## Документ подпис Federal State Autonomous Educational Institution of Higher Education MHOOPIPEOPLES FRIENDSHIP UNIVERSITY OF RUSSIA NAMED AFTER PATRICE **LUMUMBA**

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**RUDN** University

## Academy of Engineering

educational division (faculty/institute/academy) as higher education programme developer

### FINAL STATE EXAMINATION SYLLABUS

## Recommended by the Didactic Council for the Education Field of:

44.04.02 Psychological and Pedagogical Education

field of studies / specialty code and title

The final state examination is implemented within the professional education program of higher education:

Pedagogy in Engineering

higher education programme profile/specialization title

#### 1. FINAL STATE EXAMINATION GOAL AND TASKS

**The goal** of the FSC within the framework of the implementation of the EP HE "Pedagogy in Engineering" is to determine the compliance of the results of mastering the EP HE by students with the relevant requirements of the Federal State Educational Standard of HE. **The tasks** of the state final certification are:

- checking the quality of teaching a person basic humanitarian knowledge, natural science laws and phenomena necessary in professional activities;
- determination of the level of theoretical and practical preparedness graduate to perform professional tasks in accordance with the received qualification;
- establishing the degree of a person's desire for self-development, improving their qualifications and skills:
- -checking the formation of a graduate's sustainable motivation for professional activities in accordance with the stipulated ES HE types of tasks of professional activity;
- assessment of the level of graduates' ability to find organizational and managerial decisions in non-standard situations and readiness to bear for them responsibility;
- ensuring the integration of education and scientific and technical activities, increasing the efficiency of using scientific and technological achievements, reforming the scientific sphere and stimulating innovation;
- ensuring the quality of training of specialists in accordance with the FSES HE requirements

# 2. REQUIREMENTS FOR HIGHER EDUCATION PROGRAMME COMPLETION AND LEARNING OUTCOMES

A student who does not have failed tests or exams and who has fully completed the curriculum or the individual curriculum of the higher education programme is allowed to the final state examination.

On the higher education programme completion the graduate is expected to master the following **generic competences** (GC):

## **Code and descriptor of the competences**

- GC-1 Able to carry out a critical analysis of problem situations on the basis of a systematic approach, to develop an action strategy
- GC-2 Able to manage the project at all stages of its life cycle
- GC-3 Able to organize and lead the work of the team, developing a team strategy to achieve the goal
- GC-4 Able to apply modern communication technologies, including in a foreign language(s), for academic and professional interaction
- GC-5 Able to analyze and take into account the diversity of cultures in the process of intercultural interaction
- UC-6 Able to determine and implement the priorities of their own activities and ways to improve them on the basis of self-esteem
- UC-7. Able to: search for the necessary sources of information and data, perceive, analyze, memorize and transmit information using digital means, as well as using algorithms when working with data obtained from various sources in order to effectively use the information received to solve problems; evaluate information, its reliability, build logical conclusions based on incoming information and data.

## - general professional competences (GPC):

### **Code and descriptor of the competences**

- GPC-1 Able to carry out and optimize professional activities in accordance with regulatory legal acts in the field of education and the norms of professional ethics
- GPC -2 Able to design basic and additional educational programs and develop scientific and methodological support for their implementation
- GPC-3 Able to design the organization of joint and individual educational and educational activities of students, including those with special educational needs
- GPC-4 Able to create and implement the conditions and principles of spiritual and moral education of students on the basis of basic national values
- GPC-5 Able to develop programs for monitoring the results of students' education, develop and

implement programs for overcoming learning difficulties

GPC-6 Able to design and use effective psychological and pedagogical, including inclusive, technologies in professional activities necessary for the individualization of training, development, education of students with special educational needs

GPC-7 Able to plan and organize interactions between participants in educational relations

GPC-8 Able to design pedagogical activities on the basis of special scientific knowledge and research results

GPC-9 Able to possess tools for working with large amounts of structured and unstructured information, use modern digital methods of processing, analysis, interpretation and visualization of data in order to solve problems

professional and research psychological and pedagogical activities

## - professional competences (PC):

## Code and descriptor of the competences

- PC-1 Able to design basic and additional educational programs and develop scientific and methodological support for their implementation;
- PC-2 Able to design the organization of joint and individual educational and educational activities of students, including those with special educational needs;
- PC-3 Able to develop programs for monitoring the results of students' education, develop and implement programs for overcoming learning difficulties
- PC-4 Able to plan and organize interactions between participants in educational relations;
- PC-5 Able to design pedagogical activities on the basis of special scientific knowledge and research results.

#### 3. FINAL STATE EXAMINATION PROCEDURE

The final state examination can be conducted both in in-person format (students and the state examination committee are at RUDN University during the examination), and through the use of distance learning technologies (DLT) available in the RUDN Electronic Information and Educational Environment.

The procedure for in-person or DLT-facilitated final state examination is regulated by the relevant local normative act of the RUDN University.

The final state examination within the framework of the higher education programme includes:

- state exam
- defence of the graduation qualifying paper (degree thesis).

### 4. STATE EXAM PROCEDURE

The total workload of the State Exam is 3 credits.

The state exam is held in one or more disciplines and (modules) of the higher education programme, whose mastery bears a decisive importance for graduates' occupational performance.

The state exam is held in two stages:

The first stage includes the assessment of the level of a graduate's theoretical training in the form of computer testing through the tools available in the RUDN Electronic Information and Educational Environment (EIEE).

The second stage focuses on the assessment of the graduate's practical preparation for future occupational activities in the form of solving work-related situational problems (cases).

In order to prepare students for taking the state exam, the head of the educational programme (no later than one calendar month before the start of the final state examination) shall familiarise the graduate students with the final state examination syllabus, the comprehensive list of theoretical issues included in the state exam, examples of work-related (occupational) situational tasks (cases) that the students will have to solve in the process of taking the state exam, as well as with the procedure for each stage of the state exam and the grading system for evaluating its results (with assessment materials).

Before the state exam, students are offered consultations on issues and tasks included in the state exam (mandatory pre-exam consultation).

The procedure for conducting the computer testing within the final state examination is as follows. The test task contains 40 questions. The student is given 90 minutes to complete the test task. The maximum number of points that can be obtained for computer testing is 40 points (1 point for the correct answer to one question).

## The procedure for conducting the second stage of the state exam is as follows.

The second stage of the State Examination is carried out in written form using exam papers. Each exam card contains three questions of an interdisciplinary nature, aimed at determining the level of theoretical and practical preparedness of the graduate to solve professional problems determined by the RUDN OS HE / Federal State Educational Standards of Higher Education in accordance with the type of professional activity on which the educational program is oriented.

The total number of exam tickets is determined by the number of students admitted to take the state exam. The student is given 180 minutes to prepare a written response to the ticket. The maximum number of points that can be obtained for the written exam is 60 points (20, 20 and 20 points respectively).

The state exam results evaluation is carried out in accordance with the methodology set forth in the assessment toolkit that is specified in the Appendix to this syllabus.

# 5. REQUIREMENTS FOR GRADUATION QUALIFYING PAPER (DEGREE THESIS) AND PROCEDURE FOR ITS DEFENCE

The degree thesis is a graduation qualifying paper that the student (several students in a team) prepare to demonstrate his/her/their level of competence and work readiness.

The list of degree theses themes offered to students for further work is approved by the order of the head of the educational division that runs the higher education programme, the respective information is delivered to the students by the programme head no later than six months before the date of the final state examination start.

The students are allowed to suggest their own themes for the theses, under the set procedure.

The student who has passed the state exam is admitted to defend the graduation degree thesis.

The student (students) is/are allowed to defend his/ her/their thesis only if this fully completed degree paper is signed by the respective graduate (s), the supervisor, the consultant (if any), the heads of the educational department and educational division; the thesis is also subject to the external review procedure (mandatory for master's and specialist's programmes) and the plagiarism check (in the "Antiplagiarism" system). The review of the graduation qualifying paper supervisor shall be attached as well, with a specific emphasis laid on the graduate's activities in the course of the degree thesis drafting.

No later than 14 days before the date of the thesis defence, a rehearsal of the procedure is held at the presence of the degree thesis supervisor and other academic staff of the educational department, in order to timely identify and eliminate shortcomings in the structure, content and design of the degree thesis.

The degree theses are introduced to the State Examination Board members at the public defence procedure. It includes the students' oral reports with mandatory multimedia (graphic) presentations that introduce the thesis main content.

At the end of the reports, the students reply orally to the State Examination Board members' questions regarding the subject, structure, content of the paper and the profile/specialisation of the higher education programme. The reports and/or answers to the Board members' questions may be delivered in a foreign language.

The stages of the graduation qualifying paper preparation, the requirements for its structure, volume, contents and design, as well as the list of mandatory and recommended

documents submitted for defence are specified in the relevant guidelines.

The evaluation of the degree thesis defense results is carried out in accordance with the methodology set forth in the assessment toolkit that is specified in the Appendix to the syllabus.

## 6. REQUIREMENTS FOR EQUIPMENT AND TECHNOLOGY SUPPORT FOR FINAL STAE EXAMINATION

To prepare for the State Examination and for the Higher Qualification Test, students use classrooms designed for independent work, equipped with specialized furniture and technical equipment, as well as classrooms for conducting lecture-type classes, practical classes, group and individual consultations with a set of specialized furniture; technical means: Set of specialized furniture; technical means: Epson EH-TW5300 projector (LCD, 1080p 1920 x 1080, 2200Lm, 35000:1, 2 x HDMI, MHL, Draper Baronet NTSC screen (3:4) 244/96(8) 152\*203 MW, output in Internet via LAN and Wi-Fi. Software: Microsoft products (OS, suite of office applications, including MS Office/Office 365, Teams, Skype).

To conduct the first stage of the State Exam (computer testing), a classroom is used, equipped with workstations with personal computers (at least 12), equipped with the necessary software and a connection to the Internet.

To conduct the second stage of the State Examination (answering exam papers) and defending the examination papers, a room with a capacity of at least 12 people is used, in which workplaces are equipped for all members of the State Examination Committee, with the opportunity to listen to reports, view public presentations of speakers, keep notes and minutes, There are places for listeners who wish to attend the defense procedure for the WRC. The required room equipment includes:

- equipment for public presentations of the results of the research and development work, including a multimedia screen, projector, and audio equipment.
  - a board for illustrating answers to questions.

The student can inform the head of the department in writing about wishes for additional material and technical equipment (if necessary) of the audience assigned to defend the thesis no later than a week before the defense procedure.

### 7. RESOURCES RECOMMENDED FOR FINAL STATE EXAMINATION

Basic literature for preparing for the State Examination, for performing and defending the thesis:

- 1. The procedure for organizing and carrying out educational activities in educational programs of higher education bachelor's, specialist and master's programs implemented in the federal state autonomous educational institution of higher education "Peoples' Friendship University of Russia", approved by the Rector's Order No. 354 dated 06/02/2022.
- 2. The procedure for conducting the final certification of students in the main professional educational programs of higher education bachelor's programs, specialty programs and master's programs implemented in the federal state autonomous educational institution of higher education "Peoples' Friendship University of Russia", approved by the Rector's Order No. 10 dated January 19, 2023.
- 3. Regulations for the use of the Anti-Plagiarism system for checking written academic work at RUDN, approved by the Rector's Order No. 228 dated March 30, 2018.
- 4. Basic literature and additional literature indicated in the work programs of the disciplines of the educational program (in preparation for the state exam).

Additional literature for preparing for the State Examination, for performing and defending the thesis:

- 5. Federal Law "On Education in the Russian Federation" dated December 29, 2012 No. 273-FZ.
- 6. The procedure for organizing and carrying out educational activities in educational programs of higher education bachelor's programs, specialty programs, master's programs,

approved by Order of the Ministry of Education and Science of Russia dated April 5, 2017 No. 301.

7. The procedure for conducting state final certification for educational programs of higher education - bachelor's programs, specialty programs and master's programs, approved by Order of the Ministry of Education and Science of Russia dated June 29, 2015 No. 636.

Resources of the information and telecommunications network "Internet":

- 1. EBS of RUDN University and third-party EBS to which university students have access on the basis of concluded agreements:
- RUDN University Electronic Library System RUDN University Library System http://lib.rudn.ru/MegaPro/Web
- EBS "University Library Online" http://www.biblioclub.ru
- EBS Yurayt http://www.biblio-online.ru
- EBS "Student Consultant" www.studentlibrary.ru
- EBS "Doe" http://e.lanbook.com/
- 2. Databases and search engines:
- electronic fund of legal and normative-technical documentation http://docs.cntd.ru/
- Yandex search engine https://www.yandex.ru/
- Google search engine https://www.google.ru/
- SCOPUS abstract database <a href="http://www.elsevierscience.ru/products/scopus/">http://www.elsevierscience.ru/products/scopus/</a>

Educational and methodological materials for independent work of students in preparation for passing the State Examination, for performing the thesis and preparing the thesis for the defense\*:

- 1. Guidelines for the implementation and registration of the thesis for the EP VO "Pedagogy in Engineering".
- 2. The procedure for checking the VKR for the amount of borrowing in the Anti-Plagiarism system.
- 3. The procedure for conducting a state assessment test for the EP HE "Pedagogy in Engineering" using DOT, incl. graduate identification procedure.
- \* all educational and methodological materials for students' independent work are posted in accordance with the current procedure on the GIA page in TUIS.

# 8. ASSESSMENT TOOLKIT AND GRADING SYSTEM FOR EVALUATION OF GRADUATES' COMPETENCES LEVEL

The assessment materials and the grading system to evaluate the graduate's level of competences (competences in part) formation as the results of the higher education programme completion are specified in the Appendix to this syllabus.

#### **HEAD OF DUCATIONAL DEPARTMENT:**

Innovation management in industries chair educational department

O.E. Samusenko

name and surname

**HEAD OF HIGHER EDUCATION PROGRAMME:** 

Associate professor, Innovation management in industries chair

E.A. Kovaleva

position, department

name and surname