**SILLABUS**

**Fall semester 2021-2022 academic year year**

**on the educational program "Methods of Scientific Research"**

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| **Discipline Code** | **Discipline name** | **Self doctorate student work (SDSW)** | **Number of hours** | **Number of credits** | **Self doctorate student work (SDSW)** |
| **Lectures (L)** | **Practice. lessons (P)** | **Lab. lessons (L)** |
| **MNI7202** | **Methods of Scientific Research** |  | 1 | 1 |  | 2 | 5 |
| **Academic presentation of the course** |
| **Type of training** | **Type / nature of the course** | **Types of lectures** | **Types of practice sessions** | **Number of SDSW** | **Final control form** |
| Online /combined | Profiling / Theoretical | problematic,informational,binary,lecture-conference,final lecture | Writing scientific papers, conducting research, solving problems,situational tasks | At least three | Written form |
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| **Academic presentation of the course** |

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| **The purpose of the discipline** | **Expected learning outcomes (LO)****As a result of studying the discipline, the student will be able to:** | **Indicators of achievement LO (IA)****(for each LO at least 2 indicators)** |
| to form the ability of doctoral students to deepen a systemic understanding of the characteristics of scientific research, practical skills about research methods, skills in research and writing scientific papers | Apply knowledge on conducting scientific research, systems for collecting and analyzing scientific information, processing, preparing scientific research and works; | IA 1.1 Uses a system of knowledge about the concepts of training and IAeas about scientific research;IA 1.2 Explain and apply the techniques and methods of scientific researchIA 1.3 Performs groupingscientific knowledge, information and research results for the formation of scientific problems and works;IA 1.4 Applies the methods of scientific research and reflects them in scientific works; |
| Solve scientific problems using the example of specific situations with the aim of their subsequent reflection in scientific research works | IA 2.1 Discloses the procedure for conducting scientific research and obtaining scientific resultsIA 2.2 Determines the methods of conducting scientific research and obtaining scientific results,IA 2.3 Discloses information in the direction of the research topic |
| Interpret information and scientific results reflected in research papers | IA 3.1 Explain the research methodologyIA 3.2 Determines the objects of scientific researchIA 3.3 Determines indicators for scientific research analysis.IA 3.4 Determines the research problem and how to justify itIA 3.5 Forms a report on the research |
| Collect and interpret information sources to classify and define research issues | IA 4.1 Explain the research methodologyIA 4.2 IAentifies and classifies sources of informationIA 4.3 Calculates and reflects the analysis of research results.IA 4.4 Calculates and justifies research results;IA 4.5 Calculates formulas and models on the topic of scientific research |
| Compile and present an analysis of the results of research activities | IA 5.1 Explain and apply the research technique and methodologyIA 5.2 Explains the content and purpose of the formation of a research topic;IA 5.3 Reflect changes in the results of research work;IA 5.4 Calculate formulas and models in the research areaIA 5.5 Reflects the results of the researchIA 5.6 Corrects the results of scientific research. |
| **Prerequisites**  | **Academic writing, scientific writing** |
| **Post-requisites** | Financial market and financial engineering |
| **Literature and Resources** | **Literature:** **1. 1. Ponomarev A, Pikuleva E. Methodology of scientific research. - Ed. 2nd, - Moscow: 2017.-185 p.****2. Korotkina A. Academic writing: process, product and practice Textbook for universities. 2018 - 50 p.****3. Kapterev A. Presentation Mastery: How to Create Presentations That Can Change the World - 2017****Internet resources:****1. World Bank. Global Economic Prospects, June 2020 / https://openknowledge.worldbank.org/handle/10986/33748****2. Open knowledge repository of World Bank. Policy Research Working Papers, 2020 / https://openknowledge.worldbank.org/handle/10986/9** |

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| **Academic policy of the course in the context of university moral and ethical values** | **Rules of academic conduct:****All PhD students must register for the MOOC. The deadlines for completing the online course modules must be strictly observed in accordance with the schedule for studying the discipline.****ATTENTION! Failure to meet deadlines leads to loss of points! The deadline for each assignment is indicated in the calendar (schedule) for the implementation of the content of the training course.****Academic values:****- Practical / laboratory studies.****- Plagiarism, forgery, use of cheat sheets, cheating at all stages of control are inadmissible.****- PhD Students with disabilities can receive consulting assistance by e-mail** ainatas@mail.ru. |
| **Assessment and attestation policy** | **Criteria assessment: assessment of learning outcomes in relation to descriptors (checking the formation of competencies at midterm control and exams).****Summative assessment: assessment of the activity of work in the audience (at the webinar); assessment of the completed assignment.****The final grade for the discipline is calculated using the following formula:** $\frac{РК1+МТ+РК2}{3}∙0,6+ИК∙0,4$, |

**Calendar (schedule) for the implementation of the content of the training course**

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| --- | --- | --- | --- | --- | --- | --- | --- |
| Week  | Topic name | LO | IA  | Number of hours | Maximum score | Knowledge Assessment Form | Lesson form/platform |
| **Module I Fundamentals of Research** |  |
| 1 | L 1. Methodological foundations of scientific research. Lecture type: lecture - informative | LO 1 | IA 1.1.IA 1.2 | 1 |  |  | Univer KazNU |
| 1 | S Discussion and interactive lesson. Discussion of the role of the research on the topic of scientific interests of PhD students | LO 1  | IA 1.1.IA 1.2.IA 1.3.IA 1.4. | 1 | 14 | Development of critical thinking | Univer KazNU |
| 2 | L 2. Search, collection and processing of the literature. Lecture type: lecture - informative | LO 1 | IA 1.1IA 1.2 | 1 |  |  | Univer KazNU |
| 2 | S. Analysis of scientific articles in the direction of research | LO 2 | IA 2.1.IA 2.2.IA 2.3. | 1 | 14 | Analysis | Univer KazNU |
| 3 | L 3. The goal and tasks of scientific research. Construction of hypotheses. Lecture type: lecture - informative | LO 3 | IA 3.1.IA 3.2. | 1 |  |  | Univer KazNU |
| 3 | S Analysis of scientific sources and information on the direction of research. Critical discussion of purposes of the tasks, and hypotheses: self-assessment and external assessment | LO 3 | IA 3.1.IA 3.2.IA 3.3.IA 3.4.IA 3.5 | 1 | 14 | Formation of purposes of the tasks, construction of hypotheses | Univer KazNU |
| 4 | L 4. Formation of the steps of the research. Lecture type: lecture - informative | LO 4  | IA 4.1IA 4.2 | 1 |  |  | Univer KazNU |
| 4 | S Case Study: development of the steps of the research | LO 4 | IA 4.1.IA 4.2.IA 4.3.IA 4.4. | 1 | 14 | Development of systems thinking | Univer KazNU |
|  | **SDSWT Consultation on implementation MT1** |  |  |  |  |  | Webinarin Teams |
| 5 | L 5. Research methods and scientific approaches of their application. Lecture type: lecture - informative | LO1 | IA 1.1IA 1.2 | 1 |  |  | Univer KazNU |
| 5 | S Case Study: identification of the research methods | LO1LO4 | IA 1.1.IA 1.2.IA 1.3.IA 1.4.IA 4.5 | 1 | 14 | Formation of the structure of the scientific work | Univer KazNU |
| 5 | SDSW 1 Research Line: relevance, goal, tasks, an object and subject, hypotheses on the research field of PhD students | LO1LO3 | IA 1.3IA 3.1IA 3.2 |  | 30 (15+15) | Presentation of the scientific work and answers to the questions | Univer KazNU |
| 5 | **Midterm 1** |  |  |  | 100 |  |  |
|  | **Module II Quantitative methods in scientific research** |
| 6 | **L 6.** Quantitative methods in scientific research. Part 1 Lecture type: lecture - informative | LO1LO4 | IA 1.2IA 4.1 | 1 |  |  | Univer KazNU |
| 6 | **S** Selection of quantitative research methods in the research field of the PhD student | LO4 | IA 4.1.IA 4.2.IA 4.3.IA 4.4.IA 4.5 | 1 | 14 | Development of critical thinking and analysis | Univer KazNU |
| 7 | L **7.** Quantitative methods in scientific research. Part 2 Lecture type: lecture - informative | LO4LO5 | IA 4.1IA 5.2 | 1 |  |  | Univer KazNU |
| 7 | S Application of quantitative research methods in the research field of the PhD student  | LO4LO5 | IA 4.1.IA 4.2.IA 5.3.IA 5.4.IA 5.6 | 1 | 14 | Development of critical thinking and analysis | Univer KazNU |
| 8 | L 8. Mathematical statistical methods of data analysis. Part 1 Lecture type: lecture - informative | LO 4LO5 | IA 4.1.IA 4.2.IA 5.1.IA 5.2.IA 5.3 | 1 |  |  | Univer KazNU |
| 8 | **S** Selection of mathematical statistical research methods in the research fields of the PhD student  | LO 4LO5 | IA 4.1.IA 4.2.IA 5.1.IA 5.2.IA 5.3 | 1 | 14 | Development of critical thinking and analysis | Univer KazNU |
| 9 | L 9. Mathematical statistical methods of data analysis. Part 2 Lecture type: lecture - informative | LO 4LO5 | IA 4.3.IA 4.4.IA 5.3IA 5.4.IA 5.5 | 1 |  |  | Univer KazNU |
| 9 | S Application of mathematical statistical research methods in the research fields of the PhD student  | LO 4LO5 | IA 4.3.IA 4.4.IA 5.3IA 5.4.IA 5.5 | 1 | 14 | Formation of an econometric model | Univer KazNU |
| 10 | L 10. Quantitative expert methods Lecture type: lecture - informative | LO 4LO5 | IA 4.3.IA 4.4.IA 5.3IA 5.4.IA 5.5 | 1 |  |  | Univer KazNU |
| 10 | S Application of quantitative expert methods in the research field of the PhD students  | LO 4LO5 | IA 4.3.IA 4.4.IA 5.3IA 5.4.IA 5.5 | 1 | 14 | Visualization of research results | Univer KazNU |
| 10 | SDSW 2 Presentation of scientific findings and results. Application of quantitative methods in research | LO1LO3LO4LO5 | IA 1.3IA 3.1IA 3.2IA 4.2IA 5.1IA 5.4 |  | 30 (15+15) | Presentation of the scientific work and answers to the questions | Univer KazNU |
| 10 | **МТ (Midterm Exam) 2** |  |  |  | 100 |  |  |
|  | **Module III Qualitative research methods and research results** |
| 11 | L 11. Qualitative research methods Part 1 Lecture type: lecture - informative | LO1LO3LO5 | IA 1.4IA 3.3IA 5.2 | 1 |  |  | Univer KazNU |
| 11 | S Selection of qualitative research methods in the research field of the PhD student | LO1LO3LO5 | IA 1.4IA 3.3IA 5.2 | 1 | 14 | Development of critical thinking and analysis | Univer KazNU |
| 12 | L 12. Qualitative research methods Part 2 Lecture type: lecture - informative | LO1LO3LO5 | IA 1.4IA 3.3IA 5.2 | 1 |  |  | Univer KazNU |
| 12 | S Application of qualitative research methods in the research field of the PhD student | LO1LO3LO5 | IA 1.4IA 3.3IA 5.2 | 1 | 14 | Formation of an econometric model | Univer KazNU |
| 13 | L 13. Qualitative expert research method Lecture type: lecture - informative | LO1LO3LO5 | IA 1.3IA 3.4IA 5.4 | 1 |  |  | Univer KazNU |
| 13 | S Application of qualitative expert research methods in the research field of the PhD student | LO1LO3LO5 | IA 1.3IA 3.4IA 5.4 | 1 | 14 | Development of critical thinking and analysis | Univer KazNU |
| 14 | L14 Construction of the research results Lecture type: lecture - informative | LO 4 | IA 4.1IA 4.2 | 2 |  |  | Univer KazNU |
| 14 | S Construction of the research results. Correction of mistakes | LO 4 | IA 4.1IA 4.2 | 1 | 14 | Presentation of the scientific work and answers to the questions | Univer KazNU |
| 14 | **SDSWT Consultation on implementation MT3** |  |  |  |  |  | Webinarin Teams |
| 15 | L15. Presentation of the research results Lecture type: lecture - informative | LO 5 | IA 5.1 | 1 |  |  | Univer KazNU |
| 15 | S External assessment of the scientific works. Review construction | LO 5 | IA 5.2 | 1 | 14 | Review (500 words) | Univer KazNU |
| 15 | SDSW 3 Presentation of scientific findings and results. Article | LO 5 | IA 5.5IA 5.6 |  | 30 (20+10) | Presentation and review of the scientific work |  |
|  | **MT (Midterm Exam) 3** |  |  |  | 100 |  |  |

*Comments:*

- Form of L and PT: webinar in Cisco Webex / Zoom / MS Teams (presentation of video materials for 10-15 minutes, then its discussion / consolidation in the form of a discussion / problem solving )

- Form of carrying out the CW: webinar (at the end of the course, the students pass screenshots of the work to the monitor, he/she sends them to the teacher) / test in the Moodle DLS.

- All course materials (L, QS, TK, IT, etc.) see here (see Literature and Resources, p. 6).

- Tasks for the next week open after each deadline.

- CW assignments are given by the teacher at the beginning of the webinar.]

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