APPROVED by the
Academic Committee of the Bachelor's Programme
in Data Science and Business Analytics
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PREPARED by the
Centre for Internships, Projects, and
Entrepreneurship
at the Faculty of Computer Science,
and the Big Data and Information Retrieval School
at the Faculty of Computer Science

Internship Programme for the Bachelor's Programme in Data Science and Business Analytics at the Faculty of Computer Science (FCS) at HSE University

Moscow
2024

Оглавление

Summary

This Internship Programme has been drawn up in accordance with the Regulations on Practical Training of Students under Core Bachelor's, Specialist and Master's Programmes at HSE University, as approved by HSE University's Academic Council, Minutes No. 06, dated June 17, 2021, with amendments approved by HSE University's Academic Council, Minutes No. 11, dated October 29, 2021, and enacted by HSE University Directive No. 6.18.1-01/1910pp21-7, dated October 19, 2021, with amendments approved by HSE University's Academic Council, Minutes No. 03, dated March 25, 2022, and enacted by HSE University Directive No. 6.18.1-01/130721-7, dated July 13, 2021 (hereinafter, the "Regulations"), as well as HSE University's Regulations for Interim and Ongoing Assessment of Students.

The Internship Programme for the Bachelor's Programme in Data Science and Business Analytics consists of the term project to be completed during the academic year by second- and third-year students, an academic internship and summer work placement, as well as a pre-graduation internship and thesis preparation. Students' key internship goals include gaining experience in research and project work, mastering contemporary development tools, and acquiring experience in preparing reporting documentation.

The Internship Programme provides a description of the degree programme's curriculum elements, organised in the form of practical training and included in the "Internship" module of the curriculum.

Definitions and Abbreviations

NDA – Non-Disclosure Agreement
AC – Appeals Committee
Thesis – a student's final qualifying paper
Graduates (alumni) – students who will be issued a certificate of higher education (qualification), based on the results of the FSC
FSC – Final State Certification
SEB – State Examination Board
IC – student's individual curriculum
TP – term project
"Internship" module in a DP curriculum – one of the modules of a curriculum as per the Educational Standards for Bachelor's Studies and Master's Studies at HSE University, respectively, under which a student's competencies are formed, thus allowing them to perform practical tasks in their chosen professional field, including project, research, business-related, and expert/analytical activities
HSE University – National Research University Higher School of Economics, including all regional campuses
Academic staff – academic staff, including faculty members and researchers at HSE University
DP – core professional degree programmes of higher education at the Bachelor's, Specialist and Master's level carried out through all modes of study at HSE University and its regional campuses
ASSU at FCS – Academic Staff Support Unit at the Faculty of Computer Science
SW project – software project
Faculty – Faculty/Faculty members
DSBA – Bachelor's Programme in Data Science and Business Analytics at the Faculty of Computer Science at HSE University
Student – an individual who is pursuing a course of study under a given degree programme
UDC – Universal Decimal Classification
Project participant – a student engaged in the implementation of a project
PO – programme office
Curriculum Support Unit (CSU) for Undergraduate Programmes at the Faculty of Computer Science (FCS) responsible for overseeing processes pertaining to the studies of the degree programme's students
FCS – Faculty of Computer Science at HSE University, Moscow
CIPE – Centre for Internships, Projects and Entrepreneurship at FCS
PTE (practical training element) – an element of a curriculum that is implemented with the aim of attaining specific objectives and goals with respect to practical training

Section 1. General Information

Bachelor's Programme in Data Science and Business Analytics

Year of study	Form of internship	Type of internship (PTE, practical training element)	Mandatory/ Optional	Credit units per student	Academic hours per student	Timeframe
2	Professional	Academic	Mandatory	3	114	Summer after Year 2, assessment in Module 1 of Year 3
2	Project-based	Term project 1	Mandatory	5	190	November–June in Year 2, assessment in Module 4
3	Project-based	Term project 2	Mandatory	5	190	November–June in Year 3, assessment in Module 4
3	Professional	Work placement	Mandatory	3	114	Summer after Year 3, assessment in Module 1 of Year 4
4	Research	Pre-graduation internship	Mandatory	6	228	April in Year 4, assessment in Module 4
4	Research	Thesis preparation	Mandatory	9	342	November–June in Year 3, assessment in Module 4 October–May in Year 4, assessment in Module 4

Section 2. Description of the Content of Practical Training

2.1. Implementation of Practical Training

Practical training is a form of educational activity that takes place during the course of studies under a given degree programme, with learners completing certain types of tasks pertaining to their future professional activities on the basis of practical training, at the University's subdivisions and external organisations acting on the basis of student internship agreements.

The goals and objectives of practical training are attained through the implementation of PTEs.

Practical training for HSE University students is carried out as part of the "Internship" module under a DP curriculum, which includes three types of elements: professional internship, project internship, and research-related practical training elements.

Internships can be organised as stationary or on-site internships:

- Stationary internships are organised at the University or at industry-specific organisations located in Moscow or the Moscow Region;
- On-site internships are organised at industry-specific organisations located elsewhere, not in Moscow or the Moscow Region.

Internships can be undertaken:

- in a continuous format by allocating a continuous period of study time in the academic calendar for undertaking the given internship; or
- intermittently; in this case, the academic calendar will feature alternating study periods for completing internships and study periods for taking theoretical classes (or organising them in parallel).

Specific internship types, methods and forms are determined and approved by the degree programme, taking into account the selected types of activities, field of study, and the key learning outcomes (if any).

2.2. Organisation of Practical Training

The workload of a given internship, in terms of credit units or academic hours, and its duration in terms of weeks and performance timeframes, are set forth in the curricula and academic calendars of the relevant degree programmes.

The primary participants of practical training are:

- students of degree programmes;
- academic supervisor;
- CIPE;
- programme office (PO) managers;
- internship supervisor from HSE University/faculty members and staff of the FCS subdivisions;
- internship supervisor from the relevant industry-specific organisation;
- FCS deputy dean in charge of teaching and learning support.

2.3. Term Projects in Year 2 and Year 3

2.3.1. General Requirements for Term Projects

Students' term projects must pertain to the fields of computer science, mathematics, or information technology.

The goal of completing a term project is to acquire skills in research work and applied activities.

The term project's objectives are to:

- gain experience in solving research and practical problems and tasks;
- consolidate knowledge and skills acquired in performing the degree course work;
- use the knowledge and skills acquired in various fields of applied and scientific research;
- improve data analysis skills;
- gain experience in studying specific scientific or applied fields;
- master industrial development tools;
- gain experience in interacting with project clients;
- gain experience in software product development;
- gain experience in working with educational and scientific literature;
- master the requisite skills for writing reports on research findings or the implementation of software development projects.

The project prerequisites for Year 2 are the courses completed in the first year of study under the degree programme.

The project prerequisites for Year 3 are the courses completed in the first and second years of study under the degree programme, as well as the Introduction to Statistical Learning, or Fundamentals of Statistical Learning, and research seminars (RS).

2.3.1.1. Key Participants of Project Work at FCS:

- **Project initiator** refers to the individual (or group of project participants) who drafts the project proposal (project description), providing the goals and conditions for participating in the project. HSE University staff, representatives of an IT company or of a company's IT department, as well as FCS students, may act as project initiators.
- **Mentor** refers to a co-manager of the project appointed from among the staff of the industry-specific organisation or a University staff member not engaged in teaching activities. The mentor is responsible for project implementation and providing assistance in preparing reports, but does not evaluate the participating student's performance. The mentor can provide feedback on the student's work based on the project outcomes.
- **Project manager** refers to the individual responsible for project implementation, evaluation of each participant's input in the project work, and the achievement of anticipated outcomes, as well as drafting interim and final reports on the project outcomes. Only University faculty members may serve as project managers; students of bachelor's and specialist programmes cannot be appointed as project managers. Master's and doctoral students, as well as representatives of an external organization who hold university degrees, can be appointed project managers provided that they are employed by the University as faculty members. Projects managers can serve as project initiators.
- **Project participant** refers to a student taking part in the project implementation.
- **Project supervisor** refers to the degree programme's academic supervisor and/or staff member appointed by the academic supervisor, who are authorised to approve the project proposals, take part in preparing methodological materials for students, approve project reports drafted by second- and third-year students, and appoint project managers.
- **CIPE** refers to the Centre for Internships, Projects and Entrepreneurship, which oversees coordination of the project work and the provision of organizational and methodological support of project activities of the bachelor's students, the collection and distribution of project proposals, coordination of students' interactions with the project manager, the organisation of interim assessments, gathering reporting documentation on projects, and organising the work of commissions for the defence of projects.
- **Programme office** of the bachelor's programme at the FCS refers to the Curriculum Support Unit for Undergraduate Programmes at the FCS, which oversees the inclusion of projects in students' individual curricula (IC), issuing lists of students who have completed their projects under their respective ICs, preparing evaluation record sheets for commissions for the defence of projects, entering students' final project grades in the information systems, monitoring academic performance and academic failures in the carrying out of term projects, and regularly informing the CIPE concerning students' dismissals, transfers, academic leaves, and reinstatement, etc.
- **Academic Staff Support Unit (ASSU) at the FCS** refers to the unit that oversees registering the respective project managers in the University's information systems, assigning the project management workloads to the relevant FCS faculty members, signing independent contractor agreements (ICA) with representatives of external organisations, as well as with the master's and doctoral students of the University for their employment by the University as faculty members; signing ICAs with teachers and staff of other University

subdivisions if no workloads can be assigned to them in their own subdivisions, and promptly notifying the CIPE if any issues arise when assigning workloads to the project participants and/or signing ICA agreements.

2.3.1.2. Project Types: Applied (Software) and Research Projects

Students' term projects vary depending on their goals, the specific nature of the work, and the planned outcomes, and may be implemented as a research project or an applied (software) project.

The research project is focused on acquiring and applying new knowledge about the object (phenomenon) under consideration, or developing new methods and improving existing methods and algorithms for solving theoretical and applied problems. The solution of a specific theoretical problem, experimental results and relevant conclusions, a proven mathematical statement, and a new method developed by a project participant, as well as the application of already known methods to new problems and the comparative analysis of methods (which did not previously exist), etc, may be presented as the outcomes of a given project.

As a rule, work on a research project includes:

- overview and scientific evaluation of previous works on similar topics;
- detailed description of the relevant mathematical or other models and/or algorithms;
- theoretical assessment of the complexity of the main algorithms for solving the relevant problem;
- plan and software implementation of a computational experiment;
- experimental verification of the suitability of the model (correctness, completeness, accuracy, etc);
- experimental (empirical) analysis of the computational complexity of the proposed solutions.

An applied (software) project must be focused on solving a specific applied software development problem (hereinafter referred to as “software”). As a rule, an applied project involves:

- justification of the relevance and practical significance of the software being developed;
- overview and comparative analysis of existing approaches, models, methods, algorithms, and analogues;
- informed choice and detailed description of models, methods, and algorithms;
- informed choice of development tools and technologies;
- detailed, formalised description of the software (general software architecture, structure of classes and their interfaces, description of the database structure/software implementation of methods and algorithms, etc.);
- software development;
- development of a test plan and/or computational experiments;
- carrying out tests and/or computational experiments and analysing the outcomes;
- comparison of the developed software with known analogues in terms of their functionality, efficiency, ease of use, timing characteristics, etc.

2.3.1.3. Project Forms: Individual and Team (Group) Projects

Applied (software) projects may be implemented by students working individually or in a group (group or team projects).

It is recommended that students of the DSBA Bachelor's Programme implement research projects individually; in exceptional cases, with approval of the academic supervisor, a team-based research project may be carried out.

A team may be comprised of no more than four students.

When working in a team, the project tasks must be clearly divided among team members, and the work of each team member will be assessed individually. The description of the implementation criteria, and the format and defence procedures for team projects are provided in detail in the relevant sections below.

All members of the project team must use the same team project name in their papers and reports.

2.3.1.4. Individual Projects on the Same Topic Completed by Several Students

With the permission of the project supervisor and the project manager, several students may complete individual projects on the same topic. At the same time, however, the project manager must ensure sufficient variation among projects carried out by different students on the same topic. The project outcomes obtained by all students who complete their respective projects on the same topic should differ. The proper degree of variation may be ensured by setting different tasks and using different software development technologies, different research methods, etc. In all other aspects, there are no special features in the procedures for preparing and evaluating projects carried out on the same topic.

2.3.2. Stages of Term Project Implementation

See Annex 1 for a list of the stages and deadlines for the selection, approval, preparation, and defence of term projects under the degree programme.

The CIPE prepares an updated version of Annex 1 by September 20 every year, which outlines the relevant project deadlines for the current academic year.

2.3.2.1. Project Proposals and Project Descriptions

A project is proposed by the project initiator, who fills in an online application form with a Project Description attached (Annex 2) by the deadlines stipulated in Annex 1.

A project may also be initiated by an individual student or a group of students, who should submit a project proposal and independently identify a project manager and obtain the latter's approval for their project proposal. Project proposals initiated by students must be submitted online via an application form with a Project Description attached (Annex 2). Proposals for projects initiated by students must be submitted by the deadlines stipulated in Annex 1.

Project proposals must be approved by the project supervisor by the deadlines stipulated in Annex 1. The project supervisor may request that the project initiator provide clarification of the project's topic, contents, and anticipated outcomes.

2.3.2.2. Choosing Projects by Students and Choosing Project Participants from Among Students

Students submit applications to project managers/mentors to take part in one or several approved projects. Project managers (mentors) then select project participants and inform relevant students and CIPE about the outcomes. Those students whose applications to take part in a given project have been rejected can choose to apply for another project.

Students fill in a special form prepared by CIPE for choosing a project. In order to choose a project, students must upload an Application form signed by the student and the project manager (Annex 3), and the Project Description (Annex 2) by the deadlines stipulated in Annex 1.

If a project has not been previously approved by the project supervisor of the student's degree programme, the student must obtain the project supervisor's consent for completing the given project. Such approval may be provided either by corporate email (with a copy to CIPE), or by the project supervisor when signing the student's project selection application.

CIPE will upload information about projects chosen by students to HSE University's information systems.

If a project selection application has not been uploaded by the student within the period initially established by CIPE, the project may still be selected by the Checkpoint 1 date, with an explanatory note submitted to the academic supervisor outlining the reasons the student missed the initial deadline for choosing the project.

A student's failure to choose their term project's topic on time, as well as to complete the project within the period established by the faculty, will be considered as an academic failure. If no project has been chosen by the student by Checkpoint 1, he/she will not be admitted to the project defence in the spring. The aforementioned academic failure may be expunged only during the autumn retake period.

2.3.2.3. Stages of Completing the Project. Ongoing Control Dates and Checkpoints

Starting from December and up to the established project completion deadline, the TP manager and the bachelor's degree programme office at FCS provide consultations at the student's request, including on any questions relating to the TP public defence procedure.

Ongoing control dates in the form of so-called Checkpoint 1 (hereinafter, "CP 1") are set in February of the current academic year in the course of term project work.

Checkpoint 2 ("CP 2") involves the defence of projects before the commission in April–June of the current academic year.

2.3.2.4. Reports Prepared by Checkpoint 1

Interim reports must be prepared by students by CP 1. Different requirements will be set for the writing of reports for software and research projects. Students of the DSBA Bachelor's programme submit their interim reports in English.

The bibliography and list of references to sources in the text of reports must be prepared in accordance with the System of Information, Library and Publishing Standards[1] for all types of projects under all degree programmes. Each bibliography item must refer to a specific

[1] See GOST P 7.0.100-2018, GOST P 7.0.5-2008, GOST_7.82-2001, GOST_7.83-2001.

footnote in the text of the report.

The relevant UDC[2] must be specified on the front page of the research project report. The UDC has a hierarchical structure, for example: 004.02, 004.424. A project may cover several areas of study, and the corresponding UDC must be specified and separated by commas in this case.

Reports of any type prepared by CP 1 may include additional materials in the annex provided at the discretion of the student and/or project manager.

The requirements for reports to be prepared by CP 1 by second-year DSBA students are outlined on p. 4 of Annex 5 “Draft of the Term Project Text”. The relevant formatting recommendations are provided in Annex 7.

The requirements for reports to be prepared by CP 1 by third-year DSBA students are outlined on p. 4 of Annex 6 “Draft of the Term Project Text”. The relevant formatting recommendations are provided in Annex 7.

2.3.2.5. Implementation Stages at Checkpoint 1

Implementation Stages at Checkpoint 1:

- interim reports at CP 1 must be prepared by the student and submitted to the project manager within 2 (two) weeks before the deadline for uploading into the system, as set by CIPE for submitting reports;
- documents must be reviewed by the project manager, who then notifies the students of any errors or defects within one week;
- the student must then revise or amend the report accordingly, taking the project manager’s comments into account;
- interim reports must be uploaded by the student to the term project reporting system, as proposed by CIPE, by the deadlines established by CIPE (Annex 1).

2.3.2.6. Evaluation of the Student’s Progress at Checkpoint 1

The project managers evaluate the student’s progress, the ongoing outcomes of project work, and interim reports.

The formula for calculating the TP final grade given to DSBA Bachelor’s programme students includes grades for CP 1 in the pass/fail format. If the student gets a passing grade, the grade for CP 1 in the final formula equals the term project manager’s grade provided in the relevant feedback. If the student fails to get a passing grade, the grade for CP 1 will equal 0. The student will be given a passing grade for CP 1, provided that:

- the interim report has been uploaded on time to the reporting system proposed by CIPE for submitting reporting documentation;
- the report meets all formal requirements (for its structure, formatting rules, etc);
- the student’s report and ongoing outcomes meet the project manager’s requirements.

A failing grade can be given to the student by the academic supervisor and/or project supervisor for CP 1 if the given student did not fulfil the requirements for interim reporting documents.

Project managers must forward CP 1 grades to CIPE at the following email address: cppr.cs@hse.ru, unless otherwise specified by CIPE.

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[2] http://www.udcsummary.info/php/index.php?id=13358&lang=ru

2.3.2.7. Changing a Topic and/or Project Manager

If the project has undergone any changes regarding the type, form, project manager, and/or topic of the project during the project work process, the student must submit an application to change the topic and/or project manager.

The TP topic may be changed upon the project manager's approval before the deadlines established by CIPE (Annex 1):

- An application for changing a topic and/or project manager (Annex 4) must be signed by the student and the project manager and submitted for approval to the academic supervisor, using the methods proposed by CIPE.
- Upon receipt of the academic supervisor's approval, the student must submit an application for changing the project topic (Annex 4) and the project description (Annex 2) to CIPE.

The deadlines for changing the TP type or form are specified by CIPE (in Annex 1):

- An application for changing a topic and/or project manager (Annex 4) must be signed by the student, the previous project manager, and the new project manager, and be submitted for approval to the academic supervisor.
- Upon receipt of the academic supervisor's approval, the student must submit the signed application to CIPE.

The TP form/type can be changed with the project manager's consent by the deadlines established by CIPE (Annex 1):

- An application for changing a topic and/or project manager (Annex 4) must be signed by the relevant student and project manager.
- The signed application must be submitted to CIPE.
- CIPE then uploads information about the changed TP topic and/or project manager to HSE University's information systems.

If the topic of a student's project in the final documents submitted for the defence differs from that specified in the application for choosing the TP, or in the last application for changing the project topic, the student will be admitted to the defence only at the discretion of the commission.

If the project manager specified in the final documents uploaded by the student for the defence differs from that specified in the application for choosing the TP or in the last application for changing the project manager, the student will not be admitted to the project defence.

2.3.2.8. Preparing for the Project Defence

The TP defence must be held as per the schedule, approved by CIPE jointly with the academic supervisors of the Degree Programme (DP) and the programme office (PO). Students must be informed of the dates of the TP defence no later than three weeks before the starting date of the defence.

The same deadlines will be set for students of the relevant year of study for uploading documentation into the system proposed by CIPE for submitting reports. The first date of the defence will be considered the starting point.

The TP defence schedule will be drafted by the CIPE staff jointly with the PO managers, and the students must be informed of the dates of the TP defence no later than two weeks before the starting date of the TP defence under the relevant DP.

A draft version of the TP together with related reports must be submitted to the project manager 21 calendar days before the starting date of the TP defence under the relevant DP. The TP and related reports will be revised by the student, taking the project manager's comments into account.

The student must submit the final version of the TP and related reports to the project manager no later than 14 calendar days before the starting date of the TP defence under the relevant DP.

The student will upload the final version of the TP report and other reports into the system proposed by CIPE for submitting reports no later than 14 calendar days before the starting date of the TP defence under the relevant DP. Standard templates for the title pages of individual projects are provided in Annexes 8–9. Standard templates for the title pages of team (group) projects are provided in Annexes 10–11.

A Plagiarism Report will be generated, based on the results of a check of student papers for signs of plagiarism, which will serve as confirmation that the relevant papers have been uploaded into the system proposed by CIPE for submitting reports. The plagiarism check report indicates the percentage of borrowing detected in the given paper. The acceptable percentages of borrowed materials contained in papers prepared by DSBA students are as follows:

- in applied projects – 20%,
- in research projects – 20%.

If the percentage of borrowed materials indicated in the Plagiarism Report exceeds the acceptable parameters but the project manager still recommends that the student be admitted to the defence, the project manager should describe the reasons for such a high percentage of borrowing in a specially designated field within his/her feedback (e.g., if the given student's research materials presented in his/her report had previously been published in an academic journal or conference report). The academic supervisor will make the final decision on the student's admission to the defence.

The presentation of a report must be uploaded no later than one day before the starting date of the TP defence under the relevant DP. Annex 14 provides a sample model presentation structure.

If the TP materials have not been uploaded into CIPE's proposed report submission system on time, the student will not be admitted to the defence.

2.3.3. Term Project Supervision

During one academic year, a single term project manager can supervise such PTEs as the "Term Project" and "Thesis" for a maximum of 30 students and have a maximum workload of up to 500 academic hours. These limitations do not apply to the PTE "Internship".

The term project supervisor is responsible for the project organisation and implementation, including the following functions:

- preparing the "Project Description" in accordance with the form provided in Annex 2;
- filling in the project application form with the relevant Project Description attached;
- accepting applications submitted by students, as well as selecting students for participation in projects;
- assigning responsibilities among project participants, if necessary;
- assisting project participants with project organisation and implementation, as

well as preparing project-related reports;

- supervising and evaluating project outcomes at the interim project implementation stage (at CP 1) within the established timeframe;
- preparing feedback on the project work completed by each student within the established timeframe;
- participating in the work of defence commissions for term projects.

The project manager is authorised to recruit and replace project participants if any participants are unable to fulfil their project-related responsibilities due to objective circumstances (such as illness and other circumstances beyond the student's control), as well as in the event that any project participant is negligent in performing their respective responsibilities, thereby jeopardising the completion of the project. The project manager must notify CIPE by corporate email of any changes in the composition of project participants within three working days following the relevant change.

2.3.3.1. Evaluating the Project Outcomes

The student must submit the final version of the TP to the project manager no later than 14 calendar days before the starting date of the TP defence under the relevant DP.

After receiving the final version of the student's TP, the project manager provides feedback in accordance with the general criteria specified in the project manager's feedback form and provides brief comments together with the grade that assess the given TP's key strengths and weaknesses.

The team project manager prepares individual feedback comments with an assessment of each team member's input.

The project manager will forward such feedback to the CIPE staff and students no later than seven calendar days before the starting date of the defence under the relevant DP. Feedback should be sent to CIPE via the following email address: cppr.cs@hse.ru, unless otherwise instructed by CIPE.

If the percentage of borrowing matches in the Explanatory Note/Plagiarism Report exceeds acceptable parameters but the project manager still recommends that the given student be admitted to the defence, the project manager should describe the reasons for such a high percentage of borrowing in a specially designated field within his/her feedback (e.g., if the given student's research materials presented in his/her report had previously been published in an academic journal or conference report). The academic supervisor will make the final decision on the student's admission to the defence.

Standard templates for the project manager's feedback on a TP prepared by DSBA students are provided in Annexes 12–13.

The project manager may give no grade in their feedback if the student fails to submit the TP materials on time. In this case, the project manager's grade is considered zero.

The project manager is entitled not to provide any feedback if the student fails to submit the TP materials on time. In this case, the project manager must inform CIPE about their reasons for not providing any feedback, and the project manager's grade is considered zero in such cases.

The project manager provides their feedback in Russian or in English.

2.3.4. Requirements for Final Project Reports

Projects and reports must be prepared, submitted and defended by the DSBA students

in English only.

Requirements for the final versions of a TP and related reports prepared by second-year DSBA students are outlined in Annex 5. The formatting requirements are outlined in Annex 7.

Requirements for the final versions of a TP and related reports prepared by third-year DSBA students are outlined in Annex 6. The formatting requirements are outlined in Annex 7.

2.3.4.1. Special Aspects of Final Reports Prepared by Team Project Participants

Upon completion of a team project, the relevant DSBA students submit a group report, which describes the contributions made by each team member in the project and indicates which specific sections of the project report each team member was responsible for drafting. This information is provided at the end of the introduction (describing the allocation of tasks among team members). With the exception of the introduction/bibliography and conclusion, notes should be made at the end of each chapter indicating which individual team members were responsible for the work featured in the given chapter.

If the project has been completed by the DSBA students jointly with students of other DP, then the DSBA students must file a report describing the shared part of the report and specifying the contribution of each team project member. The segment of the overall project work that was completed by team members from other DPs should be specifically noted as such. Several sentences may be devoted to the contents of their segment of the overall project work if more details would be required for understanding the general format of the project.

2.3.5. Term Project Public Defence

A public defence is mandatory for term projects completed by FCS bachelor's students.

TP public defence commissions are established by CIPE together with managers of the FCS subdivisions and academic supervisors of the bachelor's DP in FCS, with assistance from the heads of relevant FCS subdivisions. Commission members are drawn from among FCS faculty members and the staff of other HSE University subdivisions and other higher educational institutions, research centres, and IT companies and the IT subdivisions of other companies. A chairperson and secretary are appointed for each commission.

The TP public defence must be held in Module 4 of the relevant academic year, as per the approved schedule (Annex 1).

The following materials must be submitted to the relevant TP defence commission by each student:

- TP final report;
- Term project manager's feedback;
- Report generated by the Anti-Plagiarism system;
- Repository codes and references (mandatory requirement for applied projects; for research projects, if needed);
- Report presentation;
- Other materials, as appropriate.

All documents must be submitted in electronic format and uploaded by students to projects of relevant courses into the CIPE-proposed report submission system.

The defence procedure is comprised of the student's presentation, questions posed by commission members, and the student's answers.

The student's report must be accompanied by a presentation; a sample model presentation structure is provided in Annex 14. The student can use necessary electronic and technical devices for demonstrating the software program developed as part of the project's implementation.

DSBA students prepare their presentations and project reports in English. Commission members also pose their questions in English.

The project defence can be held remotely using video recording technologies.

The defence of a team project takes place before the same commission. In their report, each student describes the outcomes obtained individually in the course of work on their subsystem, demonstrating the place of the given subsystem in the functioning of the entire software system and their contribution to the team's overall results. In addition to discussing their personal tasks and results, at the very beginning the first speaker representing a team project should discuss the team's overall goal for the project and provide other necessary information about the project as a whole.

The recommended duration of the student's presentation at an individual project defence or the report by the first speaker at a team project defence is seven minutes, the maximum allowable duration of the presentation is 10 minutes.

7* (the number of members) minutes are given to the team's overall presentation, 5* (the number of members) minutes are given to the questions of the commission. After the allotted time the commission should start hearing other students.

Each student has five minutes to answer questions posed by the commission members.

If students from different DPs and/or years of study take part in a team project, all team members can take part in the defence before the same commission during the defence period of the DP and the year of study at a defence occurring earlier. Participants in a team project where defences are scheduled for a later period may decline to take part in earlier defences; in this case, the defences of the team project will be heard separately by different commissions.

2.3.6. Term Project Evaluation

Each commission awards grades to students after the defence.

Five-point and 10-point grading scales are used to assign grades. Each student who takes part in a team project is assigned their own grade.

If the project manager of a student who presented a report is a member of the defence commission, then he/she does not participate in the evaluation of the student's defence.

The commission may award a higher final grade if the given student spoke at an academic conference in the field of IT on the specific topic covered by the project, or has been awarded registration or implementation certificates for a software program, or in case the student's paper has been published/accepted for publication in a compendium of articles/scientific journal, or if the student is the winner of the Student Research Papers Competition (NIRS Competition) at HSE University in the "Computer Science" category, etc.

The commission chairperson fills in an evaluation record sheet at the end of the defence procedure. The completed evaluation record sheet must be signed by all commission members.

Term projects are subject to the same appeals procedure that applies to examination results as outlined in the Regulations for Interim and Ongoing Assessment of Students at HSE University[3] (Section VI).

[3] See https://www.hse.ru/docs/551872110.html

2.3.6.1. Evaluation Criteria for Students' Term Project Defence

Term projects prepared by DS&DA students will be evaluated by each commission member, who assigns a grade to each student, taking into account the quality of the software program/research, as well as the quality of the student's report and presentation at the defence.

2.3.6.2. Formula for the DSBA Students' Term Project Defence Evaluation

Grades assigned for the project defence are calculated using a formula under a 10-point grading scale representing the arithmetical mean of all grades awarded by commission members. Grades awarded by the commission are deemed to be blocking.

The resulting grade for the term project is calculated under a 10-point grading scale, according to the following formula:

0.2 * Interim grade + 0.3 * project manager's grade for the project + 0.5 * commission's grade for the defence.

The interim grade equals either zero (if a student fails to submit an interim report, or in case the interim report does not meet the established requirements), or the project manager's final grade for the project (if a student submits an interim report on time in accordance with the requirements).

If the project manager's feedback has not been provided on time, and the project manager fails to inform CIPE that the lack of feedback equates to a zero grade, the commission's grade for the term project will be considered the student's final grade for the term project.

If the commission's grade differs significantly from the project manager's grade (a difference of three or more points is deemed significant), the commission can deem its grade awarded to the student as the final grade. In this case, the student will be informed about the grounds for the commission's decision (e.g., with reference to the shortcomings of the term project).

2.3.7. Procedure for Expunging Academic Failure under a Term Project

A student's failure to appear at their defence without a legitimate reason, non-admission to defence, or receipt of an unsatisfactory grade for their term project will be deemed an academic failure, which must be expunged by the student as per the established procedure.

The procedure for retaking a TP is outlined in the Regulations for Interim and Ongoing Assessment of Students at HSE University (Section VII).

Fourth-year students completing their projects under their respective individual curricula (IC) for their second or third year of study, who failed to defend their project in Module 4, are subject to academic failure and must retake the project during the retake period held in autumn.

Students are free to change the topic and/or the TP manager by the deadlines established by CIPE at the retake of their defence. The appropriate changes will be entered into the HSE University information systems by CIPE.

In case the TP topic is changed before the retake of the defence, the CP 1 grade will be considered 0.

The student must submit a set of documents for the defence retake that have been updated to reflect the modifications to the TP.

The relevant TP manger will submit new feedback on the student's TP at the retake of

the defence.

The CP 1 grade awarded to those DSBA students who have passed CP 1 and retake their defence on the same topic with the same project manager, in the final formula equals the TP manager's grade in the new feedback submitted for the retake of the defence.

Those students who received an academic failure for their TP will prepare and defend the TP in accordance with the defence procedure described in these Methodological Recommendations, using the same assessment formulas.

The first retake is held according to the project defence format and the final grade is given according to the standard formula.

The second retake follows the same format as the project defence, while the final grade is awarded according to the standard formula, with the following exception: if the student earns a grade of 8 or higher for the defence, a minimum final grade of 4 points is guaranteed.

If students apply for the respective individual curricula for the Course project discipline and postpone participation in the second defence retake for a year, they are free to change the project by the deadlines established by CIPE for changing projects before the retake period held in autumn.

If students apply for the respective individual curricula for the Course project discipline, it is allowed to retake the project in the spring (main) period of the term project defence with the consent of the student and the academic supervisor of the programme. In this case, students are free to change the project by the deadlines established by CIPE for changing projects by the main period of the term project defence.

If students apply for the respective individual curricula for the Course project discipline, the student does not submit the interim documentation for Checkpoint 1 (CP 1) again. The grade received for CP 1 within the period initially established by CIPE remains.

If students apply for the respective individual curricula for the Course project discipline and change the topic of the project before the postponed participation in the second defence retake, the CP 1 grade will be considered 0.

2.3.8. Requirements for Publication and Storage of the Term Project

The TP defence commission may recommend publishing the TP outcomes in appropriate academic and technical journals, as well as posting the TP materials on the website of the FCS at HSE University and on other appropriate internet resources.

The TP materials may be published only with the student's consent.

Outcomes of the completed software project may be submitted for obtaining a State Registration Certificate of Software Programs[4].

Upon the completion of studies by students, the TP must be stored by CIPE for two years.

2.4. Professional Internship, Years 1–4

2.4.1. General Requirements for the Professional Internship

Practical training elements (PTE) in the form of a "professional internship" are focused on organising the necessary conditions for students to acquire professional skills and experience in professional activities, as well as immerse them in the relevant professional environment and help them develop professional competencies in their chosen field of training

[4] For more details on the State Registration of Software Programs or Databases, see the Rospatent website or Gosuslugi resources.

and achieve key learning outcomes.

The key learning outcomes achieved by students during their professional internships ensure their direct acquaintance with the relevant professional environment and the development of practical competencies in professional activities. The overall environment, means and methods of students' activities applied in practice should be as close as possible to the means and methods actually used in professional activity in the given field.

A professional internship in the field of Data Science and Business Analytics may include academic internships, work placements, and other types of internships.

Students are free to choose the place of their internship at their own discretion, provided that a student internship agreement and offer/acceptance letters have been signed between the University and the respective industry-specific organisation. The selected organisation must be engaged in the activities that correspond to the professional competencies acquired by students under the given degree programme (DP).

The field of the organisation's activities, as well as the quality criteria for DP implementation in the form of practical training in the given organisation, will depend on the future professional activities and the field of the DP, taking into account the relevant federal educational standards, HSE University's educational standards, and relevant professional standards. Student internship agreements may be concluded only with organisations that present no risk of any damage to the business reputation of the University or its faculty.

Once students have chosen an internship location at their own discretion, they fill in the appropriate application form available on the CIPE website, providing information on the location of the planned internship at least one month before the PTE start date, for the further preparation of the necessary documents.

Those students who combine study with work can undertake their internship at their place of employment in cases where their professional activities meet the requirements of the degree program for an internship. An internship at the student's place of employment must be approved by the academic supervisor. The student submits an application in the established format with the following documents attached: a scanned copy of the signed agreement/annexes thereto, an individual assignment, and a work plan (schedule) for completing the internship, signed by the internship supervisor appointed at the given industry-specific organisation. The DP academic supervisor reviews the student's application with the attached documents and makes a decision on whether or not the internship outcomes can be accepted, based on an understanding of the content of the internship, as well as the necessary skills and abilities (competencies) to be acquired by the student during the internship, taking the DP curriculum into account. An affirmative decision by the academic supervisor will give the CIPE staff grounds to register the application with the date and place of the student's internship in order to enter the reporting data in the student's records.

Travel expenses to and from the internship site incurred by students as part of their on-site internships are not covered, and any additional expenses relating to living outside of their permanent place of residence (per diem) are not reimbursable.

Students cover their travel expenses to and from the internship site by intercity and city public transportation at their own expense.

The working time during a professional internship at an industry-specific organisation for students aged 16 to 18 years old should not exceed 35 hours per week (Article 92 of the Labour Code of the Russian Federation, hereinafter referred to as the "LCRF"); from the age of 18 years old and older, the limit is up to 40 hours per week (Article 91, LCRF); for students within the category of Group I or II disabled persons, the limit is up to 35 hours per week (Article 92, LCRF).

The practical training workload in credit units or academic hours, the duration in weeks and the overall timeframe will be established in the curricula and academic calendars of the respective degree programmes.

In the period of a professional internship, students (as interns) must observe the relevant labour protection rules, safety measures, and fire safety rules, as well as the organisation's internal regulations.

Special aspects of PTE implementation as part of a "professional internship" under a degree programme are regulated by the internship programme of the given DP.

All types of internships provided for by the degree programme will take place on the basis of student applications submitted via HSE University's online information system (EIOS) and student internship agreements signed between the Faculty of Computer Science (FCS) and the relevant industry-specific organisations providing student internship opportunities. The student's application must be signed by the academic supervisor.

Lists of students assigned to HSE University's subdivisions or a specialised organisation, as well as of the form, type, methods, and timeframe of the internship, are prepared for student internships by students of all modes of study.

A student internship agreement must be signed for organising student internships at an industry-specific organisation between the relevant organisation and HSE University. Alternatively, offer/acceptance letters may be signed by the University.

Upon completion of their professional internship, students upload a complete set of reporting documents (individual internship assignment, work plan (schedule) for completing the internship, internship report, and feedback from the relevant industry-specific organisation) in the corresponding blocks of the CIPE-proposed report documentation submission system.

Feedback provided must be signed by the head of the relevant industry-specific organisation and authenticated by the corporate seal. If a student's internship has been completed at HSE University, then the signature of the internship supervisor at HSE University will be sufficient. The assessment given in the feedback should reflect the quality of the student's performance in carrying out the tasks stipulated by the internship programme, individual assignments received from the internship supervisor, or assignments received from the internship supervisor at the industry-specific organisation; the level of theoretical knowledge; an assessment of the student's personal and professional qualities demonstrated in the course of the professional internship; an assessment of work performance and discipline; and the general conclusions of the internship supervisor at the relevant industry-specific organisation in regard to the student's completion of the internship programme.

The professional internship outcomes should be evaluated as part of the interim assessment. Evaluation of the professional internship outcomes should be based on the DP's criteria for the development of professional competencies, including the student's readiness to successfully carry out professional activities under the relevant conditions, as well as taking into account the requirements set forth in the regulations on the ongoing and interim assessment of student academic performance.

2.4.2. Professional Internship Participants at FCS:

- Students of core degree programmes;
- Academic supervisor;
- CIPE;
- Programme office (PO) managers;

- Internship supervisor at HSE University/faculty members and staff of FCS subdivisions;
- Internship supervisor at the industry-specific organisation;
- FCS deputy dean for teaching and learning support.

In the period for completing practical training elements (PTE), students:

- take part in the organisational meeting for students of their course of study/group;
- arrive at the place of internship on time, according to their assignment;
- in case of non-appearance at the relevant industry-specific organisation hosting their professional internship, inform the internship supervisors at the relevant industry-specific organisation and HSE University about their reasons for failing to appear at the professional internship site;
- complete assignments provided for in the internship programme diligently and on time;
- carry out instructions and assignments of the internship supervisor from the relevant industry-specific organisation related to the internship programme implementation;
- complete individual tasks;
- prepare a professional internship report to be submitted to the internship supervisor at the relevant industry-specific organisation for verification;
- draft documents for the professional internship (applications, individual assignments, reports);
- observe internal labour regulations and confidentiality requirements;
- observe labour protection rules, safety measures, sanitary and epidemiological rules and hygienic standards, and fire safety rules;
- submit a professional internship report to the internship supervisor at HSE University and defend the professional internship outcomes in accordance with the academic calendar.

The internship supervisor at HSE University and academic staff at FCS are authorised to:

- provide methodological assistance to students completing individual assignments;
- check the student reports for compliance with the requirements of the internship programme;
- evaluate the outcomes of the given student’s professional internship.

The internship supervisor at the industry-specific organisation, as well as the academic staff and staff of the FCS subdivisions are authorised to:

- approve individual assignments and the content and anticipated outcomes of the professional internship;
- provide workplaces to students in accordance with the work plan (schedule) for completing the internship;
- ensure the necessary conditions for students to complete the professional internship programme and complete individual assignments;
- allow students to use the materials and technical documentation available within the organisation;
- provide assistance in selecting materials for completing individual assignments;

- familiarise students with the requirements of labour protection and safety rules, sanitary and epidemiological rules, and fire safety rules, as well as internal labour regulations, being responsible for their compliance;
- report any cases of student violations of internal labour regulations, labour protection and safety regulations of the relevant industry-specific organisation to the internship supervisor at HSE University;
- suspend the implementation of the degree programme's PTE in the form of an internship by a given student if a student fails to fulfil their duties during the internship and violates confidentiality requirements;

- provide an opinion on the student's work during their professional internship in the form of feedback.

CIPE at FCS will:

- register proposals for professional internships and assign students to internship positions at appropriate industry-specific organisations or University subdivisions;
- draw up a list of industry-specific organisations recommended for students as internship hosts from the general list of FCS organisations operating under student internship agreements with FCS;
- draft proposals for agreements with industry-specific organisations for student professional internships;
- conduct orientation sessions with students before they start their professional internships;
- oversee the deadlines for professional internships and collect reporting documents in accordance with the requirements of the DP internship programme;
- prepare lists of students referred to the professional internship, which are issued without exception to all students who are required to complete a professional internship in accordance with the academic calendar;
- issue referrals for professional internships for students (if necessary) for completing professional internships at relevant industry-specific organisations;
- create and maintain databases of relevant industry-specific organisations;
- prepare drafts of student internship agreements with the relevant industry-specific organisations (Annex 14);
- prepare draft offer letters for student internships (Annex 15);
- maintain a register of employers and agreements with partners of the Faculty of Computer Science for internships (including in HSE University's online information system [EIOS]);
- oversee the assignment of the practical training elements in the given student's individual curriculum;
- coordinate the timeline of the student completing practical training elements;
- oversee the organisation of examinations (if provided for by the internship programme of a given degree programme) and retakes (if necessary).

The academic supervisor jointly with the internship supervisor at FCS will:

- develop internship programmes, as well as teaching and learning materials in accordance with the requirements of the relevant federal educational standards, HSE University's educational standards, and the educational programme;
- verify whether the student's choice of an internship location meets the

requirements of the degree programme and, if it does, include information about the chosen professional internship location in the application for drawing up student internship agreements with the relevant industry-specific organisations;

- evaluate the given student's professional internship outcomes.

The FCS deputy dean for teaching and learning support coordinates the organisation of the "Internship" module at FCS.

2.4.3. Academic Internship, Year 2

The internship is aimed at familiarising students with the practical applications of the methods studied as part of their academic courses.

The internship objectives are as follows:

- Consolidating and expanding knowledge and skills acquired as part of mastering the academic courses;
- Gaining experience of working with academic and research materials;
- Gaining experience in solving research and practical problems;
- Mastering report writing skills.

Courses studied during the first year of study under the DSBA degree programme are the prerequisites for the internship.

Internships can be organised in a stationary, on-site, or remote format and held primarily at HSE University. Students are free to select the place of their internship at their own discretion.

As a rule, academic internships are held in the format of a mini-course, which includes studying scientific articles and writing an abstract, solving educational problems in programming or mathematics, and attending specialised summer or winter schools (with a certificate of completion issued).

Upon the DP supervisor's approval, students can choose a different period of internship by submitting an application to CIPE at FCS with the dates and location of the internship specified.

2.4.4. Work Placement, Year 3

The internship is aimed at acquiring experience in solving practical problems.

The internship objectives are as follows:

- Consolidating and expanding knowledge and skills acquired as part of mastering the academic courses;
- Gaining experience in solving research and practical problems;
- Mastering industrial development tools;
- Mastering report writing skills.

Courses studied during the first three years of study under the DSBA programme are the prerequisites of the internship.

Internships can be conducted in a stationary, on-site, or remote format and held primarily at external organisations.

As a rule, work placements involve tasks typical for specialists in the field of software development, design and support of fault-tolerant services, data analysis, and building intelligent systems.

Upon the DP supervisor's approval, students can choose a different period of internship

by submitting an application to the programme office with the dates and location of the internship specified.

2.4.5. Pre-Graduation Internship, Year 4

The internship is aimed at acquiring experience in conducting research and writing research reports.

The internship objectives are as follows:

- Gaining experience in working with academic and research materials;
- Gaining experience in studying a specific scientific or applied field;
- Gaining experience in solving research and practical problems;
- Consolidating and expanding knowledge and skills acquired as part of mastering the academic courses;
- Mastering skills for writing reports on completed research projects.

Courses studied under the DSBA programme are the prerequisites of the internship.

Internships are conducted as stationary internships and held at HSE University.

A report with a description of the outcomes of an individual assignment received from the internship supervisor, as well as the preliminary defence of the thesis, serve as a form of internship reporting. A clear statement of the problem, the purpose and objectives of the thesis, the subject and object of the thesis study, individual chapters of the paper, provisional or completed analytical data on the topic of the thesis, as well as a list and overview of bibliographical sources on the key issues of the research or the software project, should be provided as the internship outcomes, which can be used in the thesis. A brief summary of the internship outcomes is provided in the conclusion.

The DSBA programme office organises a commission for the preliminary defence with support of the faculty's subdivisions and the academic supervisor provided.

The internship grade is awarded as a pre-defence grade.

Pre-Graduation Internship pre-defence formula: 0,4*supervisor's grade+0,6*commission's grade

2.5. Thesis Preparation, Year 4

The aim of a thesis is to acquire experience in research and applied project work, thereby demonstrating the student's qualifications.

The thesis objectives are as follows:

- Gaining experience in working with academic and research materials;
- Gaining experience in studying a specific scientific or applied field;
- Gaining experience in solving research and practical problems;
- Consolidating knowledge and skills acquired as part of mastering the academic courses;
- Mastering skills for writing reports on completed research projects.

Courses studied under the DSBA programme are prerequisites for the thesis preparation.

Outcomes of a thesis must be formulated in a report, which is prepared following the requirements outlined in the methodological thesis preparation guidelines under the degree programme.

A thesis is subject to a mandatory defence before the State Examination Board (SEB).

Feedback and a review must be provided by the thesis supervisor for the thesis defence. The SEB members award a grade for the thesis based on the defence results, while the grade given by the reviewer will be considered as a recommended grade only. The assessment criteria and the recommendations for presentations are provided in the methodological thesis preparation guidelines under the degree programme.

2.5.1. General Requirements for Theses

2.5.1.1. Theses Formats

According to the type of work, term papers and theses are divided into research and software projects.

In accordance with the format of theses, they are exclusively the individual work of a student; however, they can be completed in groups as well as part of a large-scale common project. Each participant prepares their own thesis text for an individual defence with clearly stated outcomes. All requirements for theses in this case, including the percentage of matches, remain unchanged.

Theses can be prepared as a research or software project. Achieving a scientific breakthrough or innovation in research outcomes is the key requirement for a research paper. If a thesis is prepared as a software project, no breakthrough or innovation is required, but the student is expected to solve a technically complex and significant problem, substantiate the choice of methods used and approaches taken, test the software program, and conduct experimental verification of the practical user-friendliness of the solution. Other requirements are described in detail in the methodological thesis preparation recommendations under the given degree programme.

Theses can be prepared either at HSE University or at an external organisation.

2.5.1.2. Special Aspects of Thesis Preparation in English

DSBA students must write their theses in English.

A thesis written in English must be accompanied by abstracts prepared both in English and in Russian.

The supervisor’s feedback on and review of a thesis prepared in English are provided in English.

The thesis defence of a paper prepared in English is held in English. The presentation slides must be provided in English as well.

Theses written in English are subject to the same preparation and assessment procedures.

2.5.1.3. Thesis Supervisors

Thesis supervisors are predominantly University staff that hold PhD, Candidate of Sciences, or Doctor of Sciences degrees, as well as practitioners with no less than three years of experience in the given field, including time spent working at the University on a part-time basis. Faculty members without academic degrees and doctoral students can also be appointed as thesis supervisors.

For those students with a thesis supervisor who is not a University staff member, a co-supervisor from among University staff members must be appointed. The co-supervisor

monitors the progress of the thesis and ensures it meets the content requirements and design criteria. The supervisor of the students' concentration can act as a co-supervisor. When a thesis is completed in a group format, one supervisor and one co-supervisor must be appointed.

2.5.1.4. Submission and Approval of Original Thesis Topics

Upon developing an original thesis topic (i.e., not from the suggested list of topics), the student must independently find a relevant supervisor for the topic.

The supervisor candidate must be agreed upon and approved by the degree programme's academic supervisor. Toward this end, the student must write a substantiation, in which they explain the suggested topic; select a work supervisor not from HSE University (indicating, if possible, his/her academic degree, academic title, position and place of work, and office contact information); select a co-supervisor from among HSE University staff; formulate a work hypothesis, key concepts, and tasks; define the question that the work will address; and describe the planned project in sufficient detail to enable assessing its conformity with the programme's focus. The substantiation is submitted to the system proposed by the programme office no later than five calendar days before the end of the topic selection period.

Only after the original topic has been approved, either in person or in writing, does the student enter the topic into the system proposed by the programme office as an original proposal. The degree programme's academic supervisor approves the cooperation and the topic, provided that the topic and research design correspond to the field of Computer Science and the other criteria established for theses prepared by students of the degree programme.

2.5.2. Thesis Preparation

2.5.2.1. Thesis Preparation Stages

The final version of the thesis is presented in electronic form by uploading the text, formatted in accordance with the methodological guidelines, to the system proposed by the programme office for submitting reports by the established deadline. The text uploaded to the system proposed by the programme office for submitting reports is considered final.

2.5.2.2. Formatting Requirements and Procedures for Submitting the Thesis Paper

The results of the thesis make up the body of a report that should be written in accordance with the methodological guidelines. Special attention should be paid to the mandatory formatting requirements for the text.

The title page of the thesis report should be formatted in the same language as the text of the report itself.

It is recommended that appendices to the thesis (software source code, program files, new data collections, etc) be posted in public domain sources (e.g., on GitHub or Yandex.Disk) with the relevant link provided in the thesis report itself.

When completing a thesis in the form of a software project, the student must provide the source code of the project together with the report (within the same timeframe). It is recommended that the source code be posted in public domain sources (e.g., on GitHub or Yandex.Disk) with the appropriate link provided in the thesis report itself. Access to the code may be restricted, as long as the degree programme's academic supervisor and board members are given access. All cases in which providing the code is not possible (e.g., if the project is being completed for a company) must be agreed on individually with the degree programme's

academic supervisor.

The student sends the final version of his/her thesis to the system proposed by the programme office for submitting reports so that it can be checked for plagiarism no later than 14 calendar days before the first date of defence. The uploaded file will be automatically forwarded to the special system for checking the percentage of matches. The results of the plagiarism check are then entered into the system proposed by the programme office for submitting reports. Based on the results of the check, a report is generated to confirm that the thesis has been uploaded into the system and indicate the detected percentage of matches.

No printed hard copy set of documents is required. The thesis is considered to have been submitted once the final version of the thesis has been uploaded into the system proposed by the programme office for submitting reports by the established deadline.

If the plagiarism check determines that the percentage of borrowing exceeds the acceptable percentage (i.e., 20%) and, hence, the originality of the text is less than 80%, the thesis supervisor will include a statement on the (non)originality of the given text in his/her feedback no later than five working days before the appointed date for the thesis defence.

If a project is submitted later than the established deadline, the thesis supervisor is entitled to assign an unsatisfactory grade in his/her feedback without reviewing the contents.

The date for submission of the thesis is considered the date when the final version of the thesis has been uploaded to the system proposed by the programme office for submitting reports. If a project has been uploaded into the system proposed by the programme office for submitting reports later than the established deadline, the student's thesis is not considered to have been submitted, and the student may not be permitted to defend the thesis.

The publication of the thesis on the HSE University website (portal) is not mandatory. The student's consent to publication must be noted in the plagiarism check report from the system proposed by the programme office for submitting reports, which is signed by the student.

2.5.2.3. Providing Thesis Feedback and Reviews

The thesis supervisor will provide feedback on a thesis and evaluate it according to the general criteria specified in the sample supervisor feedback, and will also substantiate the grade awarded by him/her with brief comments on the thesis' key strengths and weaknesses.

The thesis supervisor signs feedback provided on a thesis, uploads a copy into the system proposed by the programme office for submitting reports, and forwards a copy to the programme office staff, with a copy of the feedback provided to the student at least six calendar days prior to the date of defence.

Before April 25, the degree programme's academic supervisor confirms the list of thesis reviewers from among the academic staff of HSE University's Faculty of Computer Science (FCS), the staff of other HSE University subdivisions, and staff from other higher educational institutions, scientific organisations and software companies who are specialists in the topic of the given thesis.

The directive on the appointment of reviewers must be issued by the dean of the Faculty of Computer Science at the recommendation of the degree programme's academic supervisor no later than one month before the planned date of the thesis defence.

The programme office sends the final electronic version of the thesis for review. The reviewer then drafts his/her review and, either in person or via the student or thesis academic supervisor, submits the original signed review to the programme office no later than six calendar days before the date of the thesis defence. A scanned copy of the signed review may

also be sent from the email address specified by the thesis supervisor. In this case, the electronic copy of the signed review must be forwarded to the programme office no later than six calendar days before the date of the thesis defence; specifically, it should be sent to the email address of the staff member who previously emailed the final draft of the thesis for review. The review takes the same form as the thesis supervisor's feedback.

The programme office uploads an electronic copy of the review into the system proposed by the programme office for submitting reports for the student's review. The student should familiarise himself/herself with the review via his/her personal account in the system proposed by the programme office for submitting reports.

2.5.2.4. Requirements for the Public Defence of the Thesis

Theses completed by students of the programme must be publicly defended in Module 4 according to the approved schedule. The procedure for conducting a thesis defence is regulated by the Regulations on Final State Certification of Students of Bachelor's, Specialist and Master's Programmes at National Research University Higher School of Economics (hereinafter, "Regulations on FSC at HSE University").

A State Examination Board (SEB) is formed as per the established procedure for the public defence of a thesis.

The process for defending a thesis involves the delivery of an oral report by the author with a presentation (the recommended time is 10 minutes; the maximum time allowed is 15 minutes), questions posed by SEB members and the student's answers thereto, and the student's closing remarks, which include responses to comments by the reviewer and SEB members. It is preferable that the thesis supervisor be present at the defence. The report must formulate the research question and the results obtained, both at a substantive level and at a formal level. It is recommended that the criteria specified in the template for the supervisor's feedback of the thesis be taken into account and that it be ensured that the report reflects all the information necessary for evaluating the work in accordance with the relevant criteria.

Should the thesis supervisor sit on the board reviewing the work of the student he/she supervised, he/she may participate in the discussion of the given work but cannot play any role in evaluating it.

The results of the SEB members' discussion are recorded in the minutes and in the evaluation record sheet, according to the standard procedure.

2.5.2.5. Grading Theses Prepared by DSBA Students

The final grade is given on both a five-point and a 10-point grading scale. The grade for the thesis is awarded on the basis of the defence outcomes. The grades given by the supervisor and the reviewer must be considered as recommended grades only. The assessment criteria and the recommendations for presentations are provided in the methodological thesis preparation guidelines under the degree programme.

The final grade must be rounded as follows:

Fractional part ≤ 0.5 – rounded down, > 0.5 – rounded up.

In the event of differing opinions among SEB members, the grade will be determined by a simple majority vote by the SEB members present at the defence. If there is a tie between yes and no votes, the chairman of the board will cast the deciding vote.

2.5.2.6. Appealing the Results of a Thesis Defence

An appeal must be submitted personally by the student no later than the following day after the receipt of the grade. An appeal is submitted in the form of an application to the programme office and then forwarded to the secretary of the appeals committee with other supporting documents attached.

An application for an appeal can only be submitted if there was a violation of the established procedures for conducting thesis defences.

Appeals must be reviewed in accordance with the procedures established by Section 4 of the Regulations on FSC at HSE University.

The decision of the appeals committee is deemed final and cannot be revised.

2.5.2.7. The Features of Completing Group Theses

A thesis is an individual work that enables the evaluation of the student's qualifications upon completing the programme. Each student must submit an individual thesis report and defend the thesis in public.

A thesis can be completed as part of a team (group) project, however. In this case, the thesis must include a description of the team project, as well as specify the connection between the individual tasks with the tasks undertaken for the entire project, the results of the entire project, and the contribution of the given thesis to the common project results. Similarities between theses in these sections of the text are not considered plagiarism, and this will be factored in by the thesis supervisor when evaluating the results of the plagiarism check in the system proposed by the programme office for submitting reports.

The public defence and evaluation of theses completed as a group project are conducted according to the rules common for all theses.

2.5.2.8. The Features of Completing a Thesis in Instances of a Transfer to an Individual Curriculum

In the event of a transfer to a special individual curriculum (IC) with repeated courses after the end of the winter retake period, the student is entitled to postpone the preparation of the thesis and the pre-graduation internship until the next academic year by submitting an application to the dean about transferring the above elements of the curriculum to the next academic year. In doing so, the student undertakes to complete all thesis stages in full as established by this Programme during the following academic year.

In the event of a transfer to a special IC with repeated courses after the end of the additional retake period organised by decree of the dean for students in Year 4 in April, the student is entitled to move the preparation of the thesis to the following academic year by submitting a relevant application. However, changes, specifically to the thesis topic or academic supervisor, are not allowed given that the deadlines for making such changes, as established by this Internship Programme, would have already passed.

In each of the above cases, as well as in the event of a transfer to a special IC after the autumn retake period, the deadlines for uploading the thesis to the system proposed by the programme office for submitting plagiarism check reports, submitting the final version of the thesis for review, and presenting the set of thesis documents to the programme office are specified by an additional directive on conducting final state certifications after the student fully completes the IC and removes the failing marks for all elements of the degree

programme.

2.6. Thesis Preparation in a Startup as a Diploma Format, Year 4

This paragraph is developed in accordance with the Federal state educational standards (FSES) and the Order of the Ministry of Science and Higher Education of the Russian Federation dated 29/06/2015 No. 636, which establishes the procedure for the Final State Certification of Students in Bachelor's, Specialist and Master's Degree Programmes.

"Startup as a diploma" is a form of final certification that involves the creation of a technological or innovative project combining research and entrepreneurial activities. The project should include both scientific and entrepreneurial components, and the student should act in a role appropriate to his/her field of study.

2.6.1. Stages of Work on a Startup

During the study period, the student goes through checkpoints to assess progress:

· The application of intent to work on a startup is submitted at the beginning of the 4th year of the bachelor's degree;

· The final defence of a startup takes place at the end of the 4th year of the bachelor's degree.

The final defence of a startup includes a project presentation in which the student must report on the work done, including the scientific component and the results of entrepreneurial activity.

2.6.2. Thesis in a Startup as a Diploma Format Supervision

The supervision of the thesis in a startup as a diploma format of students of the DSBA Bachelor's programme can be carried out by:

· academic staff at HSE University and visiting lecturers who hold academic degrees;

· practitioners working at the University on a part-time basis and visiting lecturers with no less than three years of experience in the field of information technology.

For those students with a thesis supervisor who is not a University staff member, a co-supervisor from among University staff members must be appointed. The co-supervisor monitors the progress of the thesis and ensures it meets the content requirements and design criteria. The supervisor of the students' concentration can act as a co-supervisor.

The thesis supervisor is the supervisor of the students' pre-graduation internship.

For those students who prepare the thesis in a startup as a diploma format should be assigned an advisor whose professional activity and/or research interests are related to the topic of the thesis, from among the:

· academic staff at HSE University;

· visiting lecturers;

· representatives of external organizations.

The obligations and rights of the thesis supervisor and advisor are defined in the relevant local regulatory documents of HSE University.

Student/ CSU must submit the final version of the thesis to the thesis supervisor no later than 14 calendar days before the starting date of the first thesis defence.

After receiving the final version of the thesis from the student/CSU, the supervisor provides feedback. In the review, the thesis supervisor:

- indicates:
  - the scope of work in pages,
  - number of figures,
  - number of tables,
  - number of sources (Bibliography),
  - percentages of borrowed materials from the Anti-Plagiarism system report,
- assesses the quality of work,
- notes:
  - key strengths of the thesis,
  - key weaknesses of the thesis,
- determines the degree of:
  - independence of work on the thesis,
  - creativity shown by the student during the period of work on the thesis,
  - compliance with the requirements of the bachelor's thesis,
- recommends the thesis for the public defence,
- evaluates the thesis.

When evaluating the thesis, the supervisor takes into account the following criteria:

- problem statement and justification of its relevance,
- conceptual apparatus used,
- completeness of the approaches to solving the problem under study and/or the project under development,
- novelty and/or practical significance of the results obtained,
- validity of the results obtained,
- visibility of the presented materials,
- compliance with the rules of formatting,
- the level of formation of competencies formed in the process of working on the thesis.

The supervisor has the right not to recommend a thesis for the public defence if the borrowing limit set at the Higher School of Economics (20%) is exceeded..

If the percentage of borrowing is exceeded (20%) and the supervisor recommends the thesis for the public defence, he gives an opinion on the nature of the borrowings in the thesis review.

The supervisor has the right not to give an assessment if the student does not provide him with the thesis on time. In this case, the supervisor's score is considered to be zero.

The supervisor sends the review to the Curriculum Support Unit (CSU) for Undergraduate Programmes at the Faculty of Computer Science and to the student. He also uploads it to the system for submitting accounting documents proposed by the CSU in the thesis module no later than 5 calendar days before the first date of the thesis defence.

2.6.3. Requirements for a thesis in the Startup as Diploma format

The startup must be launched in a field of technology that corresponds to the Applied Mathematics and Information Science field of study. It is important that the project have potential for commercialisation and encompass elements of research and development (R&D) work.

Key criteria for a successful thesis in the Startup as Diploma format:

- Scientific and engineering results, confirmed through academic publications, patents or expert evaluations;
- Proven hypotheses for the value of the project and its scalability potential;
- Availability of external sources of financing (grants, investment, earnings from initial sales);
- Participation in accelerator or pre-accelerator programmes.

The project must be presented in the form of a grant application or investment request ("pitchbook"), which can also serve as the fundamental document to be presented in the diploma defence process (and should be at least 20 pages).

2.6.4. Requirements for a public thesis defence in the Startup as Diploma format

A thesis in the Startup as Diploma format, similar to the other thesis formats deployed by students in the Data Science and Business Analytics degree programme, is subject to a mandatory public defence. The defence procedure and process are governed by the respective HSE University bylaws.

Public thesis defences by students of the Data Science and Business Analytics degree programme are conducted during Module 4 in accordance with the approved schedule.

A State Examination Board (SEB) is convened, in accordance with the established procedure, for the purpose of conducting public thesis defences.

The defence procedure includes an oral presentation by the thesis author (lasting up to 15 minutes), questions posed by SEB members to the student and the latter's responses, and the student's concluding remarks, which, among other elements, should include answers addressing the SEB members' comments and feedback. The student may choose to deliver their presentation at their public thesis defence in either Russian or English regardless of which language the thesis was written in. The student is further entitled to make use of all necessary electronic or technical media or devices when demonstrating the software program developed in the course of carrying out the thesis project work.

The results of the thesis defence discussion among the members of the SEB are duly recorded in the Minutes of the meeting, which are then signed by the SEB members.

2.6.5. Evaluation (grading) of a thesis in the Startup as Diploma format

A defence of a startup as a graduation thesis or diploma paper is conducted before the members of the State Examination Board (SEB), which shall consist of recognised experts in the relevant field of scientific inquiry and entrepreneurship. The student must defend their work independently, providing complete, comprehensive answers to the questions posed by the examining members of the SEB.

The decision of the SEB shall be adopted in closed session, with at least two-thirds of the membership in attendance, by means of a simple majority of the votes cast by the SEB members present at the meeting, with the mandatory condition that the chair of the SEB be present at the meeting. In case of a tied vote, the SEB chair shall have the right to cast the deciding vote.

The final grade for the given thesis is awarded at the discretion of the SEB with due consideration for the evaluation of the thesis supervisor or term paper advisor, as well as the quality of the thesis composition, design and formatting; the progress achieved in commercialising the startup (including such KPIs as sales, customer contracts, and pre-orders); the author's level of proficiency in the relevant professional terminology; and their demonstrated ability to defend their project before the SEB and respond to questions posed by Board members. If the thesis supervisor also serves as a member of the SEB, then they may

take part in the discussion of the thesis being evaluated, but may not participate in the actual process of grading it.

2.7. NDA

2.7.1. NDA for TP and Theses

In the process of completing term projects (TP), non-disclosure agreements (NDA) may be concluded between students and relevant industry-specific organisations. The parties sign an NDA without CIPE's participation.

The presence of an NDA does not change the criteria for evaluating TP, the requirements for the report and presentation in any way. The student must be able to provide the following details of PTEs in the reports and at the public defence:

1. a detailed statement of the problem;
2. description of approaches taken in solving the problem;
3. outcomes of completing the PTEs (quality metrics, test results, implementation outcomes, etc) to the extent that would be sufficient to enable confirming that the goals have been achieved.

If the information provided by the student is not sufficient to determine the volume and quality of the work done, the commission has the right to reduce the assessment to unsatisfactory.

A detailed comment with a description of the quantitative and qualitative aspects of the student's work must be provided in the supervisor's feedback to the PTE that is subject to the NDA. If the PTE is subject to an NDA, the presence of the PTE supervisor at the student's defence is mandatory.

If the topics of a term project/thesis are subject to an NDA, the topic will be approved by the academic supervisor on the basis of the student's application with the topic, the company's name, and the supervisor, as well as the student's obligation to maintain confidentiality provided as per the requirements in p. 2.6.1, and describing the PTE details that are deemed confidential. The application must be submitted in the way proposed by CIPE in the period up to Checkpoint 1. If the application was not submitted by the student on time, the student provides a link to the source code of the project in the reporting documentation for the TP protection.

2.7.2. NDA for Professional Internships

The student internship agreement between HSE University and the relevant industry-specific organisation stipulates that the internship must be organised in accordance with the approved internship programme. If the company subscribes an individual assignment that stipulates that the student must complete an internship assignment and prepare a report with a detailed description of the internship contents and obtained outcomes provided, then the outcomes are not subject to the NDA. No NDA provisions are included in the student internship agreement because HSE University is not entitled to impose certain additional non-disclosure obligations on the student as part of educational services provided. The partner organisation signs an NDA with the student on their part if the student has been given access to certain confidential information in the process of working at the partner organisation. Such opportunity is provided pursuant to p. 2.4.1 of the Agreement. No confidential information is used in the course of the study process.

2.8. Resources and Special Aspects of Completing Assignments in the Context of Restrictive Measures

In the course of completing the PTEs, students can use information technologies, including automated design and software development tools used at the industry-specific organisations, as well as internet technologies, etc.

The availability of EPT infrastructure support is mentioned in the student internship agreements with individual organisations. Such material and technical support must meet applicable health and fire safety standards, as well as safety requirements during the work process.

In case of any restrictions, the PTE assignments may be carried out remotely.

Section 3. Special Aspects of the Study Process for Persons with Disabilities and Special Needs

If any special aspects or limitations exist affecting students with disabilities and special needs, or other objective factors exist that may impede a student's involvement in a PTE, his/her practical training will be arranged with due consideration for their specific health issues and/or other special needs.

Annex 1

Table 1 – Stages and Deadlines for the Selection, Approval, Preparation, and Defence of Term Projects in the 2024–2025 Academic Year

No.	Stages of the Term Project Implementation	Individuals/Units Responsible for the Relevant Stage of the Term Project Implementation	Deadlines
1.	Gathering of proposed term project (TP) topics; submission of project proposals and project descriptions	Subdivisions at FCS and HSE University, representatives of IT companies, students, CIPE	By October 1, 2024
2.	Approval by the project supervisor of proposed term project topics	Project supervisor, CIPE	By October 7, 2024
3.	Students propose term project topics at their own initiative	Students	By October 28, 2024
4.	Approval of original term project topics proposed at the students' initiative	Project supervisor, CIPE	Decision to be made by November 1, 2024
5.	Selection of projects by students, and selection of project participants by project managers	Students, TP managers	By November 6, 2024
6.	Changing a TP topic/project manager	Student, TP manager, TP supervisor, CIPE	By January 22, 2025
7.	Checkpoint 1. Submission of interim project outcomes and interim project report/terms of reference to project manager and project supervisor	Students, TP managers, TP supervisor	By January 21, 2025
8.	Checkpoint 1. Checking interim reports/terms of reference and giving feedback comments to the student	TP managers, supervisor	By January 28, 2025
9.	Checkpoint 1. Uploading Checkpoint 1-related documents	Students	By February 4, 2025
10.	Checkpoint 1. Evaluating outcomes and providing information about grades to CIPE	TP managers	By February 18, 2025

12.	Approving the schedule of the term project defence	CIPE, Programme Office	No later than **28 calendar days** before the first date of the defence
13.	Submitting outcomes from TP completion to the project manager	Student, TP manager	No later than **21 calendar days** before the first date of the defence
14.	Preparing the final version of the term project's outcomes and all project-related reports and submitting them to the project manager	Student, TP manager	No later than **14 calendar days** before the first date of the defence
15.	Uploading the final version of the term project and all project-related reports for checking in the Anti-Plagiarism system	Student	No later than **14 calendar days** before the first date of the defence
16.	Uploading the report generated by the Anti-Plagiarism system	Student, CIPE	No later than **13 calendar days** before the first date of the defence
17.	Submitting feedback on the term project to CIPE	TP manager, CIPE	No later than **6 calendar days** before the first date of the defence
18.	Submitting an official memo issued by the project manager if the percentage of borrowed materials in the final version of the student's term project exceeds the acceptable level	TP manager, academic supervisor, CIPE	No later than **5 calendar days** before the first date of the defence
19.	Uploading the defence presentation	Student, CIPE	No later than **1 calendar day** before the first date of the defence
20.	Public defence of the term project	Student, Commission, TP manager, CIPE	According to the approved schedule of the given degree programme (DP)
21.	Changing a topic/term project manager before the retake period	Student, TP manager, supervisor, CIPE	By June 30, 2025

22.	Submitting outcomes of the term project to the project manager before the retake period	Student, TP manager	No later than **21 calendar days** before the first date of retakes under the given DP
23.	Preparing the final version of the term project's outcomes and all project-related reports and submitting them to the project manager before the retake period	Student, TP manager	No later than **14 calendar days** before the first date of retakes under the given DP
24.	Uploading the final version of the term project and all project-related reports for checking in the Anti-Plagiarism system	Student	No later than **14 calendar days** before the first date of retakes under the given DP
25.	Uploading the report generated by the Anti-Plagiarism system	Student, CIPE	No later than **13 calendar days** before the first date of retakes under the given DP
26.	Submitting feedback on the term project to CIPE	TP manager, CIPE	No later than **6 calendar days** before the first date of retakes under the given DP
27.	Submitting an official memo issued by the project manager if the percentage of borrowed materials in the final version of the student's term project exceeds the acceptable level	TP manager, academic supervisor, CIPE	No later than **5 calendar days** before the first date of retakes under the given DP
28.	Uploading the defence presentation	Student, CIPE	No later than **1 calendar day** before the first date of retakes under the given DP
29.	Public defence of term project during the retake period	Student, Commission, TP manager, CIPE	According to the approved schedule of the given DP

Annex 2

Project Description for Students of the Faculty of Computer Science at HSE University

Title of the project (in Russian)	
Title of the project (in English)	
Type of project	Software (Applied) Project / Research Project *Delete as appropriate*
Type of project activity	Individual Project / Team (Group) Project *Delete as appropriate*
Potential number of participants (relevant only for Team [Group] Projects)	____ (maximum 4)
Credits	
Project initiator	
Company subdivision/HSE University/project initiator's educational programme and course	
Project supervisor	*Full name, position*
Summary of the project	
Main goal of the project	
Project tasks	
Basic tasks for all participants (relevant for Team [Group] Projects only)	
Expected results	
Other information and references	
Location of project work	
Requirements for participating students	
Participating students' requests may be sent by	email, via a link, other *Delete as appropriate* _____ from _____ till _____
Preliminary project tasks (shortlisting, interviewing, testing, assessing)	
Criteria for the project supervisor's evaluation of the project outcomes	Grade 10 (Excellent): Grades 9 to 8 (Very Good): Grades 7 to 6 (Good): Grades 5 to 4 (Satisfactory): Grades 3 to 0 (Fail):

Annex 3

Project Application

Government of the Russian Federation
National Research University Higher School of Economics
Faculty of Computer Science
Educational programme _____

Project
APPLICATION

Student's full name:

Group _____

Topic in Russian:

Topic in English:

Project language (delete as appropriate): **Russian / English**

Type of project (delete as appropriate): **Software (Applied) Project / Research Project**

Type of project activity (delete as appropriate): **Individual Project / Team (Group) Project**

Project teammates (relevant for team [group] projects only):

Supervisor:

Full name

Academic degree

Position

Place of work

I am aware that the change of the project theme and/or the supervisor is possible no later than January 22 of the current academic year.

Student

Signature *Date*

Supervisor

Signature *Date*

Annex 4

Application for changing the project topic and/or supervisor

Government of the Russian Federation
National Research University Higher School of Economics
Faculty of Computer Science
Educational programme _____

APPLICATION
for changing the project topic and/or supervisor

Student's full name:

Group _____

Topic in Russian: *(new topic if making a change)*

Topic in English: *(new topic if making a change)*

Project execution language (delete as appropriate): **Russian / English** (delete as appropriate)

Type of project (delete as appropriate): **Software (Applied) Project / Research Project** (delete as appropriate)

Type of project activity (delete as appropriate): **Individual Project / Team (Group) Project** (delete as appropriate)

Project teammates (relevant for team [group] projects only):

I am aware that the change of the project theme and/or the supervisor is possible no later than January 22 of the current academic year.

Student

Signature *Date*

Previous supervisor:

_____
Full name, position, place of work

Signature *Date*

New supervisor:

_____
Full name, position, place of work
(if you are not changing your supervisor, delete this line)

Signature *Date*

Annex 5

Requirements for TP Reports, Year 2

1. Project Types and their Specific Features

Students may complete their term projects in two formats: as a research project or as a software project. A research project may encompass theoretical research (formulating and demonstrating proof of new hypotheses and theories), comparative analysis of existing methods for solving a specific problem, and the development or improvement of methods for solving applied problems. Software projects are typically focused on developing or modifying software solutions.

It is important that a project of either type must demonstrate some degree of innovation and/or benefit, for example:

- proposing new methods or models;
- testing the applicability of existing methods to new tasks where such methods have never been used before;
- analysing and comparing methods that have not been the topic of previous research papers;
- developing a system based on already known methods but while solving a specific practical problem that has not previously been solved in this way;
- developing a library that differs significantly from existing analogues (at least from analogues available in the public domain).

Thus, the direct reproduction of a published article or the implementation of a simplified analogue of an existing open source code library would not be good term projects as they offer no innovation and bring no benefit to the community.

Different aspects should be considered depending on the type and topic of a project.

Main focus areas of a research project (new methods or theoretical conclusions):

1. A detailed description of the problem being solved or the theoretical problem under consideration, and informal and formal formulation of the problem;
2. Review of the existing methods and research outcomes, and analysis of their main components and disadvantages, which you will try to improve in the course of your work;
3. A detailed description of the proposed method and its rationale or formulation and proof of the theoretical results obtained;
4. Theoretical analysis of the proposed solution to the problem;
5. Computational experiments for empirical analysis of the proposed solutions, and comparison with the existing analogues.

Main focus areas of a research project (analytical work):

1. Description of the field of study, as well as the products, solutions, and technologies subject to analysis;
2. Identification of tasks for analysis and testing/comparison;
3. Description of the chosen analytical technique and the rationale for choosing it;
4. Description of testing tools and the rationale for choosing them;
5. Detailed, high-quality presentation of analytical results;
6. Discussion of the analytical results, identification of advantages and disadvantages, and provision of recommendations.

Main focus areas of a software project:

1. Providing the rationale for the proposed system or a system prototype;
2. Developing a detailed formal description of the system (general architecture, class structure and their interfaces, volumetric characteristics, etc);
3. Developing a description of the system from the user's point of view;
4. Providing a rationale for the optimal selection of solutions, including on the basis of experimental analysis of the complexity of calculations;
5. Comparing the system with already known analogues in terms of functionality, efficiency, and user-friendly parameters;
6. Ability to demonstrate the system in operation and availability of documentation.

2. Structure and Contents of the Project Report

2.1. Text structure

The following report structure is recommended:

1. Title (front) page (in the same language as the main body of the report)
2. Contents
3. Abstract (up to 2,000 characters): If you submit your paper in English, the abstract must be provided both in Russian and English. In fact, the abstract is a summary of your work, from which anyone familiar with the field of study should be able to understand what you did in general terms. It usually describes the statement of the problem and the main outcomes of the work in fairly informal terms.
4. List of keywords: 5–10 words or phrases that describe the contents (in the same language as the main body of the text).
5. Introduction: In general, this is both an informal introduction and a brief description of the project on 1–2 pages. The introduction usually provides a description of the subject area, informally formulates the statement of the problem, underscores its relevance and significance, and informally describes the main outcomes of the work, including their innovative nature and relevance. At the end of the introduction to a team (group) project, the distribution of tasks between the project participants should be provided.
6. Overview of bibliographical sources: Brief description and characteristics of relevant papers. For research projects: positioning your paper among other contemporary papers (e.g., the proposed method is more effective than the one proposed in the paper [1] because this paper examines an additional case that is not studied in [2], etc). For software projects: review of similar software solutions, their comparative analysis and explanations why they cannot be used to solve the problem. An overview of bibliographical sources should not look like a list of relevant papers, but should provide an analysis of the various papers and position your work as it compares to other papers.

7. Chapters (usually a report consists of 2–5 chapters): The structure depends on the topic of the project. For example:
    - a paper proposing a new method for solving a problem may contain the following chapters: formal formulation of the problem and analysis of its features, description of the proposed method, theoretical analysis of the method, experimental research, and comparison with analogues;
    - a paper exploring specific aspects of using a certain method for various tasks may contain the following chapters: description of the method, review of the applicability of the method to various tasks with a description of the relevant tasks, analysis and rationale for the choice of specific tasks for your research, experimental analysis of the applicability of the method to Task 1 in comparison with analogues, and the same for Task 2, etc;

- a paper devoted to the development of a software system for solving a practical problem may contain the following chapters: description and rationale for all selected architectural solutions, algorithms, and technologies, a description of the approaches taken to testing the proposed solution and the rationale for the selected quality metrics, and results of testing of the developed system and comparison with known analogues.

Each chapter should end with a summary of the main points, where appropriate. This will help highlight the main idea or results presented in the chapter and ensure a smooth transition to the next chapter.

8. Conclusion: Listing and describing the work outcomes (both positive and negative, if any), as well as prospects for further research.
9. Bibliography (make sure to observe the formatting requirements).
10. Annexes (if any): Annexes should be numbered and listed in the Table of Contents. Standard annexes include: a terminological dictionary (glossary) in the subject area; a list of abbreviations; description of the original data for the experiments; protocols of experiments; and additional results of experiments. Source codes of all software programs developed in the course of the work should not be provided in the annexes because this is perceived as an artificial means of expanding the scope of work. You can include key code fragments if they are necessary to demonstrate original solutions or features of the work.

2.2. Recommendations on the text size and style

A scientific style of writing should be used in a project report. The report should describe all components of your work in detail.

The overall volume of your report depends significantly on the topic of the project. For example, a mathematical paper, which comprises the formulation and proof of new theoretical results, can take up to 7–10 pages. The "standard" volume of an individual project (both research and software) can be considered approximately 15 pages (15,000 characters). The volume of a team (group) project is greater than the volume of an individual project, given the number of participants.

2.3. Recommendations on the description of the distribution of roles in a team project

In a team (group) project report, it is extremely important to clearly describe each team member's input. This should be done at the end of the introduction, describing the distribution of tasks between team members. This information should also be repeated at the end of each chapter (except for the Introduction, Bibliography, and Conclusion) to indicate who completed their share of work in the given chapter.

2.4. Recommendations on the description of the applicable project terminology, methods, and outcomes

If readers need to know some basic terms, concepts, and methods in your field of study in order to understand your paper, or if you want to introduce some notation, then you can add a chapter (Description of Fundamental Methods, Definitions, etc) into the body of the paper. This will provide the reader with formal definitions and notations without adding these details to the Introduction.

In the paper, most methods are usually described briefly (e.g., in the bibliographical overview), but the main methods you rely on should be described in detail. For example, if you propose making a modification to existing method X, then a chapter should be dedicated in the body of the paper to providing a more detailed description of this method.

2.5. Recommendations on the description of project outcomes

Keep in mind that the project outcomes will be assessed according to the criteria of relevance, innovation, theoretical significance, practical usefulness, reliability and correctness, and

completeness. This means that you need to provide reasons for all of your statements, as well as specifically indicate their innovativeness and relevance, and the potential options for their applicability in practice, etc. Make sure to indicate volumetric characteristics (sample sizes; volume of databases; time spent on experiments; number of analysed options; number of lines of code and code volume in kilobytes, etc) in the experimental part of the paper.

2.6. Recommendations on writing and editing the text

Do not try to write a final version of your text from beginning to end right away. Typically, work on drafting a report text is not a linear process.

1. Determine the basic structure of the text, bearing in mind what main chapters will be featured in the text and in what order. At the same time, it makes sense to think through the logical structure of the Introduction, since it typically provides a brief logical outline of the structure of the paper.
2. Write an overview of your bibliographical sources. In general, this is not where you should start, but it is important that you study the literature and have some understanding of how to position your work in the context of existing materials in the process of your work on the project.
3. Write the main chapters of the paper as a draft version. Perhaps in the process you will realise that the structure of the text needs to be changed; this is normal. Modify the structure of the text and Introduction to make it consistent, coherent, and logical.
4. Write the Introduction and Conclusion.
5. Review the entire text and edit if necessary (the same terms should be used consistently, models and results should be provided after their introduction and brief description, etc), and correct all stylistic errors (eliminating colloquial terms, etc).
6. Review the text for correctness of spelling and grammar. Check the accuracy of the formatting (pictures, necessary captions, correct list of references, etc).

3. Requirements for the Project Report Format

It is highly recommended that you format the report in LaTeX. The text will look much more professional, and it is also much more convenient to work with neat structuring of the text, design of mathematical sections and the bibliography. We have prepared course project templates for you in the overleaf online editor, and we recommend working directly in it. Look for the English version here: https://www.overleaf.com/read/zhznztkhqjkw.

Everything has already been set up in these templates, with brief descriptions of how to format pictures, tables, formulas, and references to the bibliography provided.

If you still plan to draft your report in Word, or you have not found answers to your questions in the LaTeX template, then carefully study the formatting rules in Annex 7. Please also make sure to use title page templates when formatting your report in Word (Annexes 8–11).

4. Plan of the Term Project

In the middle of the year, students must submit a plan for their term projects. The plan is a document comprised of at least three pages (NOT including the title page, table of contents, abstract, bibliography, and illustrations), which represents the first draft version of your project report. It must be drawn up according to the same rules as for the final document and include fully completed points 1–6 in the report structure provided in Section 2.1 (title page, table of contents, abstract, keywords, introduction, overview of bibliographical sources), a plan of further work, and a list of references. Anticipated outcomes can be described in the abstract and introduction, with a remark provided that these outcomes are so far only planned, but not yet obtained. In terms of further work on a research

project, the studied models and methods should be described, providing a specific experimental plan (with a description of data, methods, and comparison tools provided). In a plan for further work on a software project, the project should be broken down into specific components, with a plan for their implementation provided.

The plan for a team (group) project will have a larger scope and will consist of at least three pages plus 2–3 pages for each additional participant. The plan for further work should specify both the general plan of the project, with a provisional breakdown by project participants provided.

If your project involves participants from other teams who are not expected to submit a project plan in the middle of the year, then describe the common part of the project in your plan, indicating your own input. As for other participants' input, just note that it exists, but, if it is critical for understanding the general format of the project, describe it briefly in a couple of sentences.

Annex 6

Requirements for TP Reports, Year 3

1. Project Types and their Specific Features

Students may complete their term projects in two formats: as a research project or as a software project. A research project may encompass theoretical research (formulation and demonstrating proof of new hypotheses and theories), comparative analysis of existing methods for solving a specific problem, and the development or improvement of methods for solving applied problems. Software projects are typically focused on developing or modifying software solutions.

It is important that a project of either type must demonstrate some degree of innovation and/or benefit, for example:

- proposing new methods or models;
- testing the applicability of existing methods to new tasks where such methods have never been used before;
- analysing and comparing methods that have not been the topic of previous research papers;
- developing a system based on already known methods while solving a specific practical problem that has not previously been solved in this way;
- developing a library that differs significantly from existing analogues (at least from analogues available in the public domain).

Thus, the direct reproduction of a published article or implementation of a simplified analogue of an existing open source code library would not be good term projects as they offer no innovation and bring no benefit to the community.

Different aspects should be considered depending on the type and topic of a project.

Main focus areas of a research project (new methods or theoretical conclusions):

1. A detailed description of the problem being solved or the theoretical problem under consideration, and informal and formal formulation of the problem;
2. Review of the existing methods and research outcomes, and analysis of their main components and disadvantages, which you will try to improve in the course of your work;
3. A detailed description of the proposed method and its rationale or formulation and proof of the theoretical results obtained;
4. Theoretical analysis of the proposed solution to the problem;
5. Computational experiments for empirical analysis of the proposed solutions, and comparison with the existing analogues.

Main focus areas of a research project (“analytical” work):

1. Description of the field of study, as well as the products, solutions, and technologies subject to analysis;
2. Identification of tasks for analysis and testing/comparison;
3. Description of the chosen analysis technique and the rationale for choosing it;
4. Description of testing tools and the rationale for choosing them;
5. Detailed, high-quality presentation of analytical results;
6. Discussion of the analytical results, identification of advantages and disadvantages, and provision of recommendations.

Main focus areas of a software project:

1. Providing the rationale for the proposed system or a system prototype;
2. Developing a detailed formal description of the system (general architecture, class structure and their interfaces, volumetric characteristics, etc);
3. Developing a description of the system from the user's point of view;
4. Providing a rationale for the optimal selection of solutions, including on the basis of experimental analysis of the complexity of calculations;
5. Comparing the system with already known analogues in terms of functionality, efficiency, and user-friendly parameters;
6. Ability to demonstrate the system in operation and availability of documentation.

2. Structure and Contents of the Project Report

2.1. Text structure

The following report structure is recommended:

1. Title (front) page (in the same language as the main body of the report)
2. Contents
3. Abstract (up to 2,000 characters): If you submit your paper in English, the abstract must be provided both in Russian and English. In fact, the abstract is a summary of your work, from which anyone familiar with the field of study should be able to understand what you did in general terms. It usually describes the statement of the problem and the main outcomes of the work in fairly informal terms.
4. List of keywords: 5–10 words or phrases that describe the contents (in the same language as the main body of the text).
5. Introduction: In general, this is both an informal introduction and a brief description of the project on 2–3 pages. The introduction usually provides a description of the subject area, informally formulates the statement of the problem, underscores its relevance and significance, and informally describes the main outcomes of the work, including their innovative nature and relevance.
   If the project has a non-standard structure, its further structure should be described at the end of the Introduction so that the reader understands what to expect next. For team (group) projects, the distribution of tasks among project participants should be provided at the end of the Introduction for such a team (group) project.
6. Overview of bibliographical sources: Brief description and characteristics of relevant papers. For research projects: positioning your paper among other contemporary papers (e.g., the proposed method is more effective than the one proposed in the paper [1] because this paper examines an additional case that is not studied in [2], etc). For software projects: review of similar software solutions, their comparative analysis and explanations why they cannot be used to solve the problem. An overview of bibliographical sources should not look like a list of relevant papers, but should provide an analysis of the various papers and position your work as it compares to other papers.

7. Chapters (usually a report consists of 2–5 chapters): The structure depends on the topic of the project. For example:
   - a paper proposing a new method for solving a problem may contain the following chapters: formal formulation of the problem and analysis of its features, description of the proposed method, theoretical analysis of the method, experimental research and comparison with analogues;
   - a paper exploring specific aspects of using a certain method for various tasks may contain the following chapters: description of the method, review of the applicability of the method to various tasks with a description of the relevant tasks,

analysis and rationale for the choice of specific tasks for your research, experimental analysis of the applicability of the method to Task 1 in comparison with analogues, and the same for Task 2, etc;

- a paper devoted to the development of a software system for solving a practical problem may contain the following chapters: description and rationale for all selected architectural solutions, algorithms, and technologies, a description of the approaches taken to testing the proposed solution and the rationale for the selected quality metrics, and the results of testing of the developed system and comparison with known analogues.

Each chapter should end with a summary of the main points, where appropriate. This will help highlight the main idea or results presented in the chapter and ensure a smooth transition to the next chapter.

8. Conclusion: Listing and describing the work outcomes (both positive and negative, if any), as well as prospects for further research.
9. Bibliography (make sure to observe the formatting requirements).
10. Annexes (if any): Annexes should be numbered and listed in the Table of Contents. Standard annexes include: a terminological dictionary (glossary) in the subject area; a list of abbreviations; description of the original data for the experiments; protocols of experiments; and additional results of experiments. Source codes of all software programs developed in the course of the work should not be provided in the annexes because this is perceived as an artificial means of expanding the scope of work. You can include key code fragments if they are necessary to demonstrate original solutions or features of the work.

2.2. Recommendations on the text size and style

A scientific style of writing should be used in the project report. The report should describe all components of your work in detail.

The overall volume of your report depends significantly on the topic of the project. For example, a paper on theoretical informatics, which comprises the formulation and proof of new theoretical results, can take up to 10–15 pages. The “standard” volume of an individual project (both research and software) can be considered approximately 20 pages (20,000 characters). The volume of a team (group) project is greater than the volume of an individual project, given the number of participants.

2.3. Recommendations on the description of the distribution of roles in a team project

In a team (group) project report, it is extremely important to clearly describe each team member’s input. This should be done at the end of the introduction, describing the distribution of tasks between team members. This information should also be repeated at the end of each chapter (except for the Introduction, Bibliography, and Conclusion) to indicate who completed their share of work in the given chapter.

2.4. Recommendations on the description of the applicable project terminology, methods, and outcomes

If readers need to know some basic terms, concepts, and methods in your field of study in order to understand your paper, or if you want to introduce some notation, then you can add a chapter (Description of Fundamental Methods, Definitions, etc) into the body of the paper. This will provide the reader with formal definitions and notations without adding these details to the Introduction.

In the paper, most methods are usually described briefly (e.g., in the bibliographical overview), but the main methods you rely on should be described in detail. For example, if you propose making a modification to existing method X, then a chapter should be dedicated in the body of the paper to providing a more detailed description of this method.

2.5. Recommendations on the description of project outcomes

Keep in mind that the project outcomes will be assessed according to the criteria of relevance, innovation, theoretical significance, practical usefulness, reliability and correctness, and completeness. This means that you need to provide reasons for all of your statements, as well as specifically indicate their innovativeness and relevance, and the potential options for their applicability in practice, etc. Make sure to indicate volumetric characteristics (sample sizes; volume of databases; time spent on experiments; number of analysed options; number of lines of code and code volume in kilobytes, etc) in the experimental part of the paper.

2.6. Recommendations on writing and editing the text

Do not try to write a final version of your text from beginning to end right away. Typically, work on drafting a report text is not a linear process.

1. Determine the basic structure of the text, bearing in mind what main chapters will be featured in in the text and in what order. At the same time, it makes sense to think through the logical structure of the Introduction, since it typically provides a brief logical outline of the structure of the paper.
2. Write an overview of your bibliographical sources. In general, this is not where you should start, but it is important that you study the literature and have some understanding of how to position your work in the context of existing materials in the process of your work on the project.
3. Write the main chapters of the paper as a draft version. Perhaps in the process you will realise that the structure of the text needs to be changed; this is normal. Modify the structure of the text and Introduction to make it consistent, coherent, and logical.
4. Write the Introduction and Conclusion.
5. Review the entire text and edit if necessary (the same terms should be used consistently, models and results should be provided after their introduction and brief description, etc), and correct all stylistic errors (eliminating colloquial terms, etc).
6. Review the text for correctness of spelling and grammar. Check the accuracy of the formatting (pictures, necessary captions, correct list of references, etc).

3. Requirements for the Project Report Format

It is highly recommended that you format the report in the LaTeX document typesetting software system. The text will look much more professional, and it is also much more convenient to work with neat structuring of the text, design of mathematical sections and the bibliography. We have prepared course project templates for you in the overleaf online editor, and we recommend working directly in it. Look for the English version here: https://www.overleaf.com/read/zhznztkhqjkw.

Everything has already been set up in these templates, with brief descriptions of how to format pictures, tables, formulas, and references to the bibliography provided.

If you still plan to draft your report in Word, or you have not found answers to your questions in the LaTeX template, then carefully study the formatting rules in Annex 7. Please also make sure to use title page templates when formatting your report in Word (Annexes 8–11).

4. Plan of the Term Project

In the middle of the year, students must submit a plan for their term projects. The plan is a document comprised of at least four pages (NOT including the title page, table of contents, abstract, bibliography, and illustrations), which represents the first draft version of your project report. It must be drawn up according to the same rules as for the final document and include fully completed points 1–6 in the report structure provided in section 2.1 (title page, table of contents, abstract, keywords, introduction, overview of bibliographical sources), a plan of further work, and a list of references.

Anticipated outcomes can be described in the abstract and introduction, with a remark provided that these outcomes are so far only planned, but not yet obtained. In terms of further work on a research project, the studied models and methods should be described, providing a specific experimental plan (with a description of data, methods, and comparison tools provided). In a plan for further work on a software project, the project should be broken down into specific components, with a plan for their implementation provided.

A plan for a team (group) project will have a larger scope and will consist of at least four pages plus 2–3 pages for each additional participant. The plan for further work should specify both the general plan of the project, with a provisional breakdown by project participants provided.

If your project involves participants from other teams who are not expected to submit a project plan in the middle of the year, then describe the common part of the project in your plan, indicating your own input. As for other participants' input, just note that it exists, but, if it is critical for understanding the general format of the project, describe it briefly in a couple of sentences.

Annex 7

Formatting Recommendations

1.1 Pages

- Margins: The left margin is 25, the right margin is 10, and the upper and lower margins are 20.
- The page numbering in the paper is consecutive, at the bottom and in the centre of the page. The pages are numbered starting from the first (title) page, which is left unnumbered.

1.2 Sections and Headings

- The followings sections start from a new page: Contents, Abstract, Introduction, and Bibliography.
- Headings of sections and sub-sections of the main body of the report are numbered. There is no period at the end of the section heading.
- The Abstract and Bibliography are not numbered.
- Annexes are numbered alphabetically using letters of the Russian (Cyrillic) or English alphabet) (depending on the language of the text).
- Headings should not be separated from the main text (e.g., with the heading at the bottom of one page and the text at the top of the next). ***Tip***: Check the relevant checkbox for heading styles in the paragraph options.

1.3 Font Sizes and Indents

- Fonts in the main text: Times New Roman, 12; line spacing 1.5. Indents at the start of paragraphs are 1.25. Justify the text.
- Tables allow Times New Roman, 10; line spacing 1.0. No indents.
- Code fragments; pseudo-code: monospace fonts (Courier New or Consolas), no indents, line spacing 1.0 and font size 10.
- Code fragments can be provided as a drawing (figure).

1.4 Figures, Tables, and Formulas

- Figures, tables, and charts appear in the text immediately after the first reference thereto or on the next page.
- There are references to all figures, tables, and formulas in the text.
- The consecutive numbering of formulas, figures, and tables is used in the text of the report. A section number can be added (Annex).

1.4.1 Figures

- All figures must be numbered and accompanied with captions.
- The numbering of figures can be consecutive both in the text and in a section, and then the section number is included in the number of the figure.
- Figures and captions should be centre aligned with text wrapping “above and below”.
- References should be provided to all figures in the text of the report (see Figure 3, see Figure 3a, etc).
- Figures must be accompanied by captions. Captions should be **placed below the figure and centre aligned**. The word “Figure” is not abbreviated.
- References to figures are provided as follows: “Figure 1”, or “see Figure 4.2”, or “as at Figure 3a”. The word “Figure” is capitalised (Figure, in English).
- ***Tips***: For ease of editing, set the text parameters to wrap the figure on top and bottom. It is also recommended to place figures in a drawing canvas.
- Make sure to label all axes on the graphs, add a legend, and explain all symbols. Please also use appropriate font sizes and lines on the graphs (all details should be visible and

understandable without multiple enlargements). The example figure obviously lacks the blue line designation in the legend.

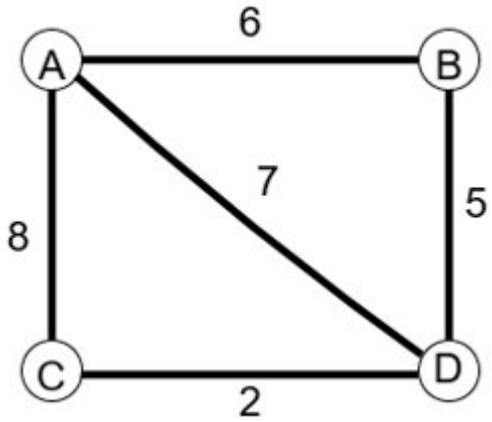

Figure 1 – Road Layout. There should be a caption explaining what the figure depicts (i.e. a brief comment that is sufficient for the reader to understand the main idea of the graph).

a) b)

Figure 2 – Sample illustrations: a) Road layout demonstrating …, b) – call tree, as an example of …

1.4.2 Tables

- All tables must be numbered and accompanied with captions.
- All tables in the text must be accompanied with references. The word “Table” in the reference is not abbreviated: Table 8 (Table 8 in English, with a capital letter).
- The title of a table is placed above the table. The word "Table" is not abbreviated. The title is aligned to the left, without indentation. Table name format and example: “Table <Table number> – Table name”
- Example of a reference to a table in the text: “see Table 1”.
- ***Tip***: set the option “Repeat lines of headings” in the Layout.

Table 1 – Logical Operations. There should be a caption explaining what the table depicts (i.e. a brief comment that is sufficient for the reader to understand the main idea of the table).

Operation	Definition	Relevant Phrases
Negation (inversion, logical NOT)	***¬A*** **not *A*** not *A*	Not *A* It is wrong that *A*

1.4.3 Formulas

- Formulas should be centre aligned.
- Formula numbers are aligned to the *right* in parentheses.
- A reference to a formula in the text can be provided in different ways, depending on the meaning of the formula. Use the words *formula*, *equation*, *equality*, *optimization problem*, etc

with the formula number in inverted commas: “... the solution to the optimisation problem (8) depends on...”
- Only those formulas that are referenced in the text are numbered.
- All variables in formulas must be described (either somewhere in the text before the formula, or immediately thereafter).
- ***Tips***: Set the tab in the middle of the line with the "*centre aligned*" option to insert the formula, and at the end of the line, about 15.5 cm, to insert the function number.
- If you have formulas in your text and you are still reading these recommendations, but have not downloaded the LaTeX template, then we strongly recommend that you think again about your choice =).

Formula example:

$$s = v * t, \tag{1}$$

where s - distance; v - speed; t - time.

1.4.4 References

- All sources listed in the bibliography must be referenced in the text. References in the text are provided in square brackets. Examples: [2], [5–7], [3, 8, 12].
- Such details as the author, title, place of publication (journal, conference, etc), and year of publication must be provided for each source in the bibliography.
- If you refer to online sources, make sure to indicate the date you accessed the given resource, since materials in such sources can change at any moment, unlike published papers.

An example of describing sources listed in the bibliography ([1] – conference paper, [2] – arXiv preprint, [3] – journal article, [4] – online source):

[1] Nadezhda Chirkova, Ekaterina Lobacheva and Dmitry Vetrov. Bayesian Compression for Natural Language Processing. Proceedings of the Conference on Empirical Methods in Natural Language Processing (EMNLP). 2018.

[2] Nadezhda Chirkova, Ekaterina Lobacheva and Dmitry Vetrov. “Bayesian Compression for Natural Language Processing”. arXiv preprint, arXiv:1810.10927, version 2. 2018.

[3] George D. Greenwade. The Comprehensive Tex Archive Network (CTAN). TUGBoat 14.3 (1993), c. 342—351.

[4] Donald Knuth. Knuth: Computers and Typesetting. URL: http://www-cs-faculty.stanford.edu/~uno/abcde.html (date 16.05.2013).

Annex 8

NATIONAL RESEARCH UNIVERSITY
HIGHER SCHOOL OF ECONOMICS

Faculty of Computer Science
Bachelor's Programme in Data Science and Business Analytics

Research Project Report on the Topic:

Title of the Project

Prepared by:
Student of the Group БПАД201
Ivanov Ivan Ivanovich

_____ _____
(signature) *(date)*

Checked by the Project Supervisor:

Petrov Petr Petrovich
Senior Lecturer
Faculty of Computer Science, HSE University

_____ _____
(signature) *(date)*

Moscow 202__

Annex 9

NATIONAL RESEARCH UNIVERSITY
HIGHER SCHOOL OF ECONOMICS

Faculty of Computer Science
Bachelor's Programme in Data Science and Business Analytics

Software Project Report on the Topic:

Title of the Project

Prepared by:
Student of the Group БПАД201
Ivanov Ivan Ivanovich

_____ _____
(signature) *(date)*

Checked by the Project Supervisor:

Petrov Petr Petrovich
Senior Lecturer
Faculty of Computer Science, HSE University

_____ _____
(signature) *(date)*

Moscow 202__

Annex 10

NATIONAL RESEARCH UNIVERSITY
HIGHER SCHOOL OF ECONOMICS

Faculty of Computer Science
Bachelor's Programme in Data Science and Business Analytics

Research Project Report on the Topic:

Title of the Project

Prepared by:
Student of the Group БПАД201
Ivanov Ivan Ivanovich

_____ _____
(signature) *(date)*

Student of the Group БПАД201
Smirnov Ivan Ivanovich

_____ _____
(signature) *(date)*

Checked by the Project Supervisor:

Petrov Petr Petrovich
Senior Lecturer
Faculty of Computer Science, HSE University

_____ _____
(signature) *(date)*

Moscow 202__

Annex 11

NATIONAL RESEARCH UNIVERSITY
HIGHER SCHOOL OF ECONOMICS

Faculty of Computer Science
Bachelor's Programme in Data Science and Business Analytics

Software Project Report on the Topic:

Title of the Project

Prepared by:
Student of the Group БПАД201
Ivanov Ivan Ivanovich

_____ _____
(signature) *(date)*

Student of the Group БПАД201
Smirnov Ivan Ivanovich

_____ _____
(signature) *(date)*

Checked by the Project Supervisor:

Petrov Petr Petrovich
Senior Lecturer
Faculty of Computer Science, HSE University

_____ _____
(signature) *(date)*

Moscow 202__

Annex 12

Government of the Russian Federation
National Research University Higher School of Economics
Faculty of Computer Science
Bachelor's Programme in Data Science and Business Analytics

Feedback on Research Project

On the topic of _____
Topic of project

Completed by

_____
Full name

a student in _____ year, group _____

No.	**Evaluation Criteria**	**Score (on a 10-point scale)**
1.	Relevance and clarity of the task	
2.	Completeness of information sources	
3.	Complexity and scope of the work's theoretical component	
4.	Complexity and scope of the work's practical (experimental) component; quality of research outcomes analysis	
5.	Scientific innovativeness of research outcomes	
6.	Report quality	

Plagiarism evaluation from the Anti-Plagiarism System (cannot exceed 20%).
The Project Supervisor's explanatory note if the permissible percentage of plagiarism has been exceeded:

_____

The Project Supervisor's text commentary (mandatory field):

THE SUPERVISOR'S FINAL SCORE (on a 10-point grading scale) _____

Supervisor

_____ _____

(signature) *(Full name, degree, position, place of work)*

Date

Conversion Scale at HSE University

Score (on a 10-point scale)	**Score (on a 5-point scale)**	**Grades shown in the Diploma Supplement**	
10	Excellent	A +	Excellent
9	Excellent	A	Very good
8	Excellent	A -	Very good
7	Good	B +	Good
6	Good	B -	Good
5	Satisfactory	C +	Satisfactory
4	Satisfactory	C -	Satisfactory
3	Fail	F	Fail
2	Fail	F	Fail
1	Fail	F	Fail

A grade of "0" can be given to a student as a disciplinary measure (for cheating or any other violation of academic standards).

Annex 13

Government of the Russian Federation
National Research University Higher School of Economics
Faculty of Computer Science
Bachelor's Programme in Data Science and Business Analytics

Feedback on Software Project

On the topic of _____
Topic of project

Completed by

_____
Full name

a student in _____ year, group _____

No.	**Evaluation Criteria**	**Score (on a 10-point scale)**
1.	Relevance and clarity of the task	
2.	Completeness of information sources, as well as an overview of the subject area and equivalents	
3.	Complexity and scope of the work's theoretical component	
4.	Complexity and scope of the programme implementation and proposed technological solutions	
5.	Scientific innovativeness and practical application of research outcomes	
6.	Report quality	

Plagiarism evaluation from the Anti-Plagiarism System (cannot exceed 20%).
The Project Supervisor's explanatory note if the permissible percentage of plagiarism has been exceeded:

_____

The Project Supervisor's text commentary (mandatory field):

THE SUPERVISOR'S FINAL SCORE (on a 10-point grading scale) _____

Supervisor

_____ _____

(signature) *(Full name, degree, position, place of work)*

Date

Conversion Scale at HSE University

Score (on a 10-point scale)	**Score (on a 5-point scale)**	**Grades shown in the Diploma Supplement**	
10	Excellent	A +	Excellent
9	Excellent	A	Very good
8	Excellent	A -	Very good
7	Good	B +	Good
6	Good	B -	Good
5	Satisfactory	C +	Satisfactory
4	Satisfactory	C -	Satisfactory
3	Fail	F	Fail
2	Fail	F	Fail
1	Fail	F	Fail

A grade of "0" can be given to a student as a disciplinary measure (for cheating or any other violation of academic standards).

Annex 14

Suggested Presentation Content (Slides)

Your presentation may include some of these slides. You can add your own slides, if necessary.

1. Title slide (specifying the title of your paper, the author's name [full name and group], supervisor [full name, position, place of employment, academic degree]);
2. A description of the relevant field of study;
3. Key terms, abbreviations, and definitions;
4. A statement of the research relevance;
5. Goals and objectives of the research (one goal and objectives N > 1);
6. Requirements for the software program product (for software projects);
7. Analysis of existing approaches, methods, models, algorithms, and solutions. Selection of the methods, algorithms, models, etc, used in the project;
8. Description of methods, algorithms, models, etc, developed by students;
9. Means of implementation, including using library materials (for software projects);
10. Software program architecture, special aspects of the project implementation, your inventions and effective solutions, etc (for software projects);
11. Interfaces and screenshots (for software projects);
12. Plans of experiments (for research projects);
13. Outcomes of experiments (for research projects);
14. Demonstration of the program and/or application operation (you can use video) (for software projects);
15. Key outcomes and conclusions. Project's innovativeness and/or practical relevance. Can the results be published, or the software program be registered as intellectual property (IP);
16. Work prospects;
17. List of sources (Bibliography); all slides must be numbered.

Please see template forms for HSE University presentations at this link: https://www.hse.ru/info/brandbook, or sample presentations available on the FCS website: https://cs.hse.ru/style.

Annex 15

Student Internship Agreement

_____ ___ _____20__.

National Research University Higher School of Economics, hereinafter referred to as "HSE University," represented by the Dean of the Faculty of Computer Science Ivan Vladimirovich Arzhantsev, acting on the basis of Power of Attorney No. 6.13-08.1/090123-3, dated January 9, 2023, on the one hand, and

_____,
name of the Industry-Specific Organisation

hereinafter referred to as the "Organisation," represented by _____,
signatory's full name

acting on the basis of Power of Attorney No. _____, dated _____, on the other hand, individually referred to as the "Party," and jointly as the "Parties," have entered into this Student Internship Agreement (hereinafter, the "Agreement") concerning the following:

1. Subject of the Agreement

1.1. This Agreement has been signed with the aim of organising a student internship (hereinafter, the "internship") at HSE University.

1.2. The degree programme (programmes) and the elements therein, which include the organisation of an internship and the number of students mastering the relevant elements of the degree programme, as well as the period of the internship, shall be agreed upon by the Parties by signing letters, as per the procedure established in Clause 4.5 hereof. The Parties shall reach an agreement on the organisational aspects of the student internship before the starting date of the internship.

Option 1 (applicable for internships organised in a full-time format)

1.3. Elements of the degree programme shall be implemented on the premises of the Organisation at the following address _____.

Option 2 (applicable for internships organised in a remote format)

1.3. Elements of the degree programme shall be implemented in a remote format, which does not involve the use of the Organisation's premises. Pursuant to Part 4, Article 16 of Federal Law No. 273-FZ, dated December 29, 2012, "On Education in the Russian Federation," the student internship organised as part of the study process in a remote format shall be carried out at HSE University.

2. Rights and Obligations of the Parties

2.1. HSE University undertakes to:

2.1.1. send an offer in the Organisation's name, at least 10 (ten) days before the starting date of the internship to the address specified in Clause 5 hereof, with the degree programme name and the description of the internship elements provided, as well as a list of names of learners who are expected to master relevant elements of the degree programme as part of their internship in every element of the degree programme, and the internship dates;

2.1.2. appoint an internship supervisor, on behalf of the University, who will:

2.1.2.1. facilitate the organisation of educational activities in the form of a student internship for the implementation of certain elements of the degree programme;

2.1.2.2. organise the involvement of students in certain types of activities, pertaining to their future professional activities;

2.1.2.3. provide methodological support to HSE University's students for completing certain types of work, pertaining to their future professional activities;

2.1.2.4. assume responsibility in conjunction with the authorised representative of the Organisation for the implementation of elements of the degree programme in the form of a student internship, as well as for the life and health of students and the University's staff, compliance with fire

safety rules, labour protection rules, safety measures, sanitary and epidemiological rules, and hygienic standards;

2.1.3. notify the Organisation within 10 (ten) days in the event of the internship supervisor's replacement;

2.1.4. establish types of educational activities, practical training, and other elements of the degree programme, which must be mastered by students as part of their internship, including venues, duration, and period of their implementation;

2.1.5. second students to the Organisation so that they may master elements of the degree programme in the form of an internship.

2.2. The Organisation undertakes to:

2.2.1. at least within 5 (five) days upon receipt of HSE University's offer letter, send a confirmation in HSE University's name to the address, specified in Clause 5 hereof, with their consent to host HSE University's students for an internship at the Organisation;

2.2.2. ensure the conditions for the implementation of elements of the degree programme as part of the internship, unless otherwise provided for in Clause 1.3 hereof; provide equipment and technical training aids in a scope that would enable students to perform certain types of work pertaining to their future professional activities;

2.2.3. appoint a qualified supervisor from among the Organisation's staff eligible to engage in teaching activities, as per the requirements of the labour legislation of the Russian Federation and responsible for organising the implementation of the elements of the degree programme in the form of a student internship at the Organisation;

2.2.4. ensure that the appointed individual meets the requirements of the labour legislation of the Russian Federation as an individual eligible to engage in teaching activities, and make sure to obtain and submit their written representations to HSE University, as per the template form established by HSE University (Annex No.1 to the Agreement),

2.2.5. notify the University within 10 (ten) days in the event of the replacement of the individual, specified in Clause 2.2.3 hereof above, and make sure to obtain representations from the individual appointed as a qualified supervisor, pursuant to Clause 2.2.4 hereto;

2.2.6. ensure safe conditions for the implementation of the elements of the degree programme as part of the student internship, compliance with fire safety rules, labour protection rules, safety measures, sanitary and epidemiological rules, and hygienic standards;

2.2.7. assess that the working conditions at workplaces used during the implementation of elements of the degree programme in the form of a student internship, and keep the University administration informed about the working conditions and labour protection requirements at the workplace;

2.2.8. familiarise students with applicable Internal Labour Regulations at the Organisation;

2.2.9. make sure that the student has been provided with relevant instructions with respect to the labour safety requirements and on-site safety;

2.2.10. if there is a breach of the Internal Labour Regulations, as well as labour safety requirements and on-site safety rules, on the part of the student, the internship supervisor, as a representative of the University, shall be immediately notified thereof.

2.3. The University shall be entitled to:

2.3.1. monitor compliance with the conditions for the implementation of elements of the degree programme in the form of a student internship as per the terms and conditions under this Agreement;

2.3.2. request information on the organisation of the internship, e.g., in regards to the quality and scope of work performed by learners with due regard to their future professional activities;

2.3.3. request that a qualifying supervisor appointed by the Organisation provide representations in writing, as per Clause 2.2.4 of the Agreement.

2.4. The Organisation shall be entitled to:

2.4.1. require that students observe the Internal Labour Regulations, labour protection and safety measures, and confidentiality rules in effect at the Organisation, as well as take all necessary steps aimed at preventing any disclosure of confidential information;

2.4.2. if confidentiality obligations are violated by students during their internship, suspend the implementation of elements of the degree programme in the form of a student internship with respect to the student.

3. Term of the Agreement

3.1. This Agreement shall come into force upon its signing by the Parties and remain valid for___ (____) years.

4. Final Provisions

4.1. Any disputes and/or controversies arising between the Parties hereunder shall be settled through negotiations.

4.2. If the disputes cannot be settled through negotiations, the Parties shall resort to legal proceedings.

4.3. Any amendments to this Agreement shall be introduced upon the mutual consent of the Parties and put into writing in the form of addendums hereto, which shall form an integral part hereof.

4.4. The Agreement can be terminated by the mutual consent of the Parties, by a court order, or unilaterally in the result of either Party's refusal to fulfil the Agreement. The Party initiating a unilateral refusal from the Agreement must notify the other Party at least 2 (two) months before the termination of the Agreement.

4.5. All letters, messages, warnings, notices, statements, and other legally significant messages (hereinafter referred to as the "message") of the Parties in relation to this Agreement shall be sent by the Parties in writing by email or through public postal service operators (hereinafter referred to as "mail"), by registered mail with acknowledgement of delivery and receipt, while claims shall be accompanied with a list of attachments, to the addresses specified in Clause 5 of the Agreement, or handed over by courier against the signature of an authorised representative of the receiving Party.

4.6. This Agreement is drawn up in 2 (two) copies of equal legal status, with 1 (one) copy for each Party.

4.7. The following annexes shall be attached to the Agreement and form an integral part thereof:

Annex No. 1 – Template form of Representations, provided by the supervisor responsible for organising the implementation of the elements of the degree programme as part of the student internship at the Organisation.

5. Addresses, Details, and Signatures of the Parties

Organisation: [*name*] [*address*] [*TIN*] [*RRC*] Contact person: [*full name, position*] Contact telephone No.: [*telephone No.*] Contact email: [*email address*]	**HSE University:** National Research University Higher School of Economics Legal address: 20 Myasnitskaya Ulitsa, Moscow, Russia, 101000, TIN 7714030726 RRC 770101001 For correspondence: 11 Pokrovsky Bulvar, Moscow, 109028, Office T906 Contact person: Rakhat Zhoroeva, CIPE Manager; Contact telephone No.: +7 (495) 772-95-90, ext. 27291 Contact email: rzhoroeva@hse.ru Corporate email: cppr.cs@hse.ru
Position _____/initials, last name/ Seal	Dean, Faculty of Computer Science _____/I.V. Arzhantsev/ seal

Annex 1 to the
Student Internship Agreement
Template form

----------beginning of template form----------

REPRESENTATIONS
provided by the supervisor responsible for organising the implementation of the elements of the degree programme as part of the student internship at the Organisation

1. To ensure safe conditions for the implementation of HSE University's internship at the Organisation –

_____
specify the Organisation's abbreviated name

(hereinafter referred to as the "Organisation") (Articles 28 and 41 of Federal Law No. 273-FZ "On Education in the Russian Federation," dated December 29, 2012, as well as the terms and conditions of the Student Internship Agreement between HSE University and the Organisation)

I, _____,
Full name

appointed as the supervisor responsible for organising the implementation of the elements of the degree programme as part of the student internship at the Organisation,

pursuant to Article 431.2 of the Civil Code of the Russian Federation, represent and guarantee to HSE University that no circumstances may prevent my engagement in teaching activities, i.e.:

I have not been deprived of the right to engage in teaching activities in accordance with a court ruling that has taken legal effect;

I have never had a criminal record, nor have I been subjected to criminal prosecution (except for the termination of criminal prosecution on the grounds of rehabilitation) for any crimes against life and health, freedom, honour and dignity of an individual person (except for illegal hospital admission to a medical institution providing inpatient psychiatric care services, and slander), the sexual integrity and sexual freedom of an individual, against family and minors, public health and public morals, the foundations of the constitutional order and state security, and the peace and security of humanity, as well as against public security;

I do not have any outstanding convictions for any other wilfully serious and especially grave crimes;

I have not been declared legally incompetent in accordance with the procedure established by federal law;

I do not suffer from any of the diseases enumerated in the list of harmful and/or hazardous industrial factors and work that require mandatory preliminary and periodical medical examinations (check-ups).

2. HSE University shall rely on the aforementioned guarantees and representations provided by the responsible person, which are material for the execution or termination of the Student Internship Agreement between HSE University and the Organisation.

3. I undertake to notify HSE University in writing as soon as practically possible to provide any information (as soon as I become aware thereof) about any matters, events, grounds, and/or circumstances (including any inaction) that may arise, or which I may become aware of, in the period after the Student Internship Agreement is concluded between HSE University and the Organisation and before its expiration date, which would otherwise constitute a violation of any representations and the guarantees provided hereunder.

4. For the purposes of HSE University's compliance with the requirements of respective regulatory documents, orders issued by federal executive bodies, the decisions of municipal authorities, resolutions, instructions, and inquiries from agencies and persons exercising relevant

functions and powers as the University's founders, engaged in any control, supervisory, and other verification activities with respect to HSE University, including auditors, with the aim of ensuring that the University monitors the activities of any persons who come into direct contact with minors in the course of their professional activities, I hereby give HSE University my consent for the latter, starting from the date of the signing of these representations and throughout the entire period of the Student Internship Agreement between the University and the Organisation, to undertake the following operations: recording, systematizing, accumulating, storing, clarifying, extracting, using, and transferring (exclusively within the designated purposes) my personal data contained in these representations, including automated processing of such data. This period shall not set limits on the University with respect to the organisation of the archival storage of documents with personal data in an electronic (digital) format.

I hereby give my consent to the depersonalisation, blocking, deletion, and destruction of my personal data whenever it is necessary and/or possible for the specified goals.

I am aware that my consent to the processing of my personal data may be withdrawn on the basis of my written request submitted to HSE University that outlines my reasons for submitting such a withdrawal request.

The supervisor responsible for organising the implementation of the elements of the degree programme as part of the student internship at the Organisation:

_____

Full name

_____

signature, initials, last name

Date: _____ _____20___.

----------end of template form----------

Organisation: **[*name*]**	**HSE University:**
Position _____/initials, last name / seal	Position _____/initials, last name / seal

Annex 16

Attention: Head
_____
_____
_____
(*full name and position of the Organisation's head*)

Re: Offer Letter for Signing the Student Internship Agreement
between HSE University and the Organisation

Dear _____,

National Research University Higher School of Economics (hereinafter, "HSE University") hereby offers you the opportunity to sign a Student Internship Agreement with the aim of organising student internships for HSE University students at _____ (*the Organisation's full name*) (hereinafter, the "Organisation") under the following terms:

No.	**Type, degree level, field of study or specialisation, and name of degree programme**	**Element of degree programme**	**Number of students**	**Duration (from ___ until ___)**

- total duration of the student internship: from _____ until _____;
- number of students:_____;
- duration of the Student Internship Agreement: until all obligations of the Parties are fulfilled;
- an internship organised in a remote format (elements of the degree programme shall be implemented in a remote format, which does not involve the use of the Organisation's premises)/an internship organised on the premises of the Organisation[5].

_____ *(position and full name of the internship supervisor on the part of HSE University)* shall be appointed as the internship supervisor on the behalf of HSE University.

This letter represents an offer to sign a Student Internship Agreement with the aim of organising internships for HSE University's students, as provided for by Article 435 of the Civil Code of the Russian Federation.

If the Organisation accepts HSE University's offer to sign the Student Internship Agreement, as per the aforementioned terms and conditions, the Organisation and HSE University shall assume the rights and obligations indicated in Annex 1 hereto.

[5] Specify as appropriate: either an internship organised in a remote format or on the premises of the Organisation.

Please inform us of your decision in writing by a reply letter.

If you agree to sign the Student Internship Agreement with HSE University, please confirm the acceptance of the terms and conditions of this offer, provide information about the contact staff member who will be in charge of the implementation of elements of the degree programme in the form of a student internship on the part of the Organisation (*full name of qualified supervisor*), and attach a list of the premises that will be used for the purposes of student internships at the Organisation (except in those cases where the internship is organised in a remote format).

In accordance with Article 438 of the Civil Code of the Russian Federation, the response letter will be deemed your acceptance of the offer to sign the Student Internship Agreement between HSE University and the Organisation under the conditions specified in the offer letter.

Please find attached a template form for a letter of acceptance to sign the Student Internship Agreement.

Annex:

1. Rights and obligations of HSE University and the Organisation, drawn up on two pages in one copy;
2. Template form of an acceptance letter, drawn up on two pages in one copy;
3. Representations of the supervisor responsible for organising the implementation of the elements of the degree programme as part of the student internship at the Organisation, drawn up on two pages in one copy;
4. Template form for the list of premises allocated for the student internship at the Organisation, drawn up on one page in one copy.

Dean _____

Annex 1 to the Offer Letter

Rights and Obligations of HSE University and the Organisation under the Student Internship Agreement

1.1. HSE University undertakes to:

1.1.1. send an offer in the name of the Organisation at least 10 (ten) days before the starting date of the internship to the address specified in Clause 5 hereof, with the name of the degree programme and a description of the internship elements provided, as well as a list of the names of learners who are expected to master relevant elements of the degree programme as part of their internship in every element of the degree programme, and the internship dates;

1.1.2. appoint an internship supervisor on behalf of the University, who will:

1.1.2.1. facilitate the organisation of educational activities in the form of a student internship for the implementation of certain elements of the degree programme;

1.1.2.2. organise the involvement of students in certain types of activities, pertaining to their future professional activities;

1.1.2.3. provide methodological support to HSE University's students for completing certain types of work, pertaining to their future professional activities;

1.1.2.4. assume responsibility in conjunction with the authorised representative of the Organisation for the implementation of elements of the degree programme in the form of a student internship, as well as for the life and health of students and the University's staff, compliance with fire safety rules, labour protection rules, safety measures, sanitary and epidemiological rules, and hygienic standards;

1.1.3. notify the Organisation within 10 (ten) days in the event of the internship supervisor's replacement;

1.1.4. establish types of educational activities, practical training, and other elements of the degree programme, which must be mastered by students as part of their internship, including the relevant venues, duration, and period of their implementation;

1.1.5. second students to the Organisation so that they may master elements of the degree programme in the form of an internship.

1.2. The Organisation undertakes to:

1.2.1. ensure conditions for the implementation of elements of the degree programme as part of the internship, unless otherwise provided in Clause 1.3 hereof; provide equipment and technical training aids in the volume that would enable students to perform certain types of work pertaining to their future professional activities;

1.2.2. appoint a qualified supervisor from among the Organisation's staff who is eligible to engage in teaching activities, as per the requirements of the labour legislation of the Russian Federation, and is responsible for organising the implementation of the elements of the degree programme in the form of a student internship at the Organisation;

1.2.3. ensure that the appointed individual meets the requirements of the labour legislation of the Russian Federation as an individual eligible to engage in teaching activities, and make sure to obtain and submit their written representations to HSE University, as per the template form established at HSE University (Annex No.1 to the Agreement);

1.2.4. notify the University within 10 (ten) days in the event of the replacement of the individual, specified in Clause 1.2.2 hereof above, and make sure to obtain representations from the individual appointed as a qualified supervisor, in accordance with Clause 1.2.3 hereto;

1.2.5. ensure safe conditions for the implementation of the elements of the degree programme as part of the student internship, and compliance with fire safety rules, labour protection rules, safety measures, sanitary and epidemiological rules, and hygienic standards;

1.2.6. assess the working conditions at workplaces used during the implementation of elements of the degree programme in the form of a student internship, and keep the University administration informed about the working conditions and labour protection requirements in the workplace;

1.2.7. familiarise students with the applicable Internal Labour Regulations at the Organisation;

1.2.8. make sure that the student has been provided with relevant instructions with respect to the labour safety requirements and on-site safety rules;

1.2.9. if there is a breach of Internal Labour Regulations, as well as labour safety requirements and on-site safety rules, on the part of the student, the internship supervisor, as the representative of the University, must be immediately notified thereof.

1.3. The University shall be entitled to:

1.3.1. monitor compliance with the conditions for the implementation of elements of the degree programme in the form of a student internship as per the terms and conditions under this Agreement;

1.3.2. request information on the organisation of the internship, e.g., in regards to the quality and scope of work performed by learners with due regard to their future professional activities;

1.3.3. request that the qualified supervisor appointed by the Organisation provide representations in writing, as per Clause 2.2.4 of the Agreement.

1.4. The Organisation shall be entitled to:

1.4.1. require that students observe the Internal Labour Regulations, labour protection and safety measures, and confidentiality rules in place at the Organisation, as well as take all necessary steps aimed at preventing any disclosure of confidential information;

1.4.2. if confidentiality obligations are violated by students during their internship, suspend the implementation of elements of the degree programme in the form of a student internship with respect to the given student.

Annex 2 to the Offer Letter

Attention: I.V. Arzhantsev
Dean
Faculty of Computer Science (FCS)
National Research University
Higher School of Economics
(HSE University)

20 Myasnitskaya Ulitsa
Moscow, Russia, 101000

Acceptance Letter
Re: Signing the Student Internship Agreement
between HSE University and the Organisation

Dear Ivan Vladimirovich,

_____ (*the Organisation's full name*) (hereinafter referred to as the "Organisation") hereby accepts your offer as presented in Letter No. ___, dated _____ to sign the Student Internship Agreement with National Research University Higher School of Economics (HSE University) with respect to _____ (*specify the number of students*) students in the *Bachelor's, Specialist, or Master's programme (select as appropriate),* in the field(s) of study with a major(s) in _____*(specify the field[s] of study or major[s])*

and confirms our consent to all the terms and conditions in your offer to sign the Student Internship Agreement.

_____ (*full name*) shall be appointed as the internship supervisor from among the Organisation's staff qualified to engage in teaching activities, as per the requirements of the labour legislation of the Russian Federation, and is responsible for organising elements of the degree programme in the form of student internship at the Organisation.

[The paragraph in italics shall be included in the letter only if the internship is organised on the premises of the Organisation (not in a remote format)]:

Elements of the degree programme, as agreed by the Parties, shall be carried out on the premises of the Organisation as part of the student internship, as specified in the Annex, which forms an integral part of this Acceptance Letter.

In accordance with Article 438 of the Civil Code of the Russian Federation, this letter will be deemed to be your acceptance of the offer to sign the Student Internship Agreement between HSE University and the Organisation under the conditions specified in Offer Letter No. ____, dated _____.

Annexes:

1. Representations of the supervisor responsible for the student internship at the Organisation, drawn up on two pages in one copy;
2. A list of the premises allocated for the student internship is drawn up on one page in one copy.

_____

Signature: Supervisor responsible for the student internship at the Organisation

Annex 3 to the Offer Letter

REPRESENTATIONS
provided by the supervisor responsible for organising the implementation of the elements of the degree programme as part of the student internship at the Organisation

____ _____20_____.

1. To ensure safe conditions for the implementation of HSE University's internship at the Organisation –

_____
specify the Organisation's abbreviated name

(hereinafter, the "Organisation") (Articles 28 and 41 of Federal Law No. 273-FZ "On Education in the Russian Federation," dated December 29, 2012, as well as the terms and conditions of the Student Internship Agreement between HSE University and the Organisation)

I, _____,
Full name

appointed as the supervisor responsible for organising the implementation of the elements of the degree programme as part of the student internship at the Organisation,

pursuant to Article 431.2 of the Civil Code of the Russian Federation, represent and guarantee to HSE University that no circumstances may prevent my engagement in teaching activities, i.e.:

I have not been deprived of the right to engage in teaching activities in accordance with a court ruling that has taken legal effect;

I have never had a criminal record, nor have I been subjected to criminal prosecution (except for the termination of criminal prosecution on the grounds of rehabilitation) for any crimes against life and health, freedom, honour, and dignity of an individual person (except for illegal hospital admission to a medical institution providing inpatient psychiatric care services, and slander), the sexual integrity and sexual freedom of an individual, against family and minors, public health and public morals, the foundations of the constitutional order and state security, and the peace and security of humanity, as well as against public security;

I do not have any outstanding conviction for any other wilfully serious and especially grave crimes;

I have not been declared legally incompetent in accordance with the procedure established by federal law;

I do not suffer from any of the diseases enumerated in the list of harmful and/or hazardous industrial factors and work that require mandatory preliminary and periodical medical examinations (check-ups), as approved by Russian Federation Ministry of Health and Social Development Order No. 302н[6], dated April 12, 2011.

2. HSE University shall rely on the aforementioned guarantees and representations provided by the responsible person, which are material for the execution or termination of the Student Internship Agreement between HSE University and the Organisation.

[6] 1) typhoid fever, paratyphoid fever, salmonellosis and dysentery; 2) helminthiases; 3) syphilis in the infectious period; 4) leprosy; 5) infectious skin diseases: scabies, trichophytosis, microsporia, scab, and actinomycosis with ulceration or fistulas on open parts of the body; 6) infectious and destructive forms of pulmonary tuberculosis, extrapulmonary tuberculosis with fistulas, bacteriuria, tuberculous lupus erythematosus of the face and hands; 7) ozena.

3. I undertake to notify HSE University in writing as soon as practically possible to provide any information (as soon as I become aware thereof) about any matters, events, grounds, and/or circumstances (including any inaction) that may arise, or which I may become aware of, in the period after the Student Internship Agreement is concluded between HSE University and the Organisation and before its expiration date, which would otherwise constitute a violation of any representations and the guarantees provided hereunder.

4. For the purposes of HSE University's compliance with the requirements of respective regulatory documents, orders issued by federal executive bodies, the decisions of municipal authorities, resolutions, instructions and inquiries from agencies and persons exercising relevant functions and powers as the University's founders, engaged in any control, supervisory, and other verification activities with respect to HSE University, including auditors, with the aim of ensuring that the University monitors the activities of any persons who come into direct contact with minors in the course of their professional activities, I hereby give HSE University my consent for the latter, starting from the date of the signing of these representations and throughout the entire period of the Student Internship Agreement between the University and the Organisation, to undertake the following operations: recording, systematizing, accumulating, storing, clarifying, extracting, using, and transferring (exclusively within the designated purposes) my personal data contained in these representations, including automated processing of such data. This period shall not set limits on the University with respect to the organisation of the archival storage of documents with personal data in an electronic (digital) format.

I hereby give my consent to the depersonalization, blocking, deletion, and destruction of my personal data whenever it is necessary and/or possible for the specified goals.

I am aware that my consent to the processing of my personal data may be withdrawn on the basis of my written request submitted to HSE University that outlines my reasons for submitting such a withdrawal request.

The supervisor responsible for organising the implementation of the elements of the degree programme as part of the student internship at the Organisation:

_____

Full name

_____

signature, initials, last name

Date: _____ _____20___.

Annex 4 to the Offer Letter

List of the Premises Allocated for the Student Internship at the Organisation

Address of the premises allocated for the student internship	**Premises (room) No.**

Organisation:
[*name*]

Position

_____/Initials, last name/
seal

HSE University:

Dean, Faculty of Computer Science

_____/ I.V. Arzhantsev /
seal

Annex 17

APPROVED

Academic Supervisor
Bachelor's Programme in
Data Science and Business Analytics

_____ /full name/

____ _____20__ .

To: Academic Supervisor
Bachelor's Programme in
Data Science and Business Analytics
_____
from _____
_____
(full name)

student _____year _____group
Bachelor's Programme in
Data Science and Business Analytics
Faculty of Computer Science (FCS)
Contact telephone No.: _____
email: _____

APPLICATION FOR AN EARLY INTERNSHIP

I, _____, student _____ year of study at FCS, degree programme _____, hereby request your permission to complete the academic internship, academic and production internship, or work placement (underline as appropriate) ahead of schedule due to my internship or employment at (the relevant organisation)

_____
__
from _____until_____.
The internship content and outcomes meet the requirements stipulated in the internship programme.

Please find the following documents attached:

- *A signed agreement with annexes / An annex to the signed agreement;*
  underline as appropriate
- *Individual assignment;*
- *Working plan (schedule) for completing the internship;*

I hereby undertake to submit the following documents AFTER the end of the internship by_____:

- *Feedback provided by the Organisation's supervisor;*
- *Internship report;*

_____ _____ 20___. _____

Signature and student's full name

_____
Filled in by CIPE staff

All documents for completing the internship have been duly prepared and submitted by the student.	

Internship period from _____ until _____ approved	

Signature, full name, and date

Annex 18

APPROVED

Academic Supervisor
Bachelor's Programme in
Software Engineering

_____ /full name/

____ _____20__ .

To: Academic Supervisor
Bachelor's Programme in
Software Engineering

_____

from _____

_____

(full name)

student _____year _____group
Bachelor's Programme in
Software Engineering
Faculty of Computer Science (FCS)
Contact telephone No.: _____
email: _____

APPLICATION FOR AN EARLY INTERNSHIP

I, _____, student _____ year of study at FCS, degree programme _____, hereby request your permission to complete the academic internship, academic and production internship, or work placement (underline as appropriate) ahead of schedule due to my internship or employment at (the relevant organisation)

_____

__

from _____until_____.

The internship content and outcomes meet the requirements stipulated in the internship programme.

Please find the following documents attached:

- *A signed agreement with annexes / An annex to the signed agreement;*
  underline as appropriate
- *Individual assignment;*
- *Working plan (schedule) for completing the internship;*

I hereby undertake to submit the following documents AFTER the end of the internship by_____:

- *Feedback provided by the Organisation's supervisor;*
- *Internship report;*

_____ _____ 20___. _____

Signature and student's full name

_____

Filled in by CIPE staff

All documents for completing the internship have been duly prepared and submitted by the student.	

Internship period from _____ until _____ approved	

Signature, full name, and date

Annex 19

APPROVED

Academic Supervisor
Degree Programme

_____ /full name/

____ _____20__ .

To: Academic Supervisor
Degree Programme

_____
Academic Supervisor's full name
from _____
_____
(student's full name)

student _____year _____group
Degree Programme at FCS
Contact telephone No.: _____
email: _____

APPLICATION FOR INTERNSHIP RESCHEDULING

I, _____, student _____ year of study at FCS, degree programme _____, hereby request your permission to reschedule the dates of my summer internship from 01.07.2_ to 15.07.2_ to _____ due to _____

provide the reason

I hereby undertake to upload the following documents BEFORE the internship starting date by _____ (at least 1 (one) calendar day before the internship starting date):

- *Individual assignment;*
- *Working plan (schedule) for completing the internship;*

I hereby undertake to submit the following documents AFTER the end of the internship by_____ (at least ___ day[s]):

- *Feedback provided by the Organisation's supervisor;*
- *Internship report;*

_____ _____ 20___. _____

Signature and student's full name

_____
Filled in by CIPE staff

All documents for completing the internship have been duly prepared and submitted by the student.	
Internship period from _____ until _____ approved	

Signature, full name, and date

Annex 20

National Research University Higher School of Economics

INDIVIDUAL ASSIGNMENT COMPLETED DURING THE INTERNSHIP

_____

(last name, first name, patronymic [if applicable])

Student of group_____, in Year ___ of full-time study

Degree programme _____
in the field of
Faculty _____
Internship form _____
Internship type
_____
(academic internship, work placement, production internship)

Internship timeframe From/to _____2020
_____2020

Internship goals[1]:
_____
_____

Tasks to solve[2]:
1. _____
2. _____
3. _____
N. _____

Internship contents (subjects for study):
1. _____
2. _____
3. _____
N. _____

[1] As per the internship programme

[2] As per the internship programme

Anticipated outcomes: _____

_____

_____

_____

_____

WORKING PLAN (SCHEDULE) FOR COMPLETING THE INTERNSHIP

No.	Timeframe	Provisional list of work
1		1. Orientation session
2		2. **Occupational health and safety orientation, fire safety rules, labour protection rules, and safety measures**[6]
3		3.
4		4.
5		5.
6		3. Drawing up and submitting the Internship Report
7		

Student _____ / _____
(signature) *(full name)*

Internship supervisor from HSE University _____ / _____
(signature) *(full name)*

Internship supervisor from the Organisation _____ / _____
(signature) *(full name)*

Sample title page for internship report

National Research University Higher School of Economics

Internship Report

on <u>academic internship, production, or work placement</u>

select as appropriate

Completed by student

_____

Field of study (qualification)

_____

Degree programme

_____

<u>Full-time</u> mode, group

_____

Evaluated by:

_____

(position, full name of supervisor from organisation/HSE University)

_____ _____

(grade) *(signature)*

_____

(date)

Annex 21

Internship Feedback Template form

Internship Feedback

student (s)_____

group_____

Degree Programme in Data Science and Business Analytics

Faculty of Computer Science at HSE University

from _____ until _____

at _____

The following professional tasks were assigned to the student in the course of the academic internship:

1. _____
2. _____
3. _____
4. _____

Brief description of how accurately and thoroughly the internship assignment was completed. Brief description of the thoroughness and quality of the submitted report.

During the internship, the student demonstrated (strengths, weaknesses, notes)

The student has earned a grade of ___ points out of 10.

CONVERSION SCALE AT HSE UNIVERSITY

Score (on a 10-point scale)	**Score (on a 5-point scale) for examinations**	**Score for pass/fail examination**
10	Excellent	Pass
9	Excellent	Pass
8	Excellent	Pass
7	Good	Pass
6	Good	Pass
5	Satisfactory	Pass
4	Satisfactory	Pass
3	Fail	Fail
2	Fail	Fail
1	Fail	Fail

I have familiarised myself with the internship report submitted by the student(s).

_____	_____	_____	_____
Date	Position, academic degree	Supervisor's full name	Signature

Annex 22

Thesis Deadlines

Dates	Stages
October 20	Starting date for choosing a topic, submitting original topics, meeting with the programme office and the academic supervisor
November 20 by 23:59	Submitting a topic for approval
November 16	Submitting an application for an original thesis topic with an internship supervisor appointed by an industry-specific organisation
November 16–25	Thesis topic defence
November 10	Closing applications for original topics
November 13	Closing applications for topics selected from the recommended list
December 5–6	Additional slots for defence of topics for those students who missed the deadline due to a legitimate reason
December 15	Issuing a directive on the assigned topics of theses
Appointed individually, if necessary	Additional slots for the defence of topics
February 15	Deadline for changing an academic supervisor and the first deadline for changing a thesis topic
April 15	Deadline for expunging academic failures for those who have not chosen a thesis topic
As per the approved schedule	Deadline for uploading the Project Proposal
February 25	Project Proposal defence
April 1–30	Pre-graduation internship
April 1–15	Searching reviewers
Appointed individually, if necessary	Additional slots for defence of topics
April 1	Deadline for changing a thesis topic
April 25–30	Pre-graduation internship defence
By April 30	Issuing a directive on the SEB members
By April 30	Issuing the FSC directive
May 10	First retake of the pre-graduation internship
May 15	Retake of the pre-graduation internship before commission
May 20	Uploading the thesis
May 16	Directive on admission to the FSC
May 27	Academic supervisor's feedback
May 30–June 14	Defence of theses
As per the date of the directive on the FSC	Presidium meetings
Within 7 (seven) calendar days	Graduation directive