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**Federal State Autonomous Educational Institution for Higher Education  
PEOPLES' FRIENDSHIP UNIVERSITY OF RUSSIA NAMED AFTER PATRICE  
LUMUMBA  
(RUDN University)**

**Higher School of Industrial Policy and Entrepreneurship**

(faculty/institute/academy - the higher education program developer)

**STATE FINAL CERTIFICATION PROGRAM**

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

**38.04.02 Management**

(field of studies / speciality code and title)

**The study of the discipline is conducted as part of the professional program of higher education.**

**Engineering Management**

(name (track/specialization) of professional program of higher education)

**2023**

## **1. THE OBJECTIVES AND GOALS OF THE FINAL STATE EXAMINATION (GIA)**

The **goal** of the final state examination within the framework of the *Engineering Management* professional program of higher education is to assess the conformity of the students' training outcomes as the program results with the relevant requirements of the Federal State Educational Standard of the Higher Education or the RUDN University Educational Standards.

**The objectives** of the final state examination are:

- assessment of the quality of teaching basic humanitarian knowledge, natural science laws and phenomena necessary in professional activity;
- identifying the level of theoretical and practical readiness of a graduate to perform professional tasks in compliance with the qualifications received;
- establishing the degree of a person's inclination for self-development, improving his or her qualifications and skills;
- exploring the formation of a graduate's sustainable motivation for professional activities in compliance with the types of professional activities tasks provided for by the Federal State Educational Standard of the Higher Education or the RUDN University Educational Standards;
- assessing the level of graduates' ability to find organizational and managerial solutions in non-standard situations and evaluating graduates' readiness to bear responsibility for them;
- 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 specialists' training in compliance with the requirements of the Federal State Educational Standards of the Higher Education or the RUDN University Educational Standards.

## **2. REQUIREMENTS FOR HIGHER EDUCATION PROGRAM COMPLETION AND LEARNING OUTCOMES**

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

Upon completion of the Educational Program, the graduate is expected to acquire the following **Generic Competences (GCs)**:

<b>Code and descriptor of the generic competences</b>
GC-1. Ability to perform critical analysis of problematic situations based on the systemic approach and develop a plan of action
GC-2. Ability to manage a project at all lifecycle stages

GC-3 Capability to organize and lead the team's work developing a team strategy to achieve the goal.
GC-4. Capability to apply modern communication technologies on the official language of the Russian Federation and foreign language(s) for scholastic and professional interaction.
GC-5. Capability to analyze and consider the diversity of cultures in the process of intercultural interaction.
GC-6. Capability to determine and implement the priorities of his/her own activities and ways to improve it based on self-assessment.
GC-7. Capability to use digital technologies and methods of searching, processing, analyzing, storing and presenting information (in the professional field) in the context of digital economy and modern corporate information culture
GC-1. Ability to perform critical analysis of problematic situations based on the systemic approach and develop a plan of action

### **General Professional Competences (GPC):**

<b>Code and descriptor of the general professional competences</b>
GPC-1. Capability to solve professional tasks based on knowledge (at an advanced level) of economic, organizational and managerial theory, innovative approaches, generalization and critical analysis of management practices.
GPC-2. Capability to apply modern techniques and methods of data collection, advanced methods of their processing and analysis, including the use of smart information and analytical systems, in order to solve management and research tasks.
GPC-3. Capability to make reasonable organizational and managerial decisions independently, evaluate their operational and organizational efficiency, and social significance, ensure their implementation in terms of a complex (cross-cultural) and dynamic environment.
GPC-4. Capability to manage project and process activities in an organization using modern management practices, as well as leadership and communication skills, to identify and evaluate new market opportunities, develop strategies to create and develop innovative activities and corresponding business models of organizations.
GPC-5. Capability to generalize and evaluate critically scientific research in management and related fields, to carry out research projects.
GPC-6 Capability to evaluate critically the possibilities of digital technologies for professional tasks solving, to work with digital data, evaluate their sources and relevance

### **Professional Competencies (PC):**

<b>Code and descriptor of the professional competences</b>
PC-1 Capability to manage the efficiency of an investment project
PC-2 Capability to assess the business opportunities of an organization necessary for strategic changes in the organization

## FINAL STATE EXAMINATION PROCEDURE

The final state examination can be conducted both in the in-person format (students and the state examination committee are present 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 the in-person or DLT-facilitated final state examination is guided by the relevant local regulation of the RUDN University.

The final state examination within the framework of the higher education program "Engineering Management" includes:

- State Examination (SE);
- Defense of the graduation qualifying paper (Degree Thesis).

### 3. STATE EXAMINATION PROGRAM

The total workload of the State Exam is 3 credits.

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 program (no later than one calendar month before the start of the final state examination) shall familiarize 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 computer testing** within the final state examination is as follows:

The first stage of the state exam is conducted in the form of a test through the Mentor system, a random selection of 50 questions out of 131 possible is offered. The interdisciplinary state exam is conducted orally and includes 20 examination tickets. In addition to questions, practical tasks with the use of computers are provided.

**The procedure for the second stage of the exam is as follows:**

- 1) The state exam is conducted in writing;
- 2) The state exam includes 25 tickets. Each of them contains 3 questions.

The evaluation of the state exams results is carried out in accordance with the methodology set forth in the assessment toolkit that is specified in the Appendix to the final state examination program.

The evaluation of the state exams results is carried out in accordance with the methodology set forth in the assessment toolkit that is specified in the Appendix to the final state examination program.

#### **4. 5. REQUIREMENTS FOR THE GRADUATION QUALIFYING PAPER AND PROCEDURE FOR ITS DEFENSE**

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

The list of degree theses subjects offered to students for further work is approved by the order of the head of the educational division (faculty/institute/academy) that runs the higher education program, with the respective information delivered to the students by the program head no later than six months before the date of the final state examination start.

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

The student who has passed the state exam is admitted to the defense of 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), 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 programs) and the plagiarism check (in the "Anti-plagiarism" system). A review by the graduation qualifying paper supervisor shall be attached as well, with a specific emphasis made on the graduate's activities in the course of the degree thesis drafting.

No later than 14 days before the date of the thesis defense, 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 defense 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/specialization of the higher education program. 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 defense 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 final state examination program.

## 5. REQUIREMENTS FOR EQUIPMENT AND TECHNOLOGY SUPPORT FOR FINAL STATE EXAMINATION

✓ electronic computing hardware and other material resources of the practice base, as well as similar capabilities of the University:

✓ classrooms (offices) with workplaces for lectures (according to the number of students in class) and for seminars (according to the number of students in individual groups);

✓ a board,

✓ a stationary personal computer with Microsoft Office package;

✓ a multimedia projector;

✓ use of portable equipment – laptop and projector; ✓ screen (stationary or portable).

Classroom Type	Equipment of the Classroom	Specialized educational/laboratory equipment, software and materials for the study of the discipline (if necessary)
Lecture Hall	An auditorium for conducting lecture-type classes, equipped with a set of specialized furniture; a board (screen) and technical means of multimedia presentations.	21 workplace: system unit P4 C2D/3160 MHz MB/ 320 GB/DVD±RW/ LCD monitor projector 19"+ 1
Computer classroom	A computer classroom for conducting classes, group and individual consultations, continuous control and midterm certification, equipped with personal computers (2 pcs.), a blackboard (screen) and multimedia presentation technical means.	21 workplace: Celeron system unit/2600 MHz/1280 MB/ 40 GB/DVD ROM/ LCD monitor 17"+ 1 projector + Dot Wifi access
For independent work of students	A classroom for independent work of students (can be used for seminars and consultations), equipped with a set of specialized furniture and computers with access to EIEE.	420 cl.

Features of organizing educational activities for people with disabilities

The content of higher education and the conditions for the organization of training at RUDN for undergraduates with disabilities are determined by an adapted educational program (if necessary), and for disabled people also in accordance with an individual rehabilitation program for a disabled person. Training under the educational program of higher education of undergraduates with disabilities is carried out by RUDN taking into account the peculiarities of psychophysical development, individual capabilities and health status of such persons. RUDN has created special conditions for undergraduates with disabilities to receive higher education. Special conditions for obtaining higher education by undergraduates with disabilities are conditions of education, upbringing and development of such people, including the use of special educational programs and methods of teaching and upbringing, special textbooks, teaching aids and didactic materials, special technical means of collective and individual use, the provision of assistant services, providing undergraduates with the necessary technical assistance, conducting group and individual remedial classes, providing access to "RUDN" buildings and other conditions without which it is impossible or difficult for people with disabilities to master educational programs. In order to make higher education accessible to undergraduates with disabilities, RUDN provides: for undergraduates with hearing disabilities, sign language interpreter services and provision of appropriate sound means of reproducing information; for undergraduates with musculoskeletal disorders, material and technical conditions provide the possibility of unhindered access to classrooms, canteens, restrooms and other premises of "RUDN", as well as their stay on these premises (the presence of ramps, handrails, expanded doorways and other devices). The students (trainees) with disabilities could study together with other students (trainees) and in separate groups. Considering the special needs of undergraduates with disabilities, RUDN provides educational and lecture materials in electronic form. Considering the special needs of undergraduates with disabilities, the university provides an opportunity to study according to an individual plan.

## **6. INFRASTRUCTURE AND INFORMATIONAL SUPPORT NECESSARY FOR THE EXAMINATION IMPLEMENTATION**

*Main readings to prepare for the state exam and/or degree thesis defense:*

1. Geoffrey A. Jehle Advanced microeconomic theory [Text] : Textbook / Trans. from English. edited by V.P.Busygin, M.I.Levin, E.V.Pokatovich. - 2nd ed. - Moscow : Higher School of Economics, 2019. -733s.
2. Nureyev R. M. Course of microeconomics [Text] :Textbook for universities. - 2nd ed., ed. - M. : Norm : Infra-M, 2012. - 576 p.
3. Stepanova O.M. Macroeconomics [Text/electronic resource] : A course of lectures. - 2nd ed., ispr. And rev.; Soft text data. - M. : Publishing House of RUDN, 2019. - 174 p.
4. Econometrica [Electronic resource] :Textbook for universities/Ed . B. Utkin. - Electronic text data. - M. : Dashkov and K, 2018. - 564 p. : ill. - ISBN method of expert evaluation.

5. Eliseeva I. I. Econometrics [Text] : Textbook for masters / Edited by I.I.Eliseeva. - M. :Yurayt, 2012. - 453 p. - (Master's degree). - ISBN 9785-9916-1930-1.
6. Digital Economy : textbook / V.D. Markova. — M. : INFRA-M, 2018. — 186 p .
7. Effective decision-making / Transl. from English. by S.Druzhchenko. - 2nd ed. - Moscow : Alpina Business Books, 2019. - 184 p. - (Classics Harvard Business Review). - ISBN 9785-9614-0485-2 : 361.00.
8. Shamin R.V. Machine learning. A course of lectures.
9. Flach P. Machine learning.- M.: AFK Publishing House, 2017.- 400 p.
10. Korshunov Yu.S. Methods of making optimal managerial decisions [Text] : Textbook on the course of higher mathematics / Yu.S. Korshunov, N.V. Markova. - 2nd ed., rev. and add. - M. : RUDN Publishing House, 2018. - 46 p. - ISBN 978-5-20907590-5 : 41.45.
11. Yampolskaya D.O. Marketing analytics: technology and methods of conducting [electronic resource] : Textbook / D. O. Yampolskaya. - electronic text data. - Moscow : RUDN Publishing House, 2019. - 310 p. <http://lib.rudn.ru/ProtectedView/Book/ViewBook/2586>
12. Cloud technologies. Theory and practice. Monakhov D.N., Monakhov N.V., Pronchev G.B., Kuzmenkov D.A. — M.: MAKS Press, 2018. — 128 p. — ISBN 978-5-317-04400-8
13. Babaskin S.Ya. Innovative project: selection methods and risk analysis tools : Textbook / S.Ya. Babaskin. - M. : Delo, 2019. - 240 p. : ill. - (Educational innovations). - ISBN 978-5-7749-0533-1 : 0.00.

Additional readings to prepare for the state exam and/or degree thesis defense:

1. Collection of problems in microeconomics. To the "Course of Microeconomics" by R.M.Nureyev [Text] / Chief editor R.M. Nureyev. - M. : Norm : INFRA-M, 2012. - 432 p.
2. Stepanova O.M. Workbook on macroeconomics [Electronic resource] : Textbook. - M. : Publishing House of RUDN, 2009. - 89 p.
3. Artamonov N. V. Introduction to Econometrics : A course of lectures. - M. : ICNMO, 2011. - 204 p.
4. Ivanov V.V., Malinetsky G.G. Digital Economy: Myths, Reality, perspective. – Moscow: Russian Academy of Sciences, 2017. – 64 P.
5. Borisov A.N. Babaskin S.Ya. Innovative project: selection methods and risk analysis tools : Textbook / S.Ya. Babaskin. - M. : Delo, 2009. - 240 p. : ill. - (Educational innovations). - ISBN 978-5-7749-0533-1 : 0.00. Decision-making based on unprecise models [Text] : Application examples / A.N. Borisov. - Riga : Zinatne, 1990. - 184 p. : Fig. - ISBN 5-7966-0459-7 : 1.60.
6. Henrik Brink, Joseph Richards, Mark Feverolf. Machine learning. – Moscow: Peter, 2017. – 336 p.



7. Borisov A.N. Decision-making based on unprecise models [Text] : Application examples / A.N. Borisov. - Riga : Zinatne, 1990. - 184 p. : fig. - ISBN 57966-0459-7 : 1.60.
8. Scott David Meerman. New rules of marketing and PR: How to Use Content Marketing, Podcasting, Social Media, AI, Live Video, and Newsjacking to Reach Buyers Directly [Text] : Translated from English / Scott David Meerman. - 2nd ed. - Moscow : Alpina Publisher, 2013.
9. Grebnev E.V. Cloud services. A view from Russia. Moscow: CNews, 2011. — 282 p.
10. Barton T., Shenkir W., Walker P. Making Enterprise Risk Management Pay Off. How Leading Companies Implement Risk Management. Moscow: Williams, 2008. — 208 p. — ISBN 978-5-8459-1345-6.

*Resources of the Internet information and telecommunication network:*

1. Electronic libraries (EL) of RUDN University and other institutions, to which university students have access on the basis of concluded agreements
  - Electronic Library system RUDN – ELS RUDN  
<http://lib.rudn.ru/MegaPro/Web>
  - EL "University Library Online" <http://www.biblioclub.ru>
  - EL "Yurayt" <http://www.biblio-online.ru>
  - EL "Student Consultant" [www.studentlibrary.ru](http://www.studentlibrary.ru)
  - EL "Lan" <http://e.lanbook.com/>
  - EL "Trinity Bridge"
2. Databases and search engines:
  - electronic foundation 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  
<http://www.elsevierscience.ru/products/scopus/>

\*-The training toolkit and guidelines for the student's self-studies are placed on the final state examination page in the **university telecommunication training and information system** under the set procedure.

## **7. 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 formation as the results of the higher education program completion are specified in the Appendix to final state examination program.

\* - The assessment materials and the grading system are formed on the basis of the requirements of the relevant local regulation of RUDN University (regulations / order).

**HEAD OF EDUCATIONAL DEPARTMENT:**

Head of the Applied Economics Department  A.A. Chursin

**Program Manager**

Head of the Applied Economics Department  A.A. Ostrovskaya

Annex

The total score for the degree theses is deduced by the State Examination Board members on a collegial basis, considering the conformity of the content of the declared topic, the depth of its disclosure, the conformity of the design to accepted standards, the student's ability to demonstrate his own vision of the problem and the ability to defend it in a motivated manner, possession of theoretical material, the ability to present it competently and to answer the questions posed in a reasoned manner. The degree theses are evaluated by the State Examination Board members at a closed meeting and are announced to the graduate students on the same day after the signing of the relevant minutes of the commission meeting.

**The scale of the final assessment of the master's final theses**

The final score is the sum of the points received for the completion and defense of the bachelor's final theses. The final score is set based on the following criteria:

- independence of the study, the subject of the study - max 15 points;

- the reliability of the conclusions obtained - max 20 points;
- registration - max 15 points;
- report (including the PowerPoint slides) - max 20 points;
- answers to additional questions - max 20 points;
- "overall impression" (for the originality of the research, practical significance, theoretical elaboration of the problem) - max 10 points;
- the final score is max 100 points.

<i>Score</i>	<i>Min.</i>	<i>Max.</i>
<b>A (5)</b>	95	100
<b>B (5)</b>	86	94
<b>C (4)</b>	69	85

<i>Score</i>	<i>Min.</i>	<i>Max.</i>
<b>D (3)</b>	61	68
<b>E (3)</b>	51	60
<b>F (2)</b>	0	50