

APPROVED

Academic Council

of the educational program

“Business Analytics and Big Data Systems”

25.08.2023

### **Practice program**

Educational program “Business Analytics and Big Data systems”

*Developed by the Academic Council  
of the “Business Analytics and Big Data Systems” Programme  
for students of the 2023 enrollment year*

### **Abstract**

Practical training in the educational program “Business Analytics and Big Data Systems” sets the main goal for students to perform certain types of work related to their future professional activities and aimed at the formation, consolidation, development of practical skills and competencies in the profile of the educational program. Participation in such elements of practical training as a Consulting Project, Term Paper, Industrial Practice, Applied Project, Preparation of the final qualification work contributes to the formation, consolidation, development of practical skills and competencies in the profile of the educational program, including those defined by the competence matrix of the educational program.

The internship program includes a description of the elements of the curriculum of the educational program, organized in the form of practical training and grouped in the module “Practice” of the curriculum.

### **Section 1. General information**

Year	Sort of Practice	Type of Practice (PTE)	Attribute	Number of credits per 1 student	Number of academic hours per 1 student	Implementation period
1	Project	Consulting Project	Mandatory	3	114	3-4 modules
1	Scientific research	Term Paper	Mandatory	6	228	2-4 modules
2	Professional	Industrial Practice	Mandatory	6	228	3 module, 8 weeks
2	Project	Applied Project	Mandatory	3	114	1-2 modules
2	Scientific research	Preparation of the final qualification work	Mandatory	15	570	2-4 modules

## **Section 2. Description of the Practice content**

### **2.1. Consulting Project**

#### **2.1.1. Purpose, objectives, prerequisites of the PTE.**

**The purpose** of the implementation of the PTE is to integrate knowledge, skills and abilities acquired during training on the Programme “Business Analytics and Big Data Systems” and solving an applied problem from the subject area of the Programme.

Students of the Programme “Business Analytics and Big Data Systems” choose (including at the HSE “Project Fair”) research and applied projects, group or individual, related to the subject of the educational program, corresponding to the goals of studying at the Programme and helping students develop the skills and competencies provided for in the HSE Educational Standard, from among those recommended by the Academic Supervisor of the Programme.

**The tasks** of the PTE are to diagnose problems in accordance with the assigned tasks of the project, conduct the necessary research and analytical work and develop recommendations together with the initiator of the PTE to solve the tasks.

**Prerequisites** for passing the PTE “Consulting Project” are not required.

#### **2.1.2. Dates of the PTE control points.**

Signing the assignment for the student to complete – 20.01.

Providing an interim version of the report – 20.04.

Provision of the final report – 03.06.

Project defense – from 04.06 to the end of the session of the 4<sup>th</sup> module.

#### **2.1.3. Content and features of the development of the PTE.**

The Academic Supervisor of the Programme has the opportunity to block a project proposal for students of his educational program if the project does not meet the above goals and objectives.

As part of the implementation of the PTE, an introductory meeting of the student (or group of students) with the initiator of the PTE, the head of the PTE is held to discuss the program, calendar, rules and evaluation criteria for the Consulting Project. An initial meeting is held, within the framework of which the goals and objectives of the project are set, the basic principles of communication between the initiator of the PTE, the head of the PTE and the student (group of students) are discussed, the key requirements for the results of the project are determined, as well as the expected results. The student (group of students) forms a mandatory summary report on the meeting with the initiator of the PTE, the head of the PTE with confirmation or necessary change of the topic as a result of the discussion of these issues, as well as a brief work plan for the project, submitted to the Academic Supervisor of the Programme and the head of the PTE.

According to the control points, the student (group of students) conducts an interim presentation of the work performed and the results obtained on the Consulting Project to the head of the PTE, Academic Supervisor of the Programme and the initiator of the PTE, on the basis of which the student (group of students) is provided with recommendations for improving / changing the work on the project.

After completing the work and presenting the results to the initiator of the PTE, the head of the PTE and (if possible) the academic head of the OP, the student (group of students) submits to the initiator of the PTE and the head of the PTE a report on the implementation of the Consulting Project.

The project activity of students is regulated by the Regulations on Practical Training of Students under Core Bachelor's, Specialist and Master's Programmes at HSE University (<https://www.hse.ru/en/docs/528225767.html>).

#### 2.1.4. Evaluation and reporting of the PTE.

As reporting on the PTE, it is supposed to submit a report on the implementation of the Consulting Project, as well as conduct a presentation-defense of the results obtained on the project before the initiator of the PTE, the head of the PTE and (if possible) the Academic Supervisor of the Programme.

The report on the implementation of the Consulting Project should correspond to the following structure:

1. Title page;
2. Table of contents;
3. General description of the Project:
  - Initiator, head of the Project;
  - Type of the Project;
  - Place of work on the Project (name of the organization, structural unit/other).
4. Body (the main part):
  - Description of the implementation of the Project's work;
  - Description of the Project's results (product);
  - Description of the used methods and technologies;
  - Description of student's role in the Project team (required for a group project)\*;
  - Description of challenges and difficulties encountered during the Project (if it is valuable in the context of the project goal)\*;
5. Conclusion (evaluation of individual results of the Project, formed / developed competencies);
6. Project's results (text, photographs, links, and other materials confirming the result)<sup>1</sup>.
7. Appendix (if necessary: presentation, graphics, diagrams, tables, algorithms, illustrations, reviews, etc.)\*.

The “\*” marks the items that can be optionally presented in the report.

PTE evaluation formula:

$$Q_{final} = 0,3 \times Q_{head} + 0,2 \times Q_{initiator} + 0,5 \times Q_{report}.$$

The initiator of the PTE can also be the Academic Supervisor of the Programme. Report design is carried out per the requirements defined in the methodological recommendations on written works for students of the “Business Informatics” area of study.

The reporting materials are evaluated according to the scale given in the table:

Report evaluation criteria	Grade
A solid, elaborated, logically stated text without internal contradictions, corresponding to the rules of design of written	<i>Excellent, 8-10 points</i>

<sup>1</sup> Except for the cases where the result cannot be posted for reasons of secrecy, commercial secrets

works, the requirements of the head. The tasks have been completed in full and correctly, the problem is articulated, the work is original and contributes to the increment of knowledge in a specific problem area. The proposed solution is characterized by scientific and/or practical novelty, is a unique outstanding result for the industry (for a grade 10 points).	
A well-developed and stated text without significant internal contradictions, corresponding to the rules for the design of written works, the requirements of the head. Almost all tasks have been completed in due volume.	<i>Good, 6-7 points</i>
Sometimes the text is incoherent, there are internal contradictions. Incomplete compliance with the rules of design of written works, the requirements of the head. Some of the tasks were not completed/were not completed in sufficient volume. There are gross errors, low originality of the text, lack of full-fledged conclusions.	<i>Satisfactory, 4-5 points</i>
The text is incoherent. There are significant contradictions. Does not comply with the rules of design of written works, the requirements of the head of the PTE / initiator of the PTE. Most of the tasks have not been completed.	<i>Unsatisfactory, 0-3 points</i>

### **2.1.5. Resources used in the implementation of the PTE.**

In the process of passing the PTE, students can use information technologies, including automation tools for design and software development used in the main organization, Internet technologies, etc.

The material and technical support of the PTE is reflected in the contracts for practical training with individual organizations. The specified material and technical support must meet the current sanitary and fire safety standards, as well as safety requirements during work.

### **2.1.6. Features of completing tasks during the implementation of the PTE.**

In the conditions of restrictive or other measures, the implementation of the PTE takes place in a remote format in accordance with the instructions of the regulatory authorities of the HSE and the Russian Federation.

Other features of performing PTE tasks under restrictive measures depend on the nature of the restrictions and are specified by the governing bodies of the University, the GSB or the educational program.

### **2.1.7. Other materials and other information.**

During the work on the Consulting Project and after its completion, the student (group of students) has no right to disclose information attributed by the initiator of the PTE to official and commercial secrets. In case of a request from the initiator of the PTE, students must sign the relevant documents on non-disclosure of confidential information.

## **2.2. Term Paper**

### **2.2.1. Purpose, objectives, prerequisites of the PTE.**

**The purpose** of the PTE “Term Paper” is to deepen the knowledge and skills acquired by the student during theoretical and practical classes in the program “Business Analytics and Big Data Systems”.

**The tasks** of the PTE “Term Paper” include the following:

- to instill the skills of self-study of the material on the topic of the Term Paper;
- develop the competencies of analytical, research and project activities;
- improve the skills of working with academic information and empirical data;
- develop academic writing skills;
- prepare the student to conduct research within the framework of the Thesis Paper in the 2nd year.

**Prerequisites** for passing the PTE “Term Paper” are not required.

### **2.2.2. Dates of the PTE control points.**

The main control points are indicated in Appendix 3 Timetable for Master’s Term Papers and Thesis Works. In addition to them, the following control points are introduced:

The signing of the assignment for the student – no later than November 20 of the current academic year.

The first control point (literature review, description of the subject area, problem statement) – in agreement with the supervisor, no later than January 20 of the current academic year.

The second control point (description and implementation of the solution architecture) – in agreement with the supervisor, no later than March 20 of the current academic year.

Provision of an interim version – in agreement with the supervisor, no later than April 30 of the current academic year.

Provision of the final text/report – 4<sup>th</sup> module of the current academic year.

### **2.2.3. Content and features of the development of the PTE.**

PTE “Term Paper” can be performed in one of the following two formats:

Research work – analysis and generalization of theoretical and empirical material, designed to promote the consolidation and manifestation of knowledge and skills acquired in the process of mastering the educational program.

Course project – reasoned solution to a practical problem based on a systematic analysis of the selected object and subject, problem (phenomenon).

When using any of these formats, the PTE aims to consolidate and demonstrate the knowledge and skills acquired in the process of mastering the Master's degree Programme “Business Analytics and Big Data Systems”.

PTE “Term Paper” can have the form:

- individual work performed by one student;
- group work performed on a single topic by a group of students in the number of 2 to 5 people, each of whom develops a certain part of the work independently.

The offer of the topics of the PTE “Term Paper”<sup>2</sup> for students is formed by departments and other units, and it is also possible to offer the topics of the PTE “Term Paper” from employers and initiative topics from students. The topics are approved by the Academic Supervisor / Academic Council (if any) of the Programme. Proposals on topics should have the following structure:

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<sup>2</sup> For more information, see Appendix 4 “Requirements for Term Papers and Theses Written by Students in Bachelor’s and Master’s Programmes at the Graduate School of Business of National Research University Higher School of Economics”

- an approximate topic of work in Russian and English;
- the proposed supervisor of the PTE “Term Paper” (full name, position, scientific degree, place of work).

The schedule of the PTE “Term Paper” is coordinated by the student with the supervisor of the PTE “Term Paper”, appointed in the order, and should include the following control points:

- preparation of the project (plan) of work. At this stage, the student must formulate the relevance, working hypothesis / idea of the work, identify the problem to be solved by the work, a list of the main sources for the performance of this work, the expected result and propose the basic structure of the work;
- description of the proposed solution and implementation of the main architectural components of the solution;
- presentation of the first version of the finished work to the supervisor, with subsequent adjustment of the work (if necessary);
- presentation of the final version of the work to the supervisor;
- uploading the work to the LMS system for further verification of the work for plagiarism. It is mandatory for the student to upload the final version of the work in an electronically un-scanned form to a special module for coursework support in the LMS;
- evaluation by the supervisor of the work and writing a review<sup>3</sup>. The supervisor is obliged to provide the Study Office, where the student studies, with a review of the work within a calendar week after receiving the final version of the work;
- submission of the final version of the work to the Study Office. The final version of the work is submitted by the student to the Study Office in a paper version, with an annotation, with a review of the supervisor, a certificate or a registration sheet from the LMS system within the time limit established by the order;
- defense of the work (by the decision of the Academic Supervisor of the Programme with the proposal of the composition of the commission for the defense). Defense begins with the presentation of the results of the work. For term papers, 10 minutes are allotted for the performance. After completing the report, the members of the commission ask questions.

In order to monitor the implementation of the schedule and compliance with the control points of the PTE “Term Paper”, a corresponding summary table is prepared, which is filled in by the supervisor.

#### **2.2.4. Evaluation and reporting of the PTE.**

PTE “Term Paper” is evaluated according to a 10-point system in accordance with the criteria:

- correspondence of the content of the Term Paper to the approved topic ( $\tau_1$ );
- relevance of the research topic, justification of its choice ( $\tau_2$ );
- fulfillment of the purpose and objectives of the Term Paper, correctness of the formulated results and conclusions and their compliance with the purpose and objectives of the work ( $\tau_3$ );
- originality and novelty of the Term Paper ( $\tau_4$ );
- depth of analysis, ability to understand the problems involved ( $\tau_5$ );
- literacy, consistency in the presentation of the material ( $\tau_6$ );

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<sup>3</sup> For more information, see Appendix 4 “Requirements for Term Papers and Theses Written by Students in Bachelor’s and Master’s Programmes at the Graduate School of Business of National Research University Higher School of Economics”

- design of the work<sup>4</sup> ( $\tau_7$ );
- execution of the schedule and compliance with control points ( $\tau_8$ );
- evaluation of the defense commission ( $\tau_{def}$ ).

The first 7 criteria, as well as the defense commission criteria, are evaluated according to a 10-point system, the eighth criterion is a correction factor in the interval [0,1]. The first eight criteria are evaluated by the supervisor.

The evaluation formula ( $\Psi$ ) for the Term Paper:

$$\Psi = 0.5 \times \tau_8 \frac{\sum_{i=1}^7 \tau_i}{7} + 0.5 \times \tau_{def}.$$

If the PTE “Term Paper” is performed by a group of students, then the group provides a single text of the work, but the assessment is determined individually, taking into account the overall assessment of the text of the work and individual answers to questions during the defense. A student who has received an unsatisfactory grade for the PTE “Term Paper” is considered to have academic debt. He is obliged to liquidate this academic debt in accordance with the procedure established by the local regulations of the HSE University, eliminating comments and, if necessary, finalizing the text of the Term Paper; at the same time, the topic (supervisor) can be changed. Text design of the Term Paper is carried out per the requirements defined in the methodological recommendations on written works for students of the “Business Informatics” area of study.

The topic is changed by order of the Director of the Graduate School of Business / Academic Supervisor of the Programme. For students who have academic debt on the PTE “Term Paper”, the procedure for retaking is regulated by the Regulations for Interim and Ongoing Assessments of Students at National Research University Higher School of Economics.

The assessment for passing the PTE “Term Paper” is put down in the statement. The assessment results are used in the rating system for evaluating the student’s academic results.

#### **2.2.5. Resources used in the implementation of the PTE.**

In the process of passing the PTE, students can use information technologies, including automation tools for design and software development, Internet technologies, etc.

The material and technical support of the PTE is reflected in the contracts for practical training with individual organizations. The specified material and technical support must meet the current sanitary and fire safety standards, as well as safety requirements during work.

#### **2.2.6. Features of completing tasks during the implementation of the PTE.**

In the conditions of restrictive or other measures, the implementation of the PTE takes place in a remote format in accordance with the instructions of the regulatory authorities of the HSE and the Russian Federation.

Other features of performing PTE tasks under restrictive measures depend on the nature of the restrictions and are specified by the governing bodies of the University, the GSB or the educational program.

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<sup>4</sup> For more information, see Appendix 4 “Requirements for Term Papers and Theses Written by Students in Bachelor’s and Master’s Programmes at the Graduate School of Business of National Research University Higher School of Economics”

### **2.2.7. Other materials and other information.**

The preparation of students' term work is regulated by the Requirements for Term Papers and Theses Written by Students in Bachelor's and Master's Programmes at the Graduate School of Business of National Research University Higher School of Economics.

## **2.3. Industrial Practice**

### **2.3.1. Purpose, objectives, prerequisites of the PTE.**

The Industrial Practice of the masters of the Programme “Business Analytics and Big Data Systems” is carried out **in order to** collect, analyze and generalize scientific material, develop original scientific proposals and scientific ideas for conducting research in the framework of preparing a master's thesis, obtaining skills for independent research work, practical participation in research work.

**The objectives** of the Industrial Practice are:

- research/diagnostics of problems and features of a specific organization – the place of internship;
- acquisition of practical skills in the organization and conduct of research work (research planning, development of research tools, research, processing and analysis of research results);
- obtaining skills of independent work in the field of applied and scientific research;
- justification of the choice of the topic of the master's thesis (its relevance, review of the literature on the chosen topic);
- collection of materials for the subsequent writing of a master's thesis on a pre-selected topic.

**Prerequisites** for passing the PTE “Industrial Practice” are not required.

### **2.3.2. Dates of the PTE control points.**

Signing the assignment for the student – no later than the end of the 2nd module.

Provision of an interim version of the report – no later than the end of the 3rd module.

Provision of the final text/report – session of the 3<sup>rd</sup> module.

### **2.3.3. Content and features of the development of the PTE.**

The Industrial Practice is conducted for 2nd year students of the master's Programme “Business Analytics and Big Data Systems”, in accordance with the approved curriculum of the Graduate School of Business. The Industrial Practice is carried out mainly under contracts with legal entities.

The place of the Industrial Practice can be chosen by the student independently or offered by the Graduate School of Business. For students interested in internship in foreign organizations, such an opportunity can be provided if there are relevant agreements at the time of the internship. The decision to provide the Graduate School of Business with internship places is determined by the relevant regulatory documents and contracts concluded between the HSE University and the organization (Russian or foreign) that accepts students for research practice.

It is allowed to pass an internship at the student's place of work if he/she works in an organization whose activities coincide with the profile of his/her academic specialization. In this case, students submit to the Study Office the consent of the organization to provide a place for internship with an indication of the timing of its implementation.



According to the decision of the Academic Council of the Graduate School of Business dated 19.05.2022, the criteria for the independent choice of the place of the Industrial Practice were determined:

- it is not allowed to practice in an individual entrepreneur, in your own company or in the company of a relative (heirs of the first and second stage);
- the number of employees of the organization is at least 50 people, the minimum value of income for the previous calendar year is from 100 million rubles, or, if this criterion is not met, the organization is part of an International/Russian network of firms;
- the duration of the business is at least 3 years.

If the organization does not meet the specified criteria, the student must receive written approval from the Academic Supervisor of the Programme with justification for the possibility of internship in the declared organization.

The form of internship for students is discrete, by allocating a continuous period of study time in the calendar schedule for its implementation. For internship, each student and his/her research supervisor of the Thesis Paper develops an individual task with the possibility of its subsequent adjustment during the course of internship. The assignment for the Industrial Practice should correspond to its specifics, specific goals and objectives. The head of the Industrial Practice from the organization develops a work schedule (plan) for the internship.

During the internship, students should acquire the skills of collecting and analyzing information and empirical data. The sources of information can be:

- statistical databases;
- publications in periodical scientific journals;
- publications in professional journals;
- regulatory legal acts;
- internal documentation of organizations.

The Industrial Practice also implies data collection for the Thesis Paper, which is an applied project. In this case, the analytical component of research practice consists in:

- conducting an analysis of the macroenvironment and the industry environment of a particular organization;
- analysis of the existing management system of the organization and information systems, as well as business processes or business model;
- identification of the main advantages and disadvantages in the management of the organization and its information systems;
- development of research tools in accordance with the specifics of the topic and the objectives of the master's thesis;
- collecting empirical data and conducting research.

During the internship, the student, in agreement with the supervisor, identifies sources of information and conducts a preliminary review of the literature on the selected subject, draws up a detailed plan of the master's thesis, corrects the final formulation of the topic of the master's thesis, presents the supervisor with an overview of the materials of scientific work, determines the elements of research that have signs of scientific novelty.

Throughout the entire period of the Industrial Practice, the student must, in accordance with an individual task, collect and process the necessary primary research

material, and then submit it in the form of a completed final report on the internship to his supervisor.

#### **2.3.4. Evaluation and reporting of the PTE.**

For the Industrial Practice, each student and his supervisor develop an individual task with the possibility of its subsequent adjustment during the passage of professional training practice. The assignment for professional training practice should correspond to its specifics, specific goals and objectives. The head of the production practice from the organization develops a work schedule (plan) for conducting the production practice.

At the end of the internship, students provide:

- the report on the Industrial Practice (20-25 pages) with the signatures of the head of the practice from the organization and the supervisor (see the approximate structure in Appendix 1);
- a stamped review from the organization where the Industrial Practice was conducted (signed by the head of the practice on behalf of the organization), containing a description of the work done by the student and an assessment of its quality.

The report on the Industrial Practice should contain:

- characterization and analysis of the main activity of the organization – the place of the Industrial Practice (its history, stages of development, areas of activity, organizational structure, etc.) ( $\theta_1$ );
- description of the service (structural unit, divisions) in which (with which) the student worked directly during the internship (including on the basis of studying the documents regulating the work of the service) ( $\theta_2$ );
- enumeration of the tasks assigned to the student by the head of the Industrial Practice on behalf of the organization ( $\theta_3$ );
- description of the work done in accordance with the practice plan ( $\theta_4$ );
- the empirical part of the master's thesis: the results of the research work carried out, ready for inclusion in the master's thesis ( $\theta_5$ ).

When evaluating the report on the Industrial Practice, the quality of the design of the text and graphics of the report is also taken into account ( $\theta_6$ ), as well as the grade from the head of the Industrial Practice from the organization ( $\theta_7$ ).

The final grade ( $\mathcal{E}$ ) for the report on the Industrial Practice is evaluated according to the following formula by the relevant commission under the guidance of the Academic Supervisor of the Programme:

$$\mathcal{E} = 0,05\theta_1 + 0,05\theta_2 + 0,1\theta_3 + 0,2\theta_4 + 0,3\theta_5 + 0,1\theta_6 + 0,2\theta_7.$$

The final grade for passing the Industrial Practice is put down in the statement. The assessment results are used in the rating system for evaluating the student's academic results. Text design of the Term Paper is carried out per the requirements defined in the methodological recommendations on written works for students of the "Business Informatics" area of study.

#### **2.3.5. Resources used in the implementation of the PTE.**

During the period of the Industrial Practice, students are subject to the rules of labor protection and safety, as well as the rules of internal labor regulations in force in organizations – places of the Industrial Practice. The material and technical support of the Industrial Practice is reflected in the contracts for practical training with

organizations. The specified material and technical support must meet the current sanitary and fire safety standards, as well as safety requirements during work.

In the process of passing the PTE, students can use information technologies, including automation tools for design and software development used in the main organization, Internet technologies and other software packages necessary for the effective organization of work in professional training practice.

#### **2.3.6. Features of completing tasks during the implementation of the PTE.**

Depending on the epidemiological situation, restrictive measures imposed by federal and local authorities against infection spread, as well as the operating mode of the enterprise – the place of the Industrial Practice, it is allowed to undergo the Industrial Practice remotely. Such a mode can be used for consultations with the head of the internship, submission of the report and passing the intermediate student evaluation.

Other features of performing PTE tasks under restrictive measures depend on the nature of the restrictions and are specified by the governing bodies of the University, the GSB or the educational program.

### **2.4. Applied Project**

#### **2.4.1. Purpose, objectives, prerequisites of the PTE.**

**The purpose** of the implementation of the PTE is to integrate knowledge, skills and abilities acquired during training on the Programme “Business Analytics and Big Data Systems” and solving an applied problem from the subject area of the Programme.

Students of the Programme “Business Analytics and Big Data Systems” choose (including at the HSE “Project Fair”) research and applied projects, group or individual, related to the subject of the educational program, corresponding to the goals of studying at the Programme and helping students develop the skills and competencies provided for in the HSE Educational Standard, from among those recommended by the Academic Supervisor of the Programme.

**The tasks** of the PTE are to diagnose problems in accordance with the assigned tasks of the project, conduct the necessary research and analytical work and develop recommendations together with the initiator of the PTE to solve the tasks

**Prerequisites** for passing the PTE “Applied Project” are not required.

#### **2.4.2. Dates of the PTE control points.**

Signing the assignment for the student to complete – 10.10.

Providing an interim version of the report – 20.11.

Provision of the final report – 20.12.

Project defense – until 12.01.

#### **2.4.3. Content and features of the development of the PTE.**

The Academic Supervisor of the Programme has the opportunity to block a project proposal for students of his educational program if the project does not meet the above goals and objectives.

As part of the implementation of the PTE, an introductory meeting of the student (or group of students) with the initiator of the PTE, the head of the PTE is held to discuss the program, calendar, rules and evaluation criteria for the Project. An initial meeting is held, within the framework of which the goals and objectives of the project are set, the basic principles of communication between the initiator of the PTE, the head of the PTE and the student (group of students) are discussed, the key requirements for the results of the project are determined, as well as the expected results. The student (group of students) forms a mandatory summary report on the meeting with the initiator of the

PTE, the head of the PTE with confirmation or necessary change of the topic as a result of the discussion of these issues, as well as a brief work plan for the project, submitted to the Academic Supervisor of the Programme and the head of the PTE.

According to the control points, the student (group of students) conducts an interim presentation of the work performed and the results obtained on the Project to the head of the PTE, Academic Supervisor of the Programme and the initiator of the PTE, on the basis of which the student (group of students) is provided with recommendations for improving / changing the work on the project.

After completing the work and presenting the results to the initiator of the PTE, the head of the PTE and (if possible) the academic head of the OP, the student (group of students) submits to the initiator of the PTE and the head of the PTE a report on the implementation of the Project.

The project activity of students is regulated by the Regulations on Practical Training of Students under Core Bachelor's, Specialist and Master's Programmes at HSE University (<https://www.hse.ru/en/docs/528225767.html>).

#### **2.4.4. Evaluation and reporting of the PTE.**

As reporting on the PTE, it is supposed to submit a report on the implementation of the Consulting Project, as well as conduct a presentation-defense of the results obtained on the project before the initiator of the PTE, the head of the PTE and (if possible) the Academic Supervisor of the Programme.

The report on the implementation of the Consulting Project should correspond to the following structure:

1. Title page;
2. Table of contents;
3. General description of the Project:
  - Initiator, head of the Project;
  - Type of the Project;
  - Place of work on the Project (name of the organization, structural unit/other).
4. Body (the main part):
  - Description of the implementation of the Project's work;
  - Description of the Project's results (product);
  - Description of the used methods and technologies;
  - Description of student's role in the Project team (required for a group project)\*;
  - Description of challenges and difficulties encountered during the Project (if it is valuable in the context of the project goal)\*;
5. Conclusion (evaluation of individual results of the Project, formed / developed competencies);
6. Project's results (text, photographs, links, and other materials confirming the result)<sup>5</sup>.
7. Appendix (if necessary: presentation, graphics, diagrams, tables, algorithms, illustrations, reviews, etc.)\*.

The “\*” marks the items that can be optionally presented in the report.

PTE evaluation formula:

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<sup>5</sup> Except for the cases where the result cannot be posted for reasons of secrecy, commercial secrets

$$Q_{final} = 0,3 \times Q_{head} + 0,2 \times Q_{initiator} + 0,5 \times Q_{report}.$$

The initiator of the PTE can also be the Academic Supervisor of the Programme. Report design is carried out per the requirements defined in the methodological recommendations on written works for students of the “Business Informatics” area of study.

The reporting materials are evaluated according to the scale given in the table:

<b>Report evaluation criteria</b>	<i>Grade</i>
A solid, elaborated, logically stated text without internal contradictions, corresponding to the rules of design of written works, the requirements of the head. The tasks have been completed in full and correctly, the problem is articulated, the work is original and contributes to the increment of knowledge in a specific problem area. The proposed solution is characterized by scientific and/or practical novelty, is a unique outstanding result for the industry (for a grade 10 points).	<i>Excellent, 8-10 points</i>
A well-developed and stated text without significant internal contradictions, corresponding to the rules for the design of written works, the requirements of the head. Almost all tasks have been completed in due volume.	<i>Good, 6-7 points</i>
Sometimes the text is incoherent, there are internal contradictions. Incomplete compliance with the rules of design of written works, the requirements of the head. Some of the tasks were not completed/were not completed in sufficient volume. There are gross errors, low originality of the text, lack of full-fledged conclusions.	<i>Satisfactory, 4-5 points</i>
The text is incoherent. There are significant contradictions. Does not comply with the rules of design of written works, the requirements of the head of the PTE / initiator of the PTE. Most of the tasks have not been completed.	<i>Unsatisfactory, 0-3 points</i>

#### **2.4.5. Resources used in the implementation of the PTE.**

In the process of passing the PTE, students can use information technologies, including automation tools for design and software development used in the main organization, Internet technologies, etc.

The material and technical support of the PTE is reflected in the contracts for practical training with individual organizations. The specified material and technical support must meet the current sanitary and fire safety standards, as well as safety requirements during work.

#### **2.4.6. Features of completing tasks during the implementation of the PTE.**

In the conditions of restrictive or other measures, the implementation of the PTE takes place in a remote format in accordance with the instructions of the regulatory authorities of the HSE and the Russian Federation.

Other features of performing PTE tasks under restrictive measures depend on the nature of the restrictions and are specified by the governing bodies of the University, the GSB or the educational program.

#### **2.4.7. Other materials and other information.**

During the work on the Project and after its completion, the student (group of students) has no right to disclose information attributed by the initiator of the PTE to official and commercial secrets. In case of a request from the initiator of the PTE, students must sign the relevant documents on non-disclosure of confidential information.

### **2.5. Preparation of the final qualification work**

#### **2.5.1. Purpose, objectives, prerequisites of the PTE.**

**The purpose** of the PTE “Preparation of the final qualification work” is the full realization of the knowledge and skills acquired by the student during theoretical and practical classes in the program “Business Analytics and big Data systems”.

**The objectives** of the PTE “Preparation of the final qualification work” include the following:

- use the acquired skills of independent study of the material on the topic of the final qualifying work;
- capitalize on the acquired competencies of analytical, research and project activities;
- use the acquired skills of working with academic information and empirical data;
- use the acquired academic writing skills;
- prepare the student for the defense of the Thesis Paper.

**Prerequisites** for passing the PTE “Preparation of the final qualification work” are not required.

#### **2.5.2. Dates of the PTE control points.**

The main control points are indicated in Appendix 3 Timetable for Master’s Term Papers and Thesis Works. In addition to them, the following control points are introduced:

The signing of the assignment for the student – no later than November 20 of the current academic year.

The first control point (literature review, description of the subject area, problem statement) – in agreement with the supervisor, no later than January 20 of the current academic year.

The second control point (description and implementation of the solution architecture) – in agreement with the supervisor, no later than March 20 of the current academic year.

Provision of an interim version – in agreement with the supervisor, no later than April 20 of the current academic year.

Provision of the final text – 4<sup>th</sup> of the current academic year.

#### **2.5.3. Content and features of the development of the PTE.**

The result of mastering the research practice of the 2nd course “Preparation of the final qualification work” is the preparation and defense of the final qualification work (FQW).

The FQW is a mandatory element of the educational program, a form of research, project work of the student. The defense of the FQW is included in the mandatory part

of the State final certification. The FQW is carried out in the form of a master's thesis. The master's thesis should demonstrate the necessary professional qualifications of graduates in the field of research, management, entrepreneurial and/or consulting activities. The FQW should be written on the basis of carefully researched scientific, educational or professional literature on the studied problem. The FQW should be distinguished by a critical approach to the study of literary sources. The material drawn from literary sources should be processed, organically linked to the topic chosen by the student.

The FQW should be written on the basis of carefully processed empirical material on the studied problem. The FQW should demonstrate the student's ability to use research methods studied in the disciplines of the curriculum. The empirical material involved should be documented (interview guides, scripts, calculations, video materials, etc.) and presented in the Appendix of the FQW. The results obtained in the FQW should have elements of scientific novelty and practical significance. The totality of the results obtained in such work should indicate that its author has the skills of analytical, research or scientific-practical work in the chosen field of professional activity.

The PTE "Preparation of the final qualification work" can be performed in one of the following two formats:

Academic format – research carried out in order to gain new knowledge about the structure, properties and laws of the studied object (phenomenon).

Design and research format – development of an applied problem, as a result of which a certain product (design solution) is created.

When using any of these formats, the PTE "Preparation of the final qualification work" aims to consolidate and demonstrate the knowledge and skills acquired in the process of mastering the Master's degree Programme "Business Analytics and Big Data Systems".

The offer of the topics for the PTE "Preparation of the final qualification work"<sup>6</sup> for students is formed by departments and other units, and it is also possible to offer the topics of the PTE "Term Paper" from employers and initiative topics from students. The topics are approved by the Academic Supervisor / Academic Council (if any) of the Programme. Proposals on topics should have the following structure:

- an approximate topic of work in Russian and English;
- the proposed supervisor of the PTE "Preparation of the final qualification work" (full name, position, scientific degree, place of work).

The schedule of the PTE "Preparation of the final qualification work" is coordinated by the student with the supervisor of the PTE "Preparation of the final qualification work", appointed in the order, and should include the following control points:

- preparation of the project (plan) of the FQW. At this stage, the student must formulate the relevance, working hypothesis / idea of the work, identify the problem to be solved by the work, a list of the main sources for the performance of this work, the expected result and propose the basic structure of the work;
- description of the proposed solution and implementation of the main architectural components of the solution;

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<sup>6</sup> For more information, see Appendix 4 "Requirements for Term Papers and Theses Written by Students in Bachelor's and Master's Programmes at the Graduate School of Business of National Research University Higher School of Economics"

- presentation of the first version of the FQW to the supervisor, with subsequent adjustment of the work (if necessary);
- presentation of the final version of the FQW to the supervisor;
- uploading the work to the LMS system for further verification of the work for plagiarism. It is mandatory for the student to upload the final version of the work in an electronically un-scanned form to a special module for coursework support in the LMS;
- evaluation by the supervisor of the FQW and writing a review<sup>7</sup>. The supervisor is obliged to provide the Study Office, where the student studies, with a review of the FQW within a calendar week after receiving the final version of the work;
- a mandatory element of the implementation of the final qualifying work is its review. The reviewer is appointed from among persons who are not employees of the Graduate School of Business. The reviewers may be representatives of another educational organization of higher education, employees of other organizations from the professional sphere corresponding to the topic of the FQW. The order on the assignment of reviewers is signed by the Director of the Graduate School of Business / Academic Supervisor of the Programme no later than one month before the scheduled date of the defense of the FQW. The order specifies the full name of the student, the topic of the FQW, information about the reviewer (full name, academic degree, academic title, place of work, position);
- submission of the final version of the FQW to the Study Office. The final version of the FQW is submitted by the student to the Study Office in a paper version, with an annotation, with a review of the supervisor, a certificate or a registration sheet from the LMS system within the time limit established by the order;
- defense of the FQW. Defense begins with the presentation of the results of the FQW. For Thesis Papers, 15 minutes are allotted for the performance. After completing the report, the members of the commission ask questions.

In order to monitor the implementation of the schedule and compliance with the control points of the PTE “Preparation of the final qualification work”, a corresponding summary table is prepared, which is filled in by the supervisor.

#### **2.5.4. Evaluation and reporting of the PTE.**

PTE “Preparation of the final qualification work” is evaluated on the basis of defense before the state examination commission, which is regulated by the relevant local regulations of the HSE University. The supervisor, as part of his review of the FQW, evaluates the PTE according to a 10-point system in accordance with the criteria:

- correspondence of the content of the Thesis Paper to the approved topic ( $\rho_1$ );
- relevance of the research topic, justification of its choice ( $\rho_2$ );
- fulfillment of the purpose and objectives of the Thesis Paper, correctness of the formulated results and conclusions and their compliance with the purpose and objectives of the work ( $\rho_3$ );
- originality and novelty of the Thesis Paper ( $\rho_4$ );
- correctness of the application of methodology and methods to solve the formulated tasks ( $\rho_5$ );
- practical significance of the study ( $\rho_6$ );
- literacy, consistency in the presentation of the material ( $\rho_7$ );

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<sup>7</sup> For more information, see Appendix 4 “Requirements for Term Papers and Theses Written by Students in Bachelor’s and Master’s Programmes at the Graduate School of Business of National Research University Higher School of Economics”



- design of the work<sup>8</sup> ( $\rho_8$ );
- execution of the schedule and compliance with control points ( $\rho_9$ ).

The first 8 criteria are evaluated according to a 10-point system, the ninth criterion is a correction factor in the interval [0,1].

The evaluation formula ( $\Delta$ ) of the supervisor for the PTE “Preparation of the final qualification work”

$$\Delta = \rho_9 \frac{\sum_{i=1}^8 \rho_i}{8}.$$

A student who has received an unsatisfactory grade for the PTE “Preparation of the final qualification work” is considered to have academic debt. He is obliged to liquidate this academic debt in accordance with the procedure established by the local regulations of the HSE University, eliminating comments and, if necessary, finalizing the text of the Thesis Paper; at the same time, the topic (supervisor) can be changed. Text design of the Thesis Paper is carried out per the requirements defined in the methodological recommendations on written works for students of the “Business Informatics” area of study.

The topic is changed by order of the Director of the Graduate School of Business / Academic Supervisor of the Programme. For students who have academic debt on the PTE “Preparation of the final qualification work”, the procedure for retaking is regulated by the Regulations for Interim and Ongoing Assessments of Students at National Research University Higher School of Economics.

The assessment for passing the PTE “Preparation of the final qualification work” it is put down according to the results of defense in the statement. The assessment results are used in the rating system for evaluating the student’s academic results.

#### **2.5.5. Resources used in the implementation of the PTE.**

In the process of passing the PTE, students can use information technologies, including automation tools for design and software development used, Internet technologies, etc.

The material and technical support of the PTE is reflected in the contracts for practical training with individual organizations. The specified material and technical support must meet the current sanitary and fire safety standards, as well as safety requirements during work.

#### **2.5.6. Features of completing tasks during the implementation of the PTE.**

In the conditions of restrictive or other measures, the implementation of the PTE takes place in a remote format in accordance with the instructions of the regulatory authorities of the HSE and the Russian Federation.

Other features of performing PTE tasks under restrictive measures depend on the nature of the restrictions and are specified by the governing bodies of the University, the GSB or the educational program.

#### **2.5.7. Other materials and other information.**

The preparation of the final qualification work is regulated by the Requirements for Term Papers and Theses Written by Students in Bachelor’s and Master’s

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<sup>8</sup> For more information, see Appendix 4 “Requirements for Term Papers and Theses Written by Students in Bachelor’s and Master’s Programmes at the Graduate School of Business of National Research University Higher School of Economics”

Programmes at the Graduate School of Business of National Research University Higher School of Economics.

### **Section 3. Peculiar properties of the training organization for disabled persons and persons with disabilities**

Practical training of students with disabilities and disabled people is organized taking into account the peculiarities of psychophysical development, individual capabilities and health status.

For persons with disabilities, the choice of places for practical training should take into account the state of health and accessibility requirements for these students.

## **Industrial Practice report structure**

1. Title page;
2. Table of contents;
3. Introduction:
  - In the introduction, write the rationale for choosing a certain work placement, state the relevance of the problem, define aims and objectives of the internship, determine the obtained results, and provide the description of the report's structure.
4. Body (main part):
  - Brief information about the place of internship: profile of the organization.
  - Explanation of how the objectives for the internship were set. The theoretical and methodological base necessary to reach the objectives. Justification of the choices you made in terms of methods and means used to reach the objectives.
  - Description and justification of the main results.
  - Analysis and synthesis of data, information, and materials collected during internship on the subject of your master's thesis research.
5. Conclusion (should include synthesis of the internship results and the key findings);
6. Reference list;
7. Results and products (text, photos, links and other materials confirming the obtaining of the result);
8. Appendix (if necessary: presentation to the internship defense, graphs, diagrams, tables, algorithms, illustrations, reviews, etc.):
  - Materials that provide the report with necessary details on the decisions made for reaching the internship's goals and objectives, tables, business process models, etc.
  - A detailed plan and separate sections of the master's thesis.

### **Project report structure**

1. Title page
2. Table of contents;
3. General description of the Project:
  - Initiator, head of the Project;
  - Type of the Project;
  - Place of work on the Project (name of the organization, structural unit/other).
4. Body (the main part):
  - Description of the implementation of the Project's work;
  - Description of the Project's results (product);
  - Description of the used methods and technologies used;
  - Description of student's role in the Project team (required for a group project);
  - Description of challenges and difficulties encountered during the Project (if it is valuable in the context of the project goal).
5. Conclusion (evaluation of individual results of the Project, formed / developed competencies);
6. Project's results (text, photographs, links, and other materials confirming the result);
7. Appendix (if necessary: presentation, graphics, diagrams, tables, algorithms, illustrations, reviews, etc.).

### Timetable for Master's Term Papers and Thesis Works

	Stage	Deadline
1	Submission of application/proposal for term paper/thesis topic via HSE University's EIOS system	No later than <b>October 10</b> (if using EIOS module)
2	Selection of topic from proposed list and proposal of one's own topic to a potential supervisor	No later than <b>November 1</b> (if using EIOS module)
3	Approval of term paper topic in student's individual curriculum via HSE University EIOS	No later than <b>December 15</b> (if otherwise not specified in internship programme)
4	Confirmation of student's thesis topic and supervisor according to a directive	No later than <b>December 15</b>
5	Preparation of draft thesis (research design), supervisor's assessment	No later than <b>December 20</b>
6	Second submission of draft of thesis work (if not approved by supervisor)	No later than <b>December 25</b>
7	Work placement	As per degree programme's academic calendar
8	Submission of report on placement process	Within five working days after completion of pre-graduation internship
9	Submission of draft version of thesis to supervisor	No later than <b>April 1</b>
10	Amendment/adjustment of term paper and thesis topics (with approval of topic as per a directive by academic supervisor of programme)	No later than one calendar month prior to the deadline set in directive for submitting final version of term paper/thesis work to programme's study office
11	Submission of final version of thesis with abstract to supervisor by uploading it to the Antiplagiat system (in special EIOS module)	<b>May 15</b>
12	Submission of thesis work for review	<b>May 18</b>
13	Supervisor's feedback on thesis work	Within a calendar week after uploading the thesis
14	Submission of final version of term paper with abstract to supervisor by uploading it to the Antiplagiat system (in EIOS special module)	<b>June 15</b>

15	Receiving reviews on thesis work and uploading them to electronic module for student viewing	No later than six calendar days prior to the date of the thesis defense
16	Transfer of thesis work to SEB along with supervisor and reviewer's feedback	No later than two calendar days prior to thesis defense
14	Thesis defense	Deadline set by curriculum and directive for FSC
15	Term paper defense	As per dates set in degree programme's internship programme

APPROVED by  
HSE Graduate School of Business Academic Council  
Minutes No. 11, dated November 23, 2022

**Requirements for Term Papers and Theses Written by Students in Bachelor's  
and Master's Programmes at the Graduate School of Business  
of National Research University Higher School of Economics**

**1. General Provisions**

1.1. These requirements for the composition of term papers and theses of students enrolled in Bachelor's and Master's programmes at the Graduate School of Business of National Research University Higher School of Economics (hereafter the "Requirements") specify key criteria for the structure and contents of term papers and theses (hereafter "theses") written by students pursuing degree programmes at the HSE Graduate School of Business (hereafter "GSB").

1.2. Compliance with these Requirements is mandatory for GSB students with respect to their preparation of term papers and theses.

1.3. Term papers and theses are included in curricula with a view to checking universal, general professional and professional competencies specified within a degree programme's summary and basic curriculum (hereafter a "DP").

1.4. The procedure for the preparation and supervision of term papers and theses at GSB shall be defined in line with the Procedures for Students Writing Term Papers and Theses under Bachelor's, Specialist and Master's Degree Programmes at National Research University Higher School of Economics.

1.5. Criteria as to the format of term papers and theses are in line with the "Report Format Rules", which are set forth in GOST 7.32-2017 Editorial Standards for "Research Report. Structure and Requirements for the Format of Papers" with a view to the following details:

1.5.1. font size – 14 pt;

1.5.2. justified alignment;

1.5.3. upon first mention, an abbreviation should be given in parentheses after a concept or designation's full form; further in the text, only the abbreviation should be given (without writing the full form);

1.5.4. If a figure (table) has been drawn from any source, a link to the source should be provided under the title.

1.6. Term papers and theses may feature words and phrases usually found in English in the Russian-language wording of topics, only if such words and phrases are well-known and commonly used.

1.7. When writing term papers and theses, students must adhere to an academic style in terms of presentation, terminology, notation, abbreviations and symbols, as adopted in their given field of study. The presentation of materials should be consistent and logical, while also being specified in a competent, literary language, without any stylistic and logical errors. Furthermore, particular attention should be paid to the inclusion of logical connections when proceeding through the chapters and sections of a thesis work.



1.8. Pursuant to the Regulations on Checking Student Papers for Plagiarism and the Publication of Bachelor's, Specialist and Master's Theses on the HSE Corporate Website (Portal), thesis supervisor must review a work's originality within at least 3 (three) working days prior to the date of the thesis defense process, provided that the percentage of borrowed materials in the paper, identified during initial verification, does not exceed 20%.

1.9. If confirmed instances of plagiarism are found in a paper, the relevant supervisor shall submit an official memorandum addressed to the GSB Director within 3 (three) days thereafter with a detailed description of this instance, along with a copy of the paper (or any part thereof) attached (if any), including information about the percentage of borrowed text or a source thereof, as well as any other documents confirming the student's violation, suggesting an applicable disciplinary action, in accordance with the Procedures for Application of Disciplinary Measures for Violating Academic Standards for Student Papers at HSE University.

1.10. Full texts of term papers are not published on the GSB website.

1.11. Information about the Requirements shall be provided to the GSB students by their DP's manager. In turn, supervisors of term papers and theses will be notified by the academic supervisor of the respective DP. The Requirements shall be forwarded to students and supervisors of term papers and theses via corporate e-mail; the Requirements are published on the websites of respective DP on HSE University's corporate website (portal).

## **2. Term Paper sand Theses Structure**

2.1. The structure of a term paper and thesis should depend on its content, but in general, a following, logical structure should be maintained: title page, table of contents, introduction, chapters of the main body, conclusion, bibliography/reference list, and annexes. The content of the chapters in the main body of a term paper or thesis must correspond to the topic of the work and ensure its full scope.

2.2. The title page and the table of contents should be placed on the first 2 (two) pages of the work. The title page template can be found in Annex 3 to the Procedures for Students Writing Term Papers and Theses under Bachelor's, Specialist and Master's Programmes at National Research University Higher School of Economics.

2.3. The introduction should be brief (up to 3 (three) pages), well-structured and comprised of the following parts:

2.3.1. statement of the research problem as an academic or applied problem, which must be analyzed and resolved;

2.3.2. relevance of the topic, i.e., with respect to a thesis work's theoretical or practical value; overall, the relevance of a concept is characterized by the degree of discrepancy between the demand for scientific ideas and practical recommendations (to meet a particular need) and the proposals offered by the academic community at present;

2.3.3. extent of scientific/academic development/enquiry of the specific research topic, e.g., extent of examination of the problem, demonstrating its academic clarification with respect to relevant research;

2.3.4. purpose of the research as the mental anticipation of a result, which can be obtained through research processes;

2.3.5. research objectives are ways of achieving a goal; it is necessary to formulate tasks very carefully, since descriptions of their solution should constitute the content of the chapters and paragraphs of a term paper or thesis, while the assessment of the effectiveness of a work's analysis depends on the description of the solution generated;

2.3.6. object of study; this may include anything that explicitly or implicitly features a contradiction and, thus, generates a problematic situation;

2.3.7. the subject of research is a part or a reflected side of a given object; this can be most significant, from a practical or theoretical point of view, properties and features of an object, which are subject to direct analysis;

2.3.8. research methods are ways of finding solutions to research and applied problems in order to generate an analytical outcome; usually, theoretical methods (e.g., analysis, synthesis, comparison, generalization, modeling, etc.), empirical methods for data collection (e.g., observation, study of the products of activity, documentation, questionnaires, sociometry, conversation, independent characteristics method, experiment, etc.) and mathematical methods (quantitative data processing, ranking, etc.) can be applied;

2.3.9. characteristics of key sources of information used for research activities and writing a term paper or thesis;

2.3.10. scientific innovation and practical value refer to new theoretical and practical conclusions, patterns, content, principles and technologies, which have still not been identified or recorded in academic literature; the scientific innovation of research lies in the author's development of a concept, description of a method, model, approach, concept, principle, etc.; the practical significance of research should lie in its readiness for practical application;

2.3.11. structure of work – titles of chapters and their brief description.

2.4. The main body of a term paper or thesis should reflect the contents of the given work and be comprised of several chapters and paragraphs. The requirements for the main body of a term paper or thesis shall be determined by the DP and specified in its Internship Programme. This part of the work must describe the history of the problem or theoretical issue under consideration, generalize and analyze the relevant sources, outline the stages of empirical research, and provide related outcomes. Each chapter and paragraph of the work should end with a short conclusion.

2.5. In the conclusion section, the results and main conclusions of a term paper or thesis work should be clearly formulated. Conclusions must be concise and organically emerge from the work's content. On the whole, the results should justify the solutions for the research objectives and testify to the correctness of the hypothesis, as well as demonstrate the achievement of the work's aims along with the research's practical value.

2.6. The list of references should include scientific articles in foreign and domestic academic publications, books, statistics, corporate and research reports, etc. on the topic of the term paper or thesis. Authors are advised to find additional resources in library catalogs, the HSE Library's e-resources, online resources, etc. It is advisable to use scientific/academic sources published over the past 5 (five) years, along with fundamental literature on the research topic. In turn, the list of references shall be drawn up in accordance with GOST 7.32-2017 and include all materials and other sources cited in the text.

2.7. Annexes are not a mandatory part of a term paper's or thesis' structure. Nevertheless, it is advisable to introduce appendices if an author uses a relatively large number of complex tables, statistical material, source codes, etc. Such materials, if included in the main body, would complicate the comprehensiveness of the work. It is generally sufficient to cite information, which is included in the appendices.

2.8. Term papers or thesis works should be written on the basis of analyzed empirical material regarding the problem/issue under study. A paper should demonstrate a student's ability to harness the research methods used in the course of their analysis. The involved empirical material should be documented and presented in an annex to the given term paper or thesis.

2.9. Term papers and thesis works should display a critical approach to study of scholarly literature, including research, academic or professional literature concerning the problem/issue under consideration. Materials drawn from bibliographic sources must be properly processed and re-interpreted, while also being organically linked to the student's selected topic.

2.10. The results (e.g., conclusions, recommendations, etc.) obtained for a term paper or thesis should be of practical importance, as well as be applicable/workable for relevant organizations or markets. The totality of the results obtained in a work should demonstrate that its author possesses analytical, research or practical skills in his/her chosen professional field.

2.11. The first version of a completed term paper or thesis shall be submitted to the supervisor for comments and recommendations for making further adjustments (if necessary) as part of the mandatory assessment element of term paper or thesis preparation.

2.12. The presentation of a term paper or thesis at the defence should outline the structure and contents of the work and be used as illustrative material for a student's presentation.

2.13. Students are expected to explain the key aspects of his/her term paper or thesis freely, without relying on any notes, or reading off of presentation slides, or relying on a hard copy of his/her report.

### **3. Key Requirements for Term Papers**

3.1. Term papers are written as a research or project work (term paper project). Requirements for outcomes of a term paper in a given format shall be set forth in the Procedures for Students Writing Term Papers and Theses under Bachelor's, Specialist and Master's Programmes at National Research University Higher School of Economics.

3.2. The topic of a term paper should be selected in the year of study as specified in the respective DP's basic curriculum. The period for choosing a term paper's topic shall be set forth in the DP's Internship Programme.

3.3. A term paper can be drawn up as an individual paper or as group work implemented by a team of students comprising from 2 (two) to 6 (six) persons. The type of a term paper shall be determined under the respective Internship Programme.

3.4. Term papers are aimed at consolidating students' knowledge and competencies acquired from theoretical and practical classes, while also fostering skills

in independent analysis of a selected topic, as well as developing their capabilities for analysis, research, project activities, and data processing.

3.5. Pre-defence of a term paper can be held as part of a supporting project or research seminar, if the pre-defence process is specified in the respective course programme.

3.6. A public defence is recommended for term papers. Public defence procedures shall be determined under the Internship Programme.

3.7. Public defence of term papers is usually organized according to the examination period timetable for Module 4.

3.8. The term paper assessment shall draw upon the following elements:

3.8.1. assessment of a term paper by a supervisor;

3.8.2. assessment of the paper's reporting materials;

3.8.3. assessment of the paper's presentation and report.

3.9. The grade for a term paper's reporting materials, presentation and report can be issued by a DP's academic supervisor or by a grading committee, which has been set up at the supervisor's decision.

3.10. Term paper supervisors use same criteria for term paper assessment as DP academic supervisors, or a grading committee set up at their decision. Term paper supervisors shall assess the progress of a paper's preparation and development, as well as the quality of the given student's and the supervisor's collaboration.

3.11. Grades for individual assessment components may feature different weights for evaluating a student's competencies, as established under their DP for the term paper. Decisions with respect to assigning different weights to assessment components in a final grade are provided under the auspices of Internship Programme. Students or any other participants in the assessment process shall not be entitled to exclude or change the weights of assessment components in the calculation of their final grade.

3.12. Each member of a grading committee shall give his/her final grade for a term paper as an average grade based on the outcomes of the paper's defence with respect to each criterion, unless otherwise stated under the Internship Programme.

3.13. The final grade for a term paper's reporting materials, presentation and report shall be assigned by members of the respective grading committee as an average grade.

3.14. The grade for all components of a term paper and the final grade shall be issued relying on a 10-point grading scale.

3.15. If a term paper is written by a group of students, the group should submit the work as a single text. However, their grades will be awarded individually, giving due consideration of an assessment of the entire paper and individual answers provided to questions during the defence process.

3.16. Students taking part in group term paper work may receive different grades in the following situations:

3.16.1. team members inform their DP's academic supervisor or the term paper supervisor by corporate e-mail prior to the term paper defence date that 1 (one) of the group members did not take part or failed to complete their part of the term paper work appropriately;

3.16.2. the front page of the term paper report features the supervisor's comments, or the term paper's supervisor has notified the DP academic supervisor that 1 (one) of the group members ignored their meetings and/or did not attend meetings with representatives of the organization acting as the client party of the term paper; in

such instances, the committee will ask this student to answer additional questions at the defence in order to evaluate his/her knowledge with respect to details of the term paper project, as well as his/her ability to present and elucidate the project outcomes;

3.16.3. the public defence of a term paper report must be held in presence of all team members of the project; the committee shall evaluate the overall level of the term paper as presented by the group, as well as the extent of their team work: distribution of the presentation's sections among group members, mutual support in answering questions regarding the different stages of the term paper project and total outcomes of the analytical work; low involvement on the part of a group member in the presentation of the paper's report or failure to answer questions may serve as grounds for the a grading committee to assign them a lower individual grade;

3.16.4. when submitting a group term paper, the contribution of each group member to the development of the paper must be specified; the procedures for assessing individual contribution to a work shall be defined as per the Internship Programme.

#### **4. Key Requirements for Theses**

4.1. The topic of a thesis is chosen by students in their final year of study under a DP. The date to select a thesis topic shall be defined as per the Internship Programme.

4.2. Students of in-person/full-time degree programmes at the HSE Graduate School of Business must write thesis works on an individual basis.

4.3. Theses are written for the purpose of demonstrating the knowledge and skills that students mastered while pursuing the DP and their ability to find and study material on the thesis topic, as well as competencies specified under the DP summary.

4.4. Theses are prepared as a research or project work. The criteria for outcomes of a thesis in a given format are set forth in the Procedures for Students Writing Term Papers and Theses in Bachelor's, Specialist and Master's Programmes at National Research University Higher School of Economics.

4.5. A thesis work can include the generalization of the results of previous term papers composed by an individual given author and feature materials collected personally by him/her during a work placement. Citations of term paper materials in a thesis work should be formatted according to academic referencing rules. If links to a given work are omitted, the use of term paper materials shall be deemed as an incorrect citation and taken into account when checking the work for plagiarism.

4.6. Pre-defence of a thesis can be held as part of a supporting project or research seminar. The preliminary thesis version to be presented at the pre-defence means that working versions of all substantial elements of the paper are prepared: topic, relevance of the topic, problem, goal, objectives, object, and subject of given research activities, bibliography overview, research methods, empirical analysis, academic novelty or practical relevance, and conclusions.

4.7. The defence procedure shall be governed by the Regulations on Final State Certification of Students of Bachelor's, Specialist and Master's Degree Programmes at National Research University Higher School of Economics.

4.8. A thesis defence shall be conducted within the timeframe specified in the curriculum and the FSC directive.

4.9. The grade for the thesis work shall consist of:

4.9.1. assessment of its text, conducted by the state examination board (hereafter “SEB”) and taking into account the supervisor’s feedback;

4.9.2. thesis presentation before SEB members (presentation with a report);

4.9.3. assessment of the author’s responses to questions posed by SEB members.

4.10. Questions posed by a SEB member may be focused directly on the respective thesis topic or closely relate to the topic with the aim of checking the student’s professional, general professional and universal competencies.

4.11. Thesis supervisors shall carry out their assessments in accordance with the same criteria as SEB. For instance, a thesis supervisor evaluates the progress of a thesis’ development and the quality of interaction with the student. The thesis supervisor’s opinion shall be taken into account in the final grade for the thesis as an additional recommendation. In turn, the thesis supervisor’s grade shall be specified in feedback drawn up as per the form in Annex 1 to the Procedures for Students Writing Term Papers and Theses in Bachelor’s, Specialist and Master’s Programmes at National Research University Higher School of Economics.

4.12. The assessment of thesis texts, presentation of their results and the author’s responses to SEB members’ questions are three equal and complementary components of the SEB’s assessment of students’ knowledge, skills and competencies, as approved by the respective DP for thesis development and defence. All three of these components are mandatory. Students or any other participants in the assessment process are not entitled to decide on annulation or exclusion of any of the components in the thesis’ final grade.

4.13. A thesis work will be graded by each of the SEB member on a 10-point and five-point grading scale. Each criterion shall be graded on a 10-point grading scale. In turn, a thesis work shall be graded by each SEB member on a 10-point grading scale as an average grade based on the results of the thesis defense in regards to each of the criterion and rounded as per the arithmetical rules. The grades awarded by the SEB members on a five-point grading scale should be based on the conversion of a grade awarded on a 10-point grading scale as follows:

— Unsatisfactory – 0, 1, 2, 3;

— Satisfactory – 4, 5;

— Good – 6, 7;

— Excellent – 8, 9, 10.

4.14. The final grade shall be awarded as per the decision of the SEB, pursuant to the SEB Regulations on the Final State Certification of Students in Degree Programmes at HSE University. This decision shall be adopted at closed meetings in the presence of at least two thirds of the SEB members by the simple majority vote of the local SEB members attending the meeting in the personal presence of the local SEB chairperson/SEB Presidium. If there is a tie vote, the local SEB chairperson/SEB Presidium shall have the casting vote.

4.15. SEB members shall formulate their decision as follows:

4.15.1. each SEB member grades thesis works on a 10-point and five-point grading scale;

4.15.2. each SEB member suggests a grade on a five-point grading scale;

4.15.3. the SEB members jointly decide on the student’s final grade on a five-point grading scale by a simple majority vote;

4.15.4. each SEB member suggests a grade on a 10-point grading scale;

4.15.5. grades on a 10-point grading scale awarded within the range of the student's final grade on a five-point grading scale shall be approved as such, while the grade awarded on a 10-point grading scale beyond the range of the student's final grade on a five-point grading scale shall be deemed the equivalent to the extreme value within the established range of grades;

4.15.6. the SEB members jointly make a decision on a student's final grade on a 10-point grading scale by a simple majority vote, which should be recorded in the SEB minutes.

## **5. Special Criteria for Term Papers Prepared by the Master's Students at the Graduate School of Business**

5.1. The main tasks of preparing a term paper as an element of the practical instruction of Master's students at the Graduate School of Business are as follows:

5.1.1. applying contemporary methods of scientific or applied analysis;

5.1.2. developing skills to carry out independent analytical, research or practical work;

5.1.3. acquiring and integrating theoretical knowledge and practical skills in line with the DP focus and in the given field of study;

5.1.4. developing project work skills in business;

5.1.5. acquiring mandatory competencies of DP alumni, as per the respective DP's summary.

5.2. The recommended size of a term paper, prepared by a group of students, comes to 15-30 pages of printed text (20,000-45,000 symbols with spaces) per student (excluding reference/bibliographic lists and annexes), drawn up as per the criteria stated in these Regulations.

5.3. The recommended size of a term paper prepared by a single student, comes to 40-60 pages of printed text (55,000-85,000 symbols with spaces) per student (excluding the reference/bibliographic list and annexes), drawn up as per the criteria stated in these Regulations.

5.4. The minimal size of a term paper can be determined as per the Internship Programme.

5.5. The structure of the main body of a term paper shall be defined as per the Internship Programme.

5.6. Term papers written by GSB students are not subject to mandatory review.

5.7. Lists of cited works must feature at least 30 titles, including at least 50-60% of academic articles, including at least 33% of articles from foreign (e.g., English-written) academic journals.

5.8. The recommended duration of a report on a term paper under the Master's programme prepared by a single student comes to at least 15 minutes. The recommended duration of a report on a term paper under the Master's programme prepared by a group of students comes to at least five minutes.

## **6. Special Criteria for Thesis Works Written by Bachelor's Students at the Graduate School of Business**

6.1. The main tasks of preparing a thesis as an element of the Bachelor's students practical training at the Graduate School of Business are as follows:

- 6.1.1. using contemporary methods of applied scientific research;
- 6.1.2. developing skills of independent analytical, research and/or practical work;
- 6.1.3. acquiring, systematizing and integrating theoretical knowledge and practical skills under the respective DP's focus and in the given field of study;
- 6.1.4. preparing students for practical activities in a business environment on the operational or tactical level of management;
- 6.1.5. assessing mandatory competencies acquired by the DP alumni, as per the respective DP's specialty.

6.2. The recommended size of a thesis written as per the requirements stated in these Regulations shall be defined as per the Internship Programme.

6.3. Minimal thesis size (excluding the reference list and annexes) shall come to 50 pages of printed text or 70,000 symbols with spaces, drawn up in accordance with the criteria stated in these Regulations.

6.4. The results obtained in a thesis may feature elements of scientific novelty.

6.5. The main body of a thesis, as a rule, shall consist of 3 (three) chapters:

- analysis of the research object (with a focus on companies or markets) with the aim of formulating an applied research problem;
- analysis and systematization of information from academic sources with the aim of exploring the topic of research adequately and sufficiently;
- describing of the process for solving the applied research problem/issue and related outcomes.

6.6. The relevance of a respective scientific problem is largely determined by the academic community's overall need to overcome urgent challenges regarding a given thesis' subject area, as presented in leading Russian and foreign academic journals, or upon the direct orders of scientific organizations engaged in the field considered under the DP. The results of such research should be the generation of knowledge, which is innovative in scientific/academic terms for the subject area considered by the thesis. The presentation of results can take the form of recommendations for categories of organizations, products, processes or functions, or a fully developed or improved analytical tool.

6.7. The relevance of solving or dealing with an applied project-based problem should mainly be determined by the direct order of organizations engaged in the field of the DP, or the prospect of the practical application of the results on the part of employees or management of these organizations in order to solve their operational problems/issues. The results of analysis of an applied problem should include the development of a solution, which bears practical significance for the thesis object. The presentation of the results of a project-based thesis can take the form of targeted recommendations for organizations, or a developed or improved analysis tool used to enhance corporate performance.

6.8. An applied problem solved within the framework of a thesis should be a response to a gap in practical knowledge or the option of analyzing a promising area of development of the research object relying on information about current trends or best practices.

6.9. Thesis papers written by students under Bachelor's programmes at the Graduate School of Business may be exempt from mandatory review as per decision of their DP's academic committee.



6.10. A list of cited works must feature at least 20-50 titles, including at least 50-60% of academic articles, and at least 20% of articles from foreign (written in English) academic journals.

6.11. A total of 3 (three) weeks prior to the expected date of defence, a Project Proposal should be uploaded to the information system to check the text for any instances of plagiarism. To defend the Project Proposal, an examination board shall be formed according to respective HSE University bylaws. The defence committee for the Project Proposal should include teachers of foreign languages and professors of specialized DP disciplines/courses. The Project Proposal defence shall be regulated by the Requirements for the Project Proposal's Contents, Formatting and Defence developed by the DP.

## **7. Special Requirements for Thesis Works Written by Master's Students at the Graduate School of Business**

7.1. The main tasks of writing a thesis as an element of Master's students practical instruction at the Graduate School of Business are as follows:

- 7.1.1. using contemporary methods of applied scientific research;
- 7.1.2. developing skills in independent analytical, research or practical work;
- 7.1.3. acquiring, systematizing and integrating theoretical knowledge and practical skills under a DP's specialty and in the given field of study;
- 7.1.4. preparing students for practical work in business on the strategic level of management;
- 7.1.5. assessing mandatory competencies acquired by DP alumni, as per the respective DP's specialty.

7.2. The recommended size of a thesis, written as per the requirements stated in these Regulations, shall be defined in the Internship Programme.

7.3. The minimal thesis size (excluding the reference list and annexes) shall come to 70 pages of printed text or 95,000 symbols with spaces, drawn up as per the criteria stated in these Regulations.

7.4. With respect to thesis works submitted in a research format, in the main body of the work, it is preferable to adhere to a standard structure of an article for an academic publication, which usually includes:

- 7.4.1. a detailed introduction;
- 7.4.2. academic literature review;
- 7.4.3. methodology statement;
- 7.4.4. results/outcomes;
- 7.4.5. discussion and further research fields.

7.5. For a project-based thesis work, the structure of the main body usually includes:

7.5.1. a description of an issue/problem concerning a firm/company's organizational development - the basis for practices, formulation and justification of the relevance of the project in regards to the development of administrative processes within the organization and the definition of its main tasks;

7.5.2. a systematic review of relevant corporate practices in terms of finding solutions to the formulated problem/issues in regards to the administrative development in the organization and related academic publications;

7.5.3. a description of a diagnostic analysis of the organization's internal and external environment;

7.5.4. a description of the selection and justification of the project design, as well as the methods used to solve or deal with the organization's issues;

7.5.5. a description of the proposed solution to the formulated managerial problem/issue, along with the formation of strategies, management structures, policies, regulations and procedures, as well as assessment of their efficiency.

7.6. A list of cited works must feature at least 50 titles, with at least 50-60% being academic articles, including at least 33% of articles from foreign (written in English) academic journals.

7.7. Results obtained as part of a project-based thesis may feature academic/scientific innovations. The results obtained in a research-based thesis must feature elements with scientific/academic novelty.