluation of information necessary for setting and solving professional problems in the field of education; owns planning technologies in professional activities in the field of scientific research.
- choose the necessary research methods (modify existing ones, develop new methods) based on the tasks of a specific study (on the topic of a master`s thesis (project) or when performing tasks of a supervisor within the framework of the (author`s) master`s program);
- to apply modern information technologies in conducting scientific research;
- process the results obtained, analyze and present them in the form of completed research (experimental research) developments (research report, abstracts, scientific article, master`s thesis (project);
- to give other skills and abilities necessary for a master`s student studying under a specific program."

Prerequisites

Planning and organization of scientific and pedagogical research

Postrequisites

Practice research

Practice research

Discipline cycle	Profiling discipline
Course	2
Credits count	13

Short description of discipline
Research practice is aimed at the development and formation of special competencies: knowledge of modern and basic methods, means and methods of obtaining, processing and storing information, as well as understanding the principles of organizing scientific research, ways to achieve and build scientific knowledge, as well as to design, implement, organize and evaluate the results of scientific research in the field of education with using new methods of science.

Purpose of studying of the discipline
The main purpose of the master`s research practice is to study theoretical, methodological and technological achievements of domestic and foreign science, as well as to consolidate practical skills in applying modern methods of scientific research, processing and interpretation of experimental data in dissertation research.

Learning Outcomes
ON8 To develop educational and methodological materials on the subjects taught, taking into account the integration of education, science and innovation.

ON9 Solve the tasks of their professional activity at the modern level, demonstrate the ability to present information; scientifically argue and defend your scientific point of view.

Learning outcomes by discipline
Organizes educational and research activities using mobile technologies. Carries out search, analysis and evaluation of information necessary for setting and solving professional problems in the field of education; owns planning technologies in professional activities in the field of scientific research.
Possess the skills of independent research work;
Master the methods of scientific research at various stages of research preparation in the conditions of the production base of practice

Prerequisites
Applied methods of analysis and processing of information in research

Postrequisites
The research work of a student, including an internship and the implementation of a master s thesis III

The research work of a student, including an internship and the implementation of a master s thesis III

Discipline cycle	Profiling discipline
Course	2
Credits count	9
Knowledge control form	Total mark on practice

Short description of discipline
Research practice is aimed at the development and formation of special competencies: knowledge of modern and basic methods, means and methods of obtaining, processing and storing information, as well as understanding the principles of organizing scientific research, ways to achieve and build scientific knowledge, as well as to design, implement, organize and evaluate the results of scientific research in the field of education with using new methods of science.

Purpose of studying of the discipline
The main goal of the undergraduate research practice is to study the theoretical, methodological and technological achievements of domestic and foreign science, as well as to consolidate practical skills in applying modern methods of scientific research, processing and interpreting experimental data in a dissertation research

Learning Outcomes
ON10 Organizes educational and research activities using mobile technologies.Carries out search, analysis and evaluation of information necessary for setting and solving professional problems in the field of education; owns planning technologies in professional activities in the field of scientific research.

Learning outcomes by discipline
Organizes educational and research activities using mobile technologies. Carries out search, analysis and evaluation of information necessary for setting and solving professional problems in the field of education; owns planning technologies in professional activities in the field of scientific research.
Possess the skills of independent research work;
Master the methods of scientific research at various stages of research preparation in the conditions of the production base of practice

Prerequisites
Planning and organization of scientific and pedagogical research

Postrequisites
Final examination The research work of a student, including an internship and the implementation of a master s thesis III