**SILLABUS**

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

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

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **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 | | Test in SDS Moodle / |
| **Lecturer** | Adambekova A.A. D.e.s. Professor | | | | | |  | | |
| **e-mail** | ainatas@mail.ru | | | | | |
| **Telephones** | 87077710724 | | | | | |

|  |
| --- |
| **Academic presentation of the course** |

|  |  |  |
| --- | --- | --- |
| **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 research  IA 1.3 Performs grouping  scientific 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 results  IA 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 methodology  IA 3.2 Determines the objects of scientific research  IA 3.3 Determines indicators for scientific research analysis.  IA 3.4 Determines the research problem and how to justify it  IA 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 methodology  IA 4.2 IAentifies and classifies sources of information  IA 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 methodology  IA 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 area  IA 5.5 Reflects the results of the research  IA 5.6 Corrects the results of scientific research. |
| **Prerequisites** | **Academic writing, scientific writing** | |
| **Post-requisites** | 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** | |

|  |  |
| --- | --- |
| **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.](mailto: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:** , |

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

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 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 | LO 1 | IA 1.1.  IA 1.2 | 1 | 2 |  | Lecture in Zoom |
| 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 | 12 | Development of critical thinking | Webinar  in Zoom |
| 2 | L 2. Search, collection and processing of the literature | LO 1 | IA 1.1  IA 1.2 | 1 | 2 |  | Lecture in Zoom |
| 2 | S. Analysis of scientific articles in the direction of research | LO 2 | IA 2.1.  IA 2.2.  IA 2.3. | 1 | 12 | Analysis | Webinar  in Zoom |
| 3 | L 3. The goal and tasks of scientific research. Construction of hypotheses | LO 3 | IA 3.1.  IA 3.2. | 1 | 2 |  | Lecture in Zoom |
| 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 | 12 | Formation of purposes of the tasks, construction of hypotheses | Webinar  in Zoom |
| 4 | L 4. Formation of the steps of the research | LO 4 | IA 4.1  IA 4.2 | 1 | 2 |  | Lecture in Zoom |
| 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 | 12 | Development of systems thinking | Webinar  in Zoom |
| 4 | Consultation on implementation SDSW 1 |  |  |  |  | Answers for the questions | Webinar  in MS Teams |
| 5 | L 5. Research methods and scientific approaches of their application | LO1 | IA 1.1  IA 1.2 | 1 | 2 |  | Lecture in Zoom |
| 5 | S Case Study: identification of the research methods | LO1  LO4 | IA 1.1.  IA 1.2.  IA 1.3.  IA 1.4.  IA 4.5 | 1 | 12 | Formation of the structure of the scientific work | Webinar  in Zoom |
| 5 | SDSW 1 Research Line: relevance, goal, tasks, an object and subject, hypotheses on the research field of PhD students | LO1  LO3 | IA 1.3  IA 3.1  IA 3.2 |  | 30 (15+15) | Presentation of the scientific work and answers to the questions | Webinar  in Zoom |
| 5 | **Midterm 1** |  |  |  | 100 |  |  |
|  | **Module II Quantitative methods in scientific research** | | | | | | |
| 6 | **L 6.** Quantitative methods in scientific research. Part 1 | LO1  LO4 | IA 1.2  IA 4.1 | 1 | 2 |  | Lecture in Zoom |
| 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 | 12 | Development of critical thinking and analysis | Webinar  in Zoom |
| 7 | L **7.** Quantitative methods in scientific research. Part 2 | LO4  LO5 | IA 4.1  IA 5.2 | 1 | 2 |  | Lecture in Zoom |
| 7 | S Application of quantitative research methods in the research field of the PhD student | LO4  LO5 | IA 4.1.  IA 4.2.  IA 5.3.  IA 5.4.  IA 5.6 | 1 | 12 | Development of critical thinking and analysis | Webinar  in Zoom |
| 8 | L 8. Mathematical statistical methods of data analysis. Part 1 | LO 4  LO5 | IA 4.1.  IA 4.2.  IA 5.1.  IA 5.2.  IA 5.3 | 1 | 2 |  | Lecture in Zoom |
| 8 | **S** Selection of mathematical statistical research methods in the research fields of the PhD student | LO 4  LO5 | IA 4.1.  IA 4.2.  IA 5.1.  IA 5.2.  IA 5.3 | 1 | 12 | Development of critical thinking and analysis | Webinar  in Zoom |
| 9 | L 9. Mathematical statistical methods of data analysis. Part 2 | LO 4  LO5 | IA 4.3.  IA 4.4.  IA 5.3  IA 5.4.  IA 5.5 | 1 | 2 |  | Lecture in Zoom |
| 9 | S Application of mathematical statistical research methods in the research fields of the PhD student | LO 4  LO5 | IA 4.3.  IA 4.4.  IA 5.3  IA 5.4.  IA 5.5 | 1 | 12 | Formation of an econometric model | Webinar  in Zoom |
| 9 | Consultation on implementation SDSW 2 |  |  |  |  |  | Webinar  in Zoom |
| 10 | L 10. Quantitative expert methods | LO 4  LO5 | IA 4.3.  IA 4.4.  IA 5.3  IA 5.4.  IA 5.5 | 1 | 2 |  | Lecture in Zoom |
| 10 | S Application of quantitative expert methods in the research field of the PhD students | LO 4  LO5 | IA 4.3.  IA 4.4.  IA 5.3  IA 5.4.  IA 5.5 | 1 | 12 | Visualization of research results | Webinar  in Zoom |
| 10 | SDSW 2 Presentation of scientific findings and results. Application of quantitative methods in research | LO1  LO3  LO4  LO5 | IA 1.3  IA 3.1  IA 3.2  IA 4.2  IA 5.1  IA 5.4 |  | 30 (15+15) | Presentation of the scientific work and answers to the questions | Webinar  in Zoom |
| 10 | **МТ (Midterm Exam) 2** |  |  |  | 100 |  |  |
|  | **Module III Qualitative research methods and research results** | | | | | | |
| 11 | L 11. Qualitative research methods Part 1 | LO1  LO3  LO5 | IA 1.4  IA 3.3  IA 5.2 | 1 | 2 |  | Lecture in Zoom |
| 11 | S Selection of qualitative research methods in the research field of the PhD student | LO1  LO3  LO5 | IA 1.4  IA 3.3  IA 5.2 | 1 | 8 | Development of critical thinking and analysis | Вебинар  в Zoom |
| 12 | L 12. Qualitative research methods Part 2 | LO1  LO3  LO5 | IA 1.4  IA 3.3  IA 5.2 | 1 | 2 |  | Lecture in Zoom |
| 12 | S Application of qualitative research methods in the research field of the PhD student | LO1  LO3  LO5 | IA 1.4  IA 3.3  IA 5.2 | 1 | 8 | Formation of an econometric model | Webinar  in Zoom |
| 13 | L 13. Qualitative expert research method | LO1  LO3  LO5 | IA 1.3  IA 3.4  IA 5.4 | 1 | 2 |  | Lecture in Zoom |
| 13 | S Application of qualitative expert research methods in the research field of the PhD student | LO1  LO3  LO5 | IA 1.3  IA 3.4  IA 5.4 | 1 | 8 | Development of critical thinking and analysis | Webinar  in Zoom |
| 14 | L14 Construction of the research results | LO 4 | IA 4.1  IA 4.2 | 2 | 2 |  | Webinar  in Zoom |
| 14 | S Construction of the research results. Correction of mistakes | LO 4 | IA 4.1  IA 4.2 | 1 | 8 | Presentation of the scientific work and answers to the questions | Webinar  in Zoom |
| 14 | Consultation on the implementation of SDSW 3 |  |  |  |  |  | Webinar  in Zoom |
| 15 | L15. Presentation of the research results | LO 5 | IA 5.1 | 1 | 2 |  | Webinar  in Zoom |
| 15 | S External assessment of the scientific works. Review construction | LO 5 | IA 5.2 | 1 | 8 | Review (500 words) | Webinar  in Zoom |
| 15 | SDSW 3 Presentation of scientific findings and results. Article | LO 5 | IA 5.5  IA 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.]

Dean Bimendieva L.A.

Chairman of the Methodology Bureau

Head of the department Nurmagambetova A.

Lecturer Adambekova A.A.