

**Federal State Autonomous Educational Institution of Higher Education "Moscow  
Institute of Physics and Technology  
(National Research University)"**

**APPROVED**  
**Vice Rector for Academic Affairs**

**A.A. Voronov**

**Work program of the course (training module)**

**course:** English Language. Modern State of Artificial Intelligence/Английский язык.  
Современное состояние искусственного интеллекта

**major:** Photonics and Optical Informatics

**specialization:** Photonics, Quantum Technologies & 2D Materials/Фотоника, квантовые технологии и  
двумерные материалы  
Landau Phystech-School of Physics & Research  
Foreign Languages Department

**term:** 1

**qualification:** Master

Semesters, forms of interim assessment:

1 (fall) - Pass/fail exam

2 (spring) - Grading test

Academic hours: 120 AH in total, including:

lectures: 0 AH.

seminars: 120 AH.

laboratory practical: 0 AH.

Independent work: 60 AH.

In total: 180 AH, credits in total: 4

Number of course papers, tasks: 4

Author of the program: L.I. Tararina, candidate of pedagogical sciences, associate professor, associate professor

The program was discussed at the Foreign Languages Department 30.06.2023

## Annotation

The program is aimed to form a holistic understanding of the main problems, types and forms of intercultural activity in the aspect of using new digital technologies at the present stage, to develop students' ability to perceive relevant information in English, analyze English-language materials in the specialty and discuss options for solving various interdisciplinary problems at the intersection AI and the real world, taking into account the social context, as well as improving communication skills in the professional field related to the use of AI; to form and develop practical skills in oral and written communication, correlating with the areas of activity of the future graduate; skills of conducting intercultural dialogue to solve communicative and social problems with representatives of other cultures in academic and professional activities. Successful mastery of the course will allow students to replenish their lexicon with vocabulary used in texts on the relevant topic, master the skills of using lexical and grammatical material included in the course program, and also develop communication skills (at level B2-C1 according to the Common European Classification).

### 1. Study objective

#### Purpose of the course

The study of the main directions of development and the state of artificial intelligence at the present stage as a promising section of data science: methods of intelligent analysis of big data, machine learning methods, methods of presentation and primary data processing, opportunities, advantages and limitations of AI technologies in their use, the use of artificial intelligence methods in scientific research and other areas of human activity, terminology of the AI sphere in Russian and English.

#### Tasks of the course

To form the ability of the student to solve communicative tasks by language means in various situations of professional intercultural communication, to carry out interpersonal and professional communication in a foreign language, taking into account the peculiarities of the culture of the language being studied and the sphere of professional activity of the student, as well as the ability to overcome intercultural differences in situations of social and professional communication; to teach proficiency in specialized vocabulary, to understand and describe situations of artificial intelligence application in various fields of knowledge, such as: public administration, education, healthcare, science, transport, industry, commerce; to be aware of the need to use and develop AI, to be ready to implement the developments of fundamental science in a specific product created on the basis of information technology; freely use terminology related to the field of AI in both Russian and English.

### 2. List of the planned results of the course (training module), correlated with the planned results of the mastering the educational program

Mastering the discipline is aimed at the formation of the following competencies:

Code and the name of the competence	Competency indicators
UC-1 Use a systematic approach to critically analyze a problem and develop an action plan	UC-1.1 Systematically analyze the problem situation, identify its components and the relations between them
	UC-1.2 Search for solutions by using available sources
	UC-1.3 Develop a step-by-step strategy for achieving a goal, foresee the result of each step, evaluate the overall impact on the planned activity and its participants
UC-2 Manage all stages of a research project	UC-2.1 Set an objective within a defined scientific problem; formulate the agenda, relevance, significance (scientific, practical, methodological, or other depending on the project type), forecast the expected results and possible areas of their application
	UC-2.2 Forecast the project outcomes, plan necessary steps to achieve the outcomes, chart the project schedule and monitoring plan
	UC-2.3 Organize and coordinate the work of project stakeholders, provide the team with necessary resources
	UC-2.4 Publicly present the project results (or results of its stages) via reports, articles, presentations at scientific conferences, seminars, and similar events

UC-3 Organize and manage a team and develop the team strategy to achieve the objectives	UC-3.1 Organize and coordinate the work of the project stakeholders and help resolve disputes and conflicts
	UC-3.2 Consider the interests, specific behavior, and diversity of opinions of team members/colleagues/counterparties
	UC-3.3 Foresee the results (consequences) of both individual and collective actions
	UC-3.4 Plan teamwork, distribute tasks to team members, hold discussions of different ideas and opinions
UC-4 Use modern communication tools in the academic and professional fields, including those in a foreign language	UC-4.1 Exchange business information in oral and written forms in Russian and at least one foreign language
	UC-4.2 Use the acquired skills to write, translate, and edit various academic texts (abstracts, essays, reviews, articles, etc.)
	UC-4.3 Present the results of academic and professional activities in various academic events, including international conferences
	UC-4.4 Use modern ICT tools for academic and professional collaboration
UC-5 Analyze and consider cultural diversity in intercultural interactions	UC-5.1 Identify specific philosophical and scientific traditions in major world cultures
	UC-5.2 Define the theoretical and practical significance of cultural and linguistic factors within various interrelated philosophical and scientific traditions
UC-6 Determine priorities and ways to improve performance through self-assessment	UC-6.1 Achieve personal growth and professional development, determine priorities and ways to improve performance
	UC-6.2 Evaluate performance results in correlation with the set objectives and applied methods

### 3. List of the planned results of the course (training module)

As a result of studying the course the student should:

know:

- methods of system and critical analysis;
- methods of developing an action strategy to identify and solve a problem situation;
- stages of the project life cycle;
- stages of project development and implementation; methods of project development and management;
- methods of forming teams;
- methods of effective team management, characteristics of communicative behavior in the process of intercultural communication;
- basic leadership theories and leadership styles;
- rules and patterns of personal and business foreign language oral and written communication;
- modern communication technologies in Russian and foreign languages, culturally determined features of communication in the process of intercultural communication;
- existing professional communities for professional interaction;
- patterns and features of socio-historical development of various cultures;
- features of the intercultural diversity of society;
- rules and technologies of effective intercultural interaction; methods of self-assessment, self-control and self-development.

be able to:

- apply methods of a system approach and critical analysis of problem situations;
- to search for solutions to the problem situation and develop a strategy of actions to achieve the goal, to make certain decisions for its implementation, using the skills of foreign language oral and written speech;
- to assess the impact of the decisions taken on the external environment of the planned activity and the relationships of the participants in this activity;
- to develop a project considering the analysis of alternative options for its implementation, to determine the target stages, the main directions of work;
- formulate goals and objectives, relevance, significance related to the preparation and implementation of the project, expected outcomes and possible areas of their application, using the skills of foreign language oral and written speech;
- manage the project at all stages of its life cycle;
- organize and coordinate work with due account for the diversity of the project participants' cultures;
- develop a plan of group and organizational communications during the preparation and implementation of the project;
- formulate tasks for team members to achieve the goal; develop a team strategy using the skills of foreign language oral and written speech;
- apply effective team leadership styles to achieve the set goal;
- exchange business information in oral and written forms in the language being studied;
- to present the results of academic, scientific and professional activities at various events, including international;
- to put into practice communication technologies, methods and patterns of business communication for academic and professional interaction;
- to identify the specifics of the philosophical and scientific traditions of the main world cultures, to understand and tolerate the intercultural diversity of the society;
- analyze and consider the diversity of cultures in the process of intercultural interaction;
- to solve the tasks of personal and professional development, to determine and implement priorities for improving the own activities;
- apply methods of self-assessment and self-control; apply methodologies of improving and preserve health in the process of life.

master:

- methodology of system and critical analysis of problem situations;
- methods of setting goals, determining ways to achieve it, developing strategies for actions using foreign language oral and written speech skills;
- methods of project development and management, forecasting the results of activities using the skills of foreign language oral and written speech;
- methods of assessing the need for resources and the effectiveness of the project using the skills of foreign language oral and written speech;
- ability to analyze, design and organize interpersonal, group and organizational communications in a team to achieve a goal;
- methods of organizing and managing a team, applying the skills of intercultural interaction in the language being studied;
- methodology of interpersonal business communication in the language being studied, using professional language forms, means and modern communication technologies for academic, scientific and professional interaction;
- methods and skills of effective intercultural interaction;
- skills necessary for writing translation and editing various academic texts (abstracts, essays, reviews, articles, etc.);
- ability to determine theoretical and practical significance of the cultural and linguistic factor in the interaction of various philosophical and scientific traditions;
- technologies and skills to manage the own cognitive activity and improve it based on self-assessment, self-control and principles of self-education throughout life.

#### **4. Content of the course (training module), structured by topics (sections), indicating the number of allocated academic hours and types of training sessions**

##### 4.1. The sections of the course (training module) and the complexity of the types of training sessions

		Types of training sessions, including independent work
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№	Topic (section) of the course	Lectures	Seminars	Laboratory practical	Independent work
1	Topic 1. Artificial intelligence as science and technology		20		10
2	Topic 2. Approaches to building artificial intelligence		20		10
3	Topic 3. Key challenges and threats of the development of artificial intelligence systems		20		10
4	Topic 4. Applied fields of activity for artificial intelligence		20		10
5	Topic 5. Spheres of life and artificial intelligence: a map of the application of AI technologies		20		10
6	Topic 6. Current state and prospects of artificial intelligence development		20		10
AH in total			120		60
Exam preparation		0 AH.			
Total complexity		180 AH., credits in total 4			

#### 4.2. Content of the course (training module), structured by topics (sections)

Semester: 1 (Fall)

##### 1. Topic 1. Artificial intelligence as science and technology

The history of the term "artificial intelligence (AI)". AI science as part of the computer science complex. AI-based technologies in the computer technologies system. AI and interdisciplinary research. Two directions of AI: pure (descending) and dirty (ascending). Three waves of AI. Directions of AI.

Communicative tasks: to carry out communication in oral and written forms: to explain ethical principles; and to discuss the of AI development trends and its role in interdisciplinary research.

##### 2. Topic 2. Approaches to building artificial intelligence

Intuitive approach and Turing test. Symbolic and logical approaches. Agent approach, MAS and swarm intelligence. A hybrid approach. Strong (general) and weak (applied) AI.

Communicative tasks: to carry out communication in oral and written forms: to explain differences in approaches; to discuss the features of approaches to building AI; to analyze the development of approaches, situational cases.

##### 3. Topic 3. Key challenges and threats of the development of artificial intelligence systems

Some successful projects that implement AI capabilities. The Philosophy of Artificial Intelligence (Chinese Room). The possibility or impossibility of modeling human thinking as one of the philosophical problems in the field of AI. Concerns: complete dependence on computers, unpredictability, the use of AI for military purposes, social risks, existential risks, errors in AI systems

Communicative tasks: to carry out communication in oral and written forms: to describe the origins of artificial intelligence, the main provisions of its philosophy; to model the features of the development of artificial intelligence in the essay "How artificial intelligence will change our lives.

Semester: 2 (Spring)

#### 4. Topic 4. Applied fields of activity for artificial intelligence

Expert systems and DSS. Pattern recognition. Chatbots. Creation. Autonomous cars. Robots and avatars. The AI Effect.

Communicative tasks: to carry out communication in oral and written forms: to describe the areas of practical application of artificial intelligence; to transform scientific texts (from oral to written, from scientific and journalistic style to conversational, etc.); to translate scientific texts taking into account the professional context and genre-style affiliation.

#### 5. Topic 5. Spheres of life and artificial intelligence: a map of the application of AI technologies

Artificial intelligence and public administration. Artificial intelligence and security. Artificial intelligence and transport. Artificial intelligence and industry. Artificial intelligence and education. Artificial intelligence and science. Artificial intelligence and healthcare. Artificial intelligence and culture. Artificial intelligence and the development of new industries.

Communicative tasks: to carry out communication in oral and written forms: to discuss the use of artificial intelligence in various sectors of the economy and scientific knowledge; to give examples of the possibilities of using artificial intelligence in various branches of scientific knowledge.

#### 6. Topic 6. Current state and prospects of artificial intelligence development

Related technologies. Artificial intelligence and quantum technologies. Artificial intelligence and nanotechnology. Development of artificial neural network (INS) technologies. Processing of natural languages. Machine translation systems. Machine learning.

Communicative tasks: to carry out communication in oral and written forms: to describe related technologies; to solve situational cases; to write a business email to a foreign partner, taking into account his cultural affiliation; to negotiate with representatives of another linguistic culture.

### **5. Description of the material and technical facilities that are necessary for the implementation of the educational process of the course (training module)**

A classroom for conducting training sessions provided for by the course (training module) program, equipped with training facilities and technical means of training: an interactive smartboard (screen), a multimedia projector, sound reproducing equipment, a computer for the teacher with the possibility to connect to the Internet and provide access to the MIPT electronic information and educational environment.

### **6. List of the main and additional literature, that is necessary for the course (training module) mastering**

#### Main literature

1. Английский язык для технических направлений (B1–B2) / Н. Л. Байдинова, Е. С. Давиденко. – Москва: Юрайт, 2022.
2. Английский язык для физиков и инженеров / И. Ю. Коваленко. – Москва: Юрайт, 2022.

#### Additional literature

1. Английский язык для экономистов (A2–B2) / В. И. Уваров. – Москва: Юрайт, 2022.
2. Иностранный язык в сфере профессиональной коммуникации : комплексные учебные задания, учебное пособие / И. В. Беляева, Е. Ю. Нестеренко, Т. И. Сорогина. — Москва, Флинта, 2017.— URL: <https://e.lanbook.com/book/92749> (дата обращения: 04.02.2021). - Полный текст (Режим доступа : из сети МФТИ / Удаленный доступ)

Рекомендуемые литературные источники для самостоятельного изучения

1. Diamond-Bayir, S. (2014). *Unlock 2. Listening and Speaking Skills. Student's Book*. Cambridge University Press.
2. O'Neill, R. (2014). *Unlock 2. Reading and Writing Skills. Student's Book*. Cambridge University Press.
3. Susan C. Schneider, Jean-Louis Barsoux (2002). *Managing Across Cultures by (3rd ed.)*. London: Pearson Financial Times Prentice Hall.
4. Crane, A., Matt En, D. *Business Ethics*. Oxford university press. New York, 2010.
5. Dignen, B. (2011). *Communicating across cultures*. Cambridge University Press.
6. English, Laura M., Lynn, S. (1995). *Business across cultures. Effective communication strategies*. Longman.
7. Wallwork, A. (2014). *Meetings, Negotiations, and Socializing. A Guide to Professional English*. Springer.
8. Khan, M.A., Ebner, N. (2019). *The Palgrave Handbook of Cross-Cultural Business Negotiation*. Palgrave Macmillan.
9. Davies, R., Ikeno, O. (2002). *The Japanese mind : understanding contemporary culture*. Tuttle publishing.
10. Mingbin, Z. (2016). *Balance: the art of Chinese business*. Guangzhou - Reading: Guangdong Economy Publishing House & Paths International Ltd.
11. Bucknall, K.B. (1999). *Chinese Business Etiquette And Culture*. Boson Books.
12. Hong, Z., Wei, Y. (2006). *Experiencing Chinese: business communication in China*. London: Higher Education Press.
13. Pellatt, V. (2013). *Translating Chinese Culture: The process of Chinese-English translation*. Routledge.
14. Kam, L. (2008), *The Cambridge Companion to Modern Chinese Culture*. Cambridge University Press.
15. David, K (2014). *Translating Cultures: An Introduction for Translators, Interpreters and Mediators*. Second Edition. Routledge.
16. Chan, S.-W. (2019). *The Routledge Encyclopedia of Traditional Chinese Culture*. Routledge.
17. Shuming, L. (2005). *Fundamentals of Chinese Culture*. Amsterdam University Press.

## **7. List of web resources that are necessary for the course (training module) mastering**

1. <http://uefap.com/reading/readfram.htm> - дополнительные тексты для чтения
2. <http://uefap.com/writing/writfram.htm> - задания по развитию навыков письменной речи
3. [https://owl.purdue.edu/owl\\_exercises/esl\\_exercises/paraphrase\\_and\\_summary\\_exercises/intermediate\\_paraphrase\\_exercises.html](https://owl.purdue.edu/owl_exercises/esl_exercises/paraphrase_and_summary_exercises/intermediate_paraphrase_exercises.html) - упражнения по письменному реферированию на более высоком уровне
4. <http://ted.com> – сайт с видео-отрывками, которые магистранты смотрят в качестве домашнего задания
5. Grammarly – бесплатный онлайн-сервис на основе искусственного интеллекта для помощи в написании текстов на английском языке (<https://www.grammarly.com/>)
6. Reverso - веб-сайт, специализирующийся на автоматизированном переводе и помощи в изучении языка. Сайт предлагает онлайн-словари, перевод в контексте, проверку орфографии, поиск синонимов и средства грамматического спряжения (<https://context.reverso.net>)
7. Linguee — онлайн-словарь и система контекстуального поиска переводов, позволяющая найти, как слова и фразы переводились людьми в существующих билингвистических текстах (<https://www.linguee.ru/>)
8. Ludwig.guru - лингвистическая поисковая система, которая проверяет грамматику, синтаксис, стилистику и последовательность предложений на английском языке (<https://ludwig.guru/>)
9. Quizlet - сервис для быстрого создания тестов, которые помогут запомнить любой материал разными способами (на слух, написание и т.д.) (<https://quizlet.com/ru>)
10. Glossary maker – сервис для создания списка лексических единиц по уровню сложности, включая определения, синонимы, антонимы, производные слова и др. <https://www.wordsmyth.net/>

## **8. List of information technologies used for implementation of the educational process, including a list of software and information reference systems (if necessary)**

Practical classes are held with the use of multimedia technologies: multimedia presentations, work on an interactive smartboard, Internet information resources.

Independent work of students is conducted using a virtual learning environment system based on LMS MIPT which helps students get access to various sources of multimedia information, makes it possible to organize communication of all participants in the educational process, provides for interactive control and self-control of tasks, and testing.

To form language skills, the platform of the virtual learning environment LMS contains a set of interactive exercises created on the basis of the test module built into the LMS MIPT.

## 9. Guidelines for students to master the course

A student studying the course (training module) is to master the communicative competence, which includes: linguistic competence (the ability to correctly construct grammatical forms and syntactic constructions in accordance with the norms of the studied language), sociolinguistic competence (the ability to use and transform language forms in accordance with the situation of foreign language communication), socio-cultural competence (the ability to consider verbal and non-verbal behavior of the studied language country in communication), social competence (the ability to interact with communication partners, possession of appropriate strategies), discursive competence (the ability to understand and achieve coherence of individual statements in meaningful communicative models) strategic competence (the ability to use the most effective strategies in solving communicative tasks), object competence (knowledge of meaningful information when organizing one's own statement or understanding other people's statements), pragmatic competence (the ability to communicate and to implement any statement, taking into account the conditions under which the act of speaking (listening, writing) is carried out, the status of the addressee, the object of discussion, etc.) for the development of personal and professional qualities, awareness of the social significance of their professional activities, respect and compliance with the principles of ethics, morality, and tolerance.

Mastering of the subject takes place in practical classroom lessons and in the process of the student's independent work.

In practical classes the main attention is paid to the formation of skills in oral speech activities (speaking, listening). The formation of skills in written types of speech activities (reading, writing) is implemented both in the classroom and on the platform of the virtual learning environment LMS MIPT in conditions of self-control, mutual control and mutual testing by students, as well as remote control by the teacher.

Practical classes are conducted on the basis of a communicative approach using active/interactive forms of work:

- work in small groups;
- discussion;
- educational games (role-playing, problem role-playing, business);
- heuristic conversation;
- watching and discussing videos;
- presentations based on modern multimedia.

Successful mastering of the course (training module) syllabus as a whole and the effectiveness of each practical class directly depends on the regular independent work of the postgraduate. Tasks for independent work are to be completed by the student in full and exactly within the specified time frame. Independent work includes:

- revision and consolidation of the material covered;
- performing lexical and grammatical exercises aimed at the formation of language skills;
- reading and checking the understanding of texts;
- listening to audio recordings and watching videos, performing tasks for them;
- performing creative written tasks aimed at the formation of speech skills;
- preparation of monological and dialogical statements on the topic under study.

Instruction and in-progress assessment of independent work is carried out remotely on the platform of the virtual learning environment LMS MIPT. If there are questions or difficulties, the postgraduate can contact the teacher using the information and communication resources of the remote platform.

In-progress assessment of the course is conducted at each practical class in oral and written forms. The object of in-progress assessment is the level of language and speaking skills formation.



**Assessment funds for course (training module)**

**major:** Photonics and Optical Informatics  
**specialization:** Photonics, Quantum Technologies & 2D Materials/Фотоника, квантовые технологии и двумерные материалы  
Landau Phystech-School of Physics & Research  
Foreign Languages Department  
**term:** 1  
**qualification:** Master

Semesters, forms of interim assessment:

1 (fall) - Pass/fail exam  
2 (spring) - Grading test

**Author:** L.I. Tararina, candidate of pedagogical sciences, associate professor, associate professor

## 1. Competencies formed during the process of studying the course

Code and the name of the competence	Competency indicators
UC-1 Use a systematic approach to critically analyze a problem and develop an action plan	UC-1.1 Systematically analyze the problem situation, identify its components and the relations between them
	UC-1.2 Search for solutions by using available sources
	UC-1.3 Develop a step-by-step strategy for achieving a goal, foresee the result of each step, evaluate the overall impact on the planned activity and its participants
UC-2 Manage all stages of a research project	UC-2.1 Set an objective within a defined scientific problem; formulate the agenda, relevance, significance (scientific, practical, methodological, or other depending on the project type), forecast the expected results and possible areas of their application
	UC-2.2 Forecast the project outcomes, plan necessary steps to achieve the outcomes, chart the project schedule and monitoring plan
	UC-2.3 Organize and coordinate the work of project stakeholders, provide the team with necessary resources
	UC-2.4 Publicly present the project results (or results of its stages) via reports, articles, presentations at scientific conferences, seminars, and similar events
UC-3 Organize and manage a team and develop the team strategy to achieve the objectives	UC-3.1 Organize and coordinate the work of the project stakeholders and help resolve disputes and conflicts
	UC-3.2 Consider the interests, specific behavior, and diversity of opinions of team members/colleagues/counterparties
	UC-3.3 Foresee the results (consequences) of both individual and collective actions
	UC-3.4 Plan teamwork, distribute tasks to team members, hold discussions of different ideas and opinions
UC-4 Use modern communication tools in the academic and professional fields, including those in a foreign language	UC-4.1 Exchange business information in oral and written forms in Russian and at least one foreign language
	UC-4.2 Use the acquired skills to write, translate, and edit various academic texts (abstracts, essays, reviews, articles, etc.)
	UC-4.3 Present the results of academic and professional activities in various academic events, including international conferences
	UC-4.4 Use modern ICT tools for academic and professional collaboration
UC-5 Analyze and consider cultural diversity in intercultural interactions	UC-5.1 Identify specific philosophical and scientific traditions in major world cultures
	UC-5.2 Define the theoretical and practical significance of cultural and linguistic factors within various interrelated philosophical and scientific traditions
UC-6 Determine priorities and ways to improve performance through self-assessment	UC-6.1 Achieve personal growth and professional development, determine priorities and ways to improve performance
	UC-6.2 Evaluate performance results in correlation with the set objectives and applied methods

## 2. Competency assessment indicators

As a result of studying the course the student should:

**know:**

- methods of system and critical analysis;
- methods of developing an action strategy to identify and solve a problem situation;
- stages of the project life cycle;
- stages of project development and implementation; methods of project development and management;
- methods of forming teams;
- methods of effective team management, characteristics of communicative behavior in the process of intercultural communication;
- basic leadership theories and leadership styles;
- rules and patterns of personal and business foreign language oral and written communication;
- modern communication technologies in Russian and foreign languages, culturally determined features of communication in the process of intercultural communication;
- existing professional communities for professional interaction;
- patterns and features of socio-historical development of various cultures;
- features of the intercultural diversity of society;
- rules and technologies of effective intercultural interaction; methods of self-assessment, self-control and self-development.

**be able to:**

- apply methods of a system approach and critical analysis of problem situations;
- to search for solutions to the problem situation and develop a strategy of actions to achieve the goal, to make certain decisions for its implementation, using the skills of foreign language oral and written speech;
- to assess the impact of the decisions taken on the external environment of the planned activity and the relationships of the participants in this activity;
- to develop a project considering the analysis of alternative options for its implementation, to determine the target stages, the main directions of work;
- formulate goals and objectives, relevance, significance related to the preparation and implementation of the project, expected outcomes and possible areas of their application, using the skills of foreign language oral and written speech;
- manage the project at all stages of its life cycle;
- organize and coordinate work with due account for the diversity of the project participants' cultures;
- develop a plan of group and organizational communications during the preparation and implementation of the project;
- formulate tasks for team members to achieve the goal; develop a team strategy using the skills of foreign language oral and written speech;
- apply effective team leadership styles to achieve the set goal;
- exchange business information in oral and written forms in the language being studied;
- to present the results of academic, scientific and professional activities at various events, including international;
- to put into practice communication technologies, methods and patterns of business communication for academic and professional interaction;
- to identify the specifics of the philosophical and scientific traditions of the main world cultures, to understand and tolerate the intercultural diversity of the society;
- analyze and consider the diversity of cultures in the process of intercultural interaction;
- to solve the tasks of personal and professional development, to determine and implement priorities for improving the own activities;
- apply methods of self-assessment and self-control; apply methodologies of improving and preserve health in the process of life.

**master:**

- methodology of system and critical analysis of problem situations;
- methods of setting goals, determining ways to achieve it, developing strategies for actions using foreign language oral and written speech skills;
- methods of project development and management, forecasting the results of activities using the skills of foreign language oral and written speech;
- methods of assessing the need for resources and the effectiveness of the project using the skills of foreign language oral and written speech;
- ability to analyze, design and organize interpersonal, group and organizational communications in a team to achieve a goal;
- methods of organizing and managing a team, applying the skills of intercultural interaction in the language being studied;
- methodology of interpersonal business communication in the language being studied, using professional language forms, means and modern communication technologies for academic, scientific and professional interaction;
- methods and skills of effective intercultural interaction;
- skills necessary for writing translation and editing various academic texts (abstracts, essays, reviews, articles, etc.);
- ability to determine theoretical and practical significance of the cultural and linguistic factor in the interaction of various philosophical and scientific traditions;
- technologies and skills to manage the own cognitive activity and improve it based on self-assessment, self-control and principles of self-education throughout life.

### **3. List of typical control tasks used to evaluate knowledge and skills**

Представлено в прикрепленном файле.

### **4. Evaluation criteria**

Presented in the attached file

Assessment of knowledge, skills, abilities characterising the stages of competence formation in the discipline "English Language. Modern State of Artificial Intelligence", that is carried out in the form of current and intermediate control, carried out with the help of MIPT point-rating system (BRS).

Assessment of successful mastering of the material in the discipline is expressed in a 100-point scale and consists of the quality assessment of current work in the semester (80 points) and the rating assessment for the final credit work at the end of the semester (20 points).

### **5. Methodological materials defining the procedures for the assessment of knowledge, skills, abilities and/or experience**

The grade for the current work in the semester is given as a weighted average score based on the results of three point-rating attestations during the semester.

Current progress control is conducted during the semester to monitor the assimilation of students' knowledge, skills and level of proficiency in a foreign language to solve communicative problems in socio-cultural, academic and professional-business spheres of activity, timely identification of difficulties in mastering the discipline (module) and their elimination, as well as the provision of timely advisory individual assistance to students.

The control of current academic achievement includes testing of knowledge, skills and competences: in classes (surveys, interactive discussions, reports, presentations, role-playing games, control tasks for different types of speech activities and tests to check lexico-grammatical skills); according to the results of individual independent work (preparation of oral reports, performance of online practice tests and tasks for control and self-control of listening, reading, writing and lexico-grammatical skills in LMS MIPT.

in the course of individual consultations with students who have academic arrears.

Intermediate certification (credit/differential credit) is held in oral and written form at the end of each semester to determine the compliance of the level of competence in the discipline (module) to the requirements of the educational standard of MIPT in the direction of training in the scope of the work programme. Assessment for credit/differential credit is 20% of the total grade for the semester.

Written work at intermediate certification is conducted in the form of a test. Assessment is made by adding the points received by students for all tasks, and calculating the ratio of points to the maximum possible number of points for written work.

The oral part of the credit/differential credit/exam is taken by a teacher who does not teach in the given group. The grade is awarded on the basis of the criteria for evaluating a monologic/dialogic statement. In the final grade for the oral and written part of the test, equal weight is given to the skills in all types of speech activity: listening, reading, speaking and writing.

Intermediate certification on completion of the discipline (module) is held in the 9th semester in the form of credit and in the 10th semester in the form of differentiated credit, each of them consists of 2 parts: oral form (reading/speaking/audition/translation) and written form: written work, testing to determine the level of language competence (English), to solve communicative problems in socio-cultural, academic and professional-business spheres of activity, as well as for the development of professional and personal qualities of the student.

The final rating for the semester by mastering a discipline (module) or course of study (elective course) is a maximum of 100 points and is formed as a sum of points consisting of the following components:

Current rating (points based on the results of the current control of academic performance in the semester) - a maximum of 80 points, including:

5 % - class attendance (0 - 4 points);

15 % - academic activity at classes (0 - 12 points);

60 % - current control milestones (control points) (0 - 48 points);

20 % - fulfilment of written work for the semester (0 - 16 points), including:

10 % current practical assignment (0 - 8 points);

10 % final practical assignment (0 - 8 points).

Intermediate certification (credit, differentiated credit, examination) - 20 points, including:

50 % - for the oral part (0 - 10 points);

50% - for the written part (0 - 10 points).

The rating points, which constitute the current rating, are recorded by a pedagogical staff member of the JJD in the electronic journal. During the academic term for each discipline (module) the student must have accumulated a current rating of at least 48 rating points (60% of the maximum value of the current rating).

### **3. List of typical questions, tasks, topics used for in-progress assessment**

#### **Topic 1. Artificial intelligence as science and technology**

Classroom work: checking understanding of the content of the read text, viewed or listened to video fragment about the history of the science of artificial intelligence, followed by a conversation on the content; discussion in the form of hypotheses about what is happening in what is read or seen; problematic discussion.

Independent work on the development of communication skills, working with information resources, studying the material of practical classes, reading the main and recommended literature on the topic.

#### **Sample task for listening**

*Listen to speakers. Give the English equivalents for:*

Глобальная компьютерная сеть, искусственный интеллект, ядерная война, самый короткий путь, пакетная коммуникация, выключать, самая популярная служба Интернета, иметь доступ в Интернет, посылать электронную почту, решительное увеличение, передавать сообщение, постоянно перехватывать, зашифрованные программы, вести сделки по Интернету, цифровизация экономики.

#### **Topic 2. Approaches to building artificial intelligence**

Classroom work: checking the understanding of the content of the read text, viewed or listened to video clip about approaches and models to the construction of artificial intelligence, followed by a conversation on the content; discussion of problematic issues.

Independent work with information resources, studying the material of practical classes, reading the main and recommended literature on the topic, preparing a report on the topic.

#### **Sample task for reading**

*Read the information and discuss: what are the different types of artificial intelligence approaches?*

##### **Approaches to AI Learning**

An algorithm is a kind of container, and it provides a box for storing a method to solve a particular kind of problem. Algorithms process data through a series of well-defined states. States do not need to be deterministic, but states are defined nonetheless. The goal is to create an output that solves a problem. The algorithm receives input that helps define the output in some cases, but the focus is always on the output.

Algorithms must express transitions between states using a well-defined and formal language that the computer can understand. In processing data and solving a problem, the algorithm defines, refines, and performs a function. The function is always specific to the type of problem being addressed by the algorithm.

##### **1: Symbolic logic**

One of the ancient tribes, the Symbolists, believed that knowledge could be gained by working on symbols (signs that stand for a certain meaning or event) and drawing rules from them.

##### **2: Symbolic reasoning**

One of the earliest tribes, the symbolists, believed that knowledge could be obtained by operating on symbols (signs that stand for a certain meaning or event) and deriving rules from them.

By putting together complex rules systems, you could attain a logical deduction of the result you wanted to know; thus, the symbolists shaped their algorithms to produce rules from data. In symbolic logic, deduction expands the scope of human knowledge, while induction increases the level of human knowledge. Induction usually opens up new areas of exploration, whereas deduction explores those areas.

3: The connections are based on the neurons of the brain.

The Connectionists are perhaps the most famous of the five tribes. This tribe attempts to reproduce brain functions by using silicon instead of neurons. Essentially, each of the neurons (built as an algorithm that models the real-world counterpart) solves a small piece of the problem, and using multiple neurons in parallel solves the problem as a whole.

The goal is to keep changing the weights and biases until the actual output matches the target output. The artificial neuron fires up and transmits its solution to the next neuron in line. The solution produced by just one neuron is a part of the whole solution. Each neuron sends information to the next neuron until the neurons make up the final output. Such a method proved most effective in human-like tasks such as recognizing objects, understanding written and spoken language and interacting with humans.

4: Evolutionary algorithms that test variation

The revolutionaries relied on the principles of evolution to solve problems. In other words, this strategy is based on the existence of the fittest (removing any solutions that do not match the desired output). A fitness function determines the feasibility of each function in solving a problem. Using a tree structure, the solution method finds the best solution based on the function output. The winner of each level of development has to create tasks for the next level.

The idea is that the next level will get closer to solving the problem but may not solve it completely, which means that another level is needed. This particular tribe relies heavily on recursion and languages that strongly support recursion to solve problems. An interesting output of this strategy has been algorithms that evolve: one generation of algorithms creates the next generation.

5: Bayesian Approximation

A group of Bayesian scientists recognized that uncertainty was the dominant aspect of the view. Learning was not assured but rather occurred as a continuous update of previous assumptions that became more accurate. This notion inspired Bayesians to adopt statistical methods and, in particular, derivations from Bayes' theorem, which help you calculate probabilities in specific situations (for example, by looking at a card of a certain seed, pseudo -The starting value for a random sequence, after three other cards of the same seed are drawn from a deck).

6: Systems that learn by analogy

Analysts use kernel machines to recognize patterns in the data. By recognizing the pattern of a set of inputs and comparing it to known outputs, you can create a problem solution. The goal is to use equality to determine the best solution to a problem. It is the kind of reasoning that determines whether a particular solution was used in a particular situation at a prior time. Using that solution for similar situations should also work.

One of the most recognizable outputs of this tribe is the recommendation system. For example, when you buy a product on Amazon, the recommendation system comes up with other related products that you might want to buy.

The ultimate goal of machine learning is to combine the techniques and strategies adopted by the five tribes to form a single master algorithm that can learn anything. Of course, achieving that goal is a long way off, yet scientists like Pedro Domingos are currently working toward that goal.

### **Topic 3. Key challenges and threats of the development of artificial intelligence systems**

Classroom work: discussion of problematic issues and exchange of opinions (understanding of arguments and their evaluation); checking of understanding of what was heard/viewed, expressing hypotheses, writing a story about events preceding or following them;  
 Independent work with information resources, studying the material of practical classes, reading the main and recommended literature on the topic; creative individual /group task: compilation of associograms on concepts and events from the point of view of their own and foreign language culture, presentation in presentation format; analysis of cases of situations of intercultural communication.

### Sample task for reading

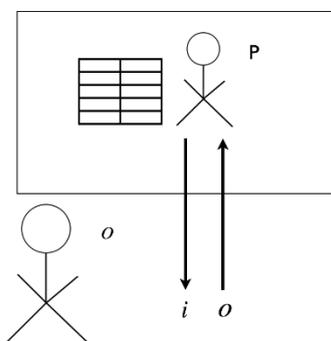
*Read the text and answer the questions*

1. What is the most famous argument in the philosophy of AI?
2. What is CRA based on?
3. Can you see the basic idea: that Searle (in the box) is supposed to be everything a computer can be, and because he doesn't understand Chinese, no computer could have such understanding. Searle is mindlessly moving squiggle-squoggles around, and (according to the argument) that's all computers do, fundamentally.

#### The Chinese Room Argument Against "Strong AI"

Without question, the most famous argument in the philosophy of AI is John Searle's (1980) Chinese Room Argument (CRA), designed to overthrow "Strong" AI. We present a quick summary here and a "report from the trenches" as to how AI practitioners regard the argument. Readers wanting to further study CRA will find an excellent next step in the entry on the Chinese Room Argument and (Bishop & Preston 2002).

CRA is based on a thought-experiment in which Searle himself stars. He is inside a room; outside the room are native Chinese speakers who don't know that Searle is inside it. Searle-in-the-box, like Searle-in-real-life, doesn't know any Chinese, but is fluent in English. The Chinese speakers send cards into the room through a slot; on these cards are written questions in Chinese. The box, courtesy of Searle's secret work therein, returns cards to the native Chinese speakers as output. Searle's output is produced by consulting a rulebook: this book is a lookup table that tells him what Chinese to produce based on what is sent in. To Searle, the Chinese is all just a bunch of – to use Searle's language – squiggle-squoggles. The following schematic picture sums up the situation. The labels should be obvious. O denotes the outside observers, in this case the Chinese speakers. Input is denoted by *i* and output by *o*. As you can see, there is an icon for the rulebook, and Searle himself is denoted by P.



### Sample task for speaking

*Discuss one of two questions. Group A, turn to Question A. Group B, turn to Question B. Consider the following questions:*

- A. What is the argument based on this thought-experiment?
- B. Where does CRA stand today?

#### **Topic 4. Applied fields of activity for artificial intelligence**

Classroom work: heuristic conversation with the statement of hypotheses about the prospects for the use of artificial intelligence; discussion of the text on applied fields of activity for artificial intelligence.

Independent work with information resources, studying the material of practical classes, reading the main and recommended literature on the topic; creative task for the communicative translation of academic text.

#### **Sample task for reading**

*Read the text and prepare a short review about the described sphere of AI application:*

#### **Bitcoin: A Peer-to-Peer Electronic Cash System**

Satoshi Nakamoto [satoshin@gmx.com](mailto:satoshin@gmx.com) [www.bitcoin.org](http://www.bitcoin.org)

Commerce on the Internet has come to rely almost exclusively on financial institutions serving as trusted third parties to process electronic payments. While the system works well enough for most transactions, it still suffers from the inherent weaknesses of the trust-based model. Completely non-reversible transactions are not really possible, since financial institutions cannot avoid mediating disputes. The cost of mediation increases transaction costs, limiting the minimum practical transaction size and cutting off the possibility for small casual transactions, and there is a broader cost in the loss of ability to make non-reversible payments for non-reversible services. With the possibility of reversal, the need for trust spreads. Merchants must be wary of their customers, hassling them for more information than they would otherwise need. A certain percentage of fraud is accepted as unavoidable. These costs and payment uncertainties can be avoided in person by using physical currency, but no mechanism exists to make payments over a communications channel without a trusted party.

What is needed is an electronic payment system based on cryptographic proof instead of trust, allowing any two willing parties to transact directly with each other without the need for a trusted third party. Transactions that are computationally impractical to reverse would protect sellers from fraud, and routine escrow mechanisms could easily be implemented to protect buyers. In this paper, we propose a solution to the double-spending problem using a peer-to-peer distributed timestamp server to generate computational proof of the chronological order of transactions. The system is secure as long as honest nodes collectively control more CPU power than any cooperating group of attacker nodes.

We have proposed a system for electronic transactions without relying on trust. We started with the usual framework of coins made from digital signatures, which provides strong control of ownership, but is incomplete without a way to prevent double-spending. To solve this, we proposed a peer-to-peer network using proof-of-work to record a public history of transactions that quickly becomes computationally impractical for an attacker to change if honest nodes control a majority of CPU power. The network is robust in its unstructured simplicity. Nodes work all at once with little coordination. They do not need to be identified, since messages are not routed to any particular place and only need to be delivered on a best effort basis. Nodes can leave and rejoin the network at will, accepting the proof-of-work chain as proof of what happened while they were gone. They vote with their CPU power, expressing their acceptance of valid blocks by working on

extending them and rejecting invalid blocks by refusing to work on them. Any needed rules and incentives can be enforced with this consensus mechanism.

### Sample task for writing

*Use the Sber.Visper service (<https://visper.tech/>) to create a video with a brief description of Artificial Intelligence Applications in 2022.*

### **Topic 5. Spheres of life and artificial intelligence: a map of the application of AI technologies**

Classroom work: oral survey, discussion of questions on the topic of the section; checking the understanding of the content of the read text about the use of artificial intelligence in various spheres of life with a discussion of examples from native and foreign cultures; watching videos discussing problematic issues; modeling communication situations.

Independent work with information resources, studying the material of practical classes, reading the main and recommended literature on the topic.

### Sample task for listening

Watch the video “Artificial Intelligence Applications. Artificial Intelligence Examples In Real Life”.

Make a list of scope of application. Get ready to share your opinion in a group. Brainstorm the ways these problems can be solved.

### **Topic 6. Current state and prospects of artificial intelligence development**

Classroom work: checking the understanding of the content of the read text (viewed or listened to a video clip) about the norms of behavior in European and Asian corporate cultures, followed by a conversation on the content; analysis of cases of international communication in business; role-playing in the format of business negotiations with foreign partners on the topic "Related technologies for the use of Artificial Intelligence".

Independent work with information resources, studying the material of practical classes, reading the main and recommended literature on the topic; writing an e-mail to a business partner, taking into account his cultural affiliation.

### Sample task for speaking

*In pairs, describe the culture of your own organization using the prompts. Think about these concepts*

Leadership Quality	Decision-making Customers	Information Cooperation	Communication	Relationships	Time
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Say which parts of the culture you like, and which you would like to change and why. Then think of other organizations which you know and describe the main differences between their cultures and that of your own organization. Which of these differences do you think could be a problem if the different organizations did business together? Why?

### Sample task for written translation

*Translate the text in a written form*

## **Weight Agnostic Neural Networks**

In biology, precocial species are those whose young already possess certain abilities from the moment of birth. There is evidence to show that lizard and snake hatchlings already possess behaviors to escape from predators. Shortly after hatching, ducks are able to swim and eat on their own, and turkeys can visually recognize predators. In contrast, when we train artificial agents to perform a task, we typically choose a neural network architecture we believe to be suitable for encoding a policy for the task, and find the weight parameters of this policy using a learning algorithm. Inspired by precocial behaviors evolved in nature, in this work, we develop neural networks with architectures that are naturally capable of performing a given task even when their weight parameters are randomly sampled. By using such neural network architectures, our agents can already perform well in their environment without the need to learn weight parameters.

Decades of neural network research have provided building blocks with strong inductive biases for various task domains. Convolutional networks are especially suited for image processing. Recent work demonstrated that even randomly-initialized CNNs can be used effectively for image processing tasks such as superresolution, inpainting and style transfer. Schmidhuber et al. have shown that a randomly-initialized LSTM with a learned linear output layer can predict time series where traditional reservoir-based RNNs fail. More recent developments in self-attention and capsule networks expand the toolkit of building blocks for creating architectures with strong inductive biases for various tasks. Fascinated by the intrinsic capabilities of randomly-initialized CNNs and LSTMs, we aim to search for *weight agnostic neural networks*, architectures with strong inductive biases that can already perform various tasks with random weights.

In order to find neural network architectures with strong inductive biases, we propose to search for architectures by deemphasizing the importance of weights. This is accomplished by (1) assigning a single shared weight parameter to every network connection and (2) evaluating the network on a wide range of this single weight parameter. In place of optimizing weights of a fixed network, we optimize instead for architectures that perform well over a wide range of weights. We demonstrate our approach can produce networks that can be expected to perform various continuous control tasks with a random weight parameter. As a proof of concept, we also apply our search method on a supervised learning domain, and find it can discover networks that, even without explicit weight training, can achieve a much higher than chance test accuracy of  $\sim 92\%$  on MNIST. We hope our demonstration of such weight agnostic neural networks will encourage further research exploring novel neural network building blocks that not only possess useful inductive biases, but can also learn using algorithms that are not necessarily limited to gradient-based methods.

### **Methodological materials defining the procedure for in-progress assessment of knowledge, skills and possessions and (or) experience**

The semester in-progress work is assessed as a weighted average of three point-rating evaluations during the semester.

The maximum grade in each of them is 100 points, including 10% for class attendance and 90% for completing tests and training tasks in class and independently on the platform of the virtual learning environment “Moodle”. The parameters of the point-rating system used to assess students’ academic performance in the Department of Foreign Languages are described in the guidelines “Current and end-term control of students’ academic performance in the Department of Foreign Languages” ([https://mipt.ru/education/chair/foreign\\_languages/control/rating.php](https://mipt.ru/education/chair/foreign_languages/control/rating.php)).

In-progress control of academic performance is conducted during the semester in order to monitor students' knowledge, skills and language proficiency for solving communication tasks in socio-cultural, academic and professional and business spheres of activity, timely identification of difficulties in mastering the course (training module) and their elimination, as well as providing timely individual advisory assistance to students.

In-progress assessment includes evaluating knowledge and skills through:

- classroom activities (questioning, interactive talks, reports, presentations, role-play, fulfilling tasks on different types of speech activities and tests to assess vocabulary and grammar skills);
  - activities based on the results of individual work (preparing oral reports, fulfilling online tests and tasks for assessment and self-assessment of listening, reading, writing, and vocabulary and grammar skills using “Moodle”);
- individual tutorial sessions with under-achievers.

#### Other forms of in-progress assessment

Academic performance is assessed on the basis of a point-rating system. Grades for attendance of classes (1 point) are rated in electronic attendance report.

Control over the assimilation of the studied grammatical phenomena is carried out using the educational electronic platform "Moodle", and the results of online exercises are considered in the rating (if all tasks are 100% completed, 10 points are set in the rating table).

#### **Criteria for evaluating in-progress assessment tasks as regards to modules**

Criteria for evaluating written speech are used when students write works of such genres as an email, argumentative text (paragraph, text of a project), summary.

Grades for tests assessing skills of using vocabulary and grammar in reading and listening are calculated as the ratio of the number of correct answers of the student to the maximum possible number of points for the test.

In-progress assessment of oral and written speech is based on evaluation criteria

#### Writing assessment criteria

##### Email evaluating criteria (Formal Letter)

Maximum number of points – 10

<b>Criteria</b>	<b>Grade points</b>
1. Statement of all the main ideas	2
2. Compliance with the email format	1
3. Considering the cultural affiliation of the addressee	2
4. Language correctness	1
5. Logical and coherent presentation	1
6. Official style of presentation	2
7. Length (120-150 words)	1
<b>Total</b>	<b>10</b>

#### Written translation assessment criteria

Maximum number of points – 20

<b>Criteria</b>	<b>Description</b>	<b>Grade points</b>
<b>Genre-style adequacy</b>	The translation does not contain genre-style distortions	4
	The translation contains one genre-style distortion	3
	The translation contains two genre-style distortions	2
	The translation contains no more than three genre-style distortions	1
	Genre and stylistically inadequate translation	0
<b>Grammar accuracy</b>	There are no grammar mistakes in the translation	4
	There are no more than two grammar mistakes that do not complicate understanding of the text	3
	There are no more than four grammar mistakes that do not complicate understanding of the text	2
	There are no more than six grammar mistakes, many of them complicate understanding of the text	1
	Numerous grammar mistakes make it difficult to understand the text	0
<b>Vocabulary</b>	There is no more than one inaccuracy in word usage, but the vocabulary is used correctly	4
	There are no more than two inaccuracies in word usage, but the vocabulary is used correctly	3
	There are no more than three inaccuracies in word usage or the vocabulary is limited	2
	There are no more than four inaccuracies in word usage, many of them complicate understanding of the text	1
	Numerous inaccuracies in word usage make it difficult to understand the text	0
<b>Semantic accuracy</b>	The content of the English text is conveyed completely, without semantic distortions in the translation	8
	The translation contains one semantic distortion	7
	The translation contains one semantic distortion and no more than one mistake that do not misconstrue the meaning	6
	The translation contains two semantic distortions	5
	The translation contains two semantic distortions no more than two mistakes that do not misconstrue the meaning	4
	The translation contains two semantic distortions no more than three mistakes that do not misconstrue the meaning	3
	Three semantic distortions and no more than three mistakes that do not misconstrue the meaning	2
	Four semantic distortions and more than three mistakes that do not misconstrue the meaning	1
	The final text is semantically unrelated to the original	0
<b>Total</b>		<b>20</b>

Oral speech proficiency is assessed in the form of solving cases, debates, role-playing, prepared monologue statements on the topics studied.

Criteria for evaluating case solutions

Maximum number of points – 10

<b>Criteria</b>	<b>Grade points</b>
1. Format of the presented solution	1
2. Validity and correctness of the presented solution	3
3. Competent and logical presentation of the solution	2
4. Ethics of discussion	2
5. Group activity	2
<b>Total</b>	<b>10</b>

### Debates and role-play assessment criteria

Maximum number of points – 20

<b>Criteria/Points</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>2</b>
<b>Cohesion and coherence</b>	All arguments are stated clearly, logically and consistently	Basically, the arguments are posed clearly, there are some violations in the structure and logic of the presentation	Significant violations in the logic and sequence of presentation, which complicate understanding	The statement is unstructured, the arguments are posed inconsistently
<b>Argumentation</b>	High level of argumentation (examples, facts, statistics, references to authoritative sources)	Good level of argumentation, with minor flaws (insufficient justification)	Average level of argumentation, insufficient vigor	Low level of argumentation (arguments do not relate to the problem under discussion) or its absence
<b>Rebuttal and defense</b>	High level of counterargument (problems and weaknesses in the opponent's position are indicated, objections are supported by arguments)	Good level of counterargument, there are minor problems in the position defense	Average level of counterargument, there are serious problems with the position defense and opponent's arguments rebuttal	Weak level of counterargument, inability to point out weaknesses in the opponent's position and defend the own point of view
<b>Speech characteristics</b>	The statement is correct in terms of vocabulary, grammar and pronunciation. The manner of presentation is very convincing	The statement is basically correct in terms of vocabulary, grammar and pronunciation. The manner of presentation is convincing	There are violations in the correctness of the statement in terms of vocabulary, grammar and pronunciation. The manner of presentation does not contribute	Serious violations in the correctness of the statement in terms of vocabulary, grammar and pronunciation, complicating understanding

			much to the vigor of arguments	The manner of presentation is unconvincing
<b>Total: maximum 20 points</b>				

Criteria for evaluating a prepared monologue statement on the studied topics  
(report, description, story)

Maximum number of points – 10

<b>Criteria</b>	<b>Description</b>	<b>Grade points</b>
<b>Grammar</b>	Poor knowledge of simple grammatical forms / does not try to use more complex constructions	0
	Limited knowledge of simple grammatical forms / does not try to use more complex constructions	1
	Good use of simple grammatical forms / poorly tries to use more complex constructions	2
	Good use of simple grammatical forms / tries to use more complex constructions	3
<b>Vocabulary</b>	Uses individual words and phrases	0
	Uses a limited vocabulary to discuss familiar situations	1
	Mainly uses the appropriate vocabulary to discuss familiar topics	2
	Uses the appropriate vocabulary to discuss a number of familiar topics	3
<b>Fluency</b>	A significant number of hesitation pauses / frequent repetition of information	0
	Gives answers that go beyond a short phrase, with some pauses / sentences mostly correspond to the subject / there are some repetitions / uses only the basic techniques of logical communication	1
	Pronounces long fragments of speech with uncertainty / mainly correctly uses a number of linkers / there is a certain number of repetitions	2
	Pronounces long fragments of speech, making hesitation pauses/ uses linkers correctly / uses few repetitions	3
<b>Pronunciation</b>	Limited phonological skills; the statement is mostly understandable	0.5
	Shows good phonetic and phonological skills at the level of words/sentences	1
<b>Total: maximum 20 points</b>		

#### 4. List of typical questions, tasks, topics used for end-of-term assessment

End-of-term assessment in the course (training module) “English Language. Modern State of Artificial Intelligence” is held at the end of each semester.

##### **Semester (B1-B2) – pass/fail exam:**

Written part: a test on the material studied.

Oral part: case analysis.

##### **Examples of typical tasks to the written and oral parts of the pass/fail exam.**

##### **Written part – a test**

##### **Match the conversational styles with their descriptions**

Indirect style	Both, sender and speaker, are involved in a specific context. The speaker does not express his intention in an explicit way but he/she expects from his/her interlocutor to understand the meaning of the message within its context direct “no” is avoided. Senders do so in order to keep up group harmony and group conformity.
Direct style	The receiver does not have to take a complex context into consideration, when decoding the message. What must be said, will be said. To say ‘no’ is normally not seen as impolite or offending, but it is even expected due to the value orientation of honesty and openness.
Elaborate style	Speakers use rich, expressive language with a large number of adjectives describing a noun, exaggerations, idiomatic expressions, proverbs and metaphors.
Exacting style	The speaker just uses those words, which describe exactly the speakers’ intention. Neither more nor less information is required to communicate a message. No additional words or paraphrases are required.
Succinct style	The speaker uses understatements, pauses and silences.
Instrumental	The speaker and listener are clearly differentiated. The speaker transmits an information, idea or opinion while the listener is the receiver of the message. The speaker tries to persuade his or her listener with arguments in the step-by-step process. Even if the listener is not ready to accept his counterpart’s opinion and maybe contradicts, the speaker will go on talking in order to achieve a change in the listener’s attitude.
Affective	The roles of speaker and listener are integrated and interdependent. The speaker is not only expected to transmit his or her message, but at the same time to be considerate about other’s feelings. The speaker is supposed to be aware of the listener’s reactions, to interpret them and finally to adjust himself or herself to his or her listener. The listener is expected to pay attention not only to what is said but also to how something is said. Both sides are supposed to use their intuition.

Personal	The sender sees every individual as equal, preferring a first-name basis and direct address. Using titles, honorifics etc. is avoided. Differences of age, status and sex are no reasons to use different language styles.
Contextual	The speaker uses honorific language heavily based on a hierarchical social order and rather role-centered which stresses formality and asymmetrical power relationships.

## Oral part – case analysis

### 1. Read the information and answer the questions

#### Scientific and Technological Progress

It's difficult to overestimate the role of science and technology in our life. They accelerate the development of civilization and help us in our co-operation with nature. Scientists investigate the laws of the universe, discover the secrets of nature, and apply their knowledge in practice improving the life of people.

Let's compare our life nowadays with the life of people at the 'beginning of the 20th century. It has changed beyond recognition. Our ancestors hadn't the slightest idea of the trivial things created by the scientific progress that we use in our everyday life. I mean refrigerators, TV sets, computers, microwave ovens, radio telephones, what not. They would seem miracle to them that made our life easy, comfortable and pleasant. On the other hand, the great inventions of the beginning of the 20th century, I mean radio, airplanes, combustion and jet engines have become usual things and we can't imagine our life without them.

A century is a long period for scientific and technological progress, as it's rather rapid. Millions of investigations, the endless number of outstanding discoveries have been made. Our century has had several names that were connected with a certain era in science and technology. At first it was called the atomic age due to the discovery of the splitting of the atom. Then it became the age of the conquest of space when for the first time in the history of mankind a man overcame the gravity and entered the Universe. And now we live in the information era when the computer network embraces the globe and connects not only the countries and space stations but a lot of people all over the world. All these things prove the power and the greatest progressive role of science in our life.

But every medal has its reverse. And the rapid scientific progress has aroused a number of problems that are a matter of our great concern. These are ecological problems, the safety of nuclear power stations, the nuclear war threat, and the responsibility of a scientist.

But still we are grateful to the outstanding men of the past and the present who have courage and patience to disclose the secrets of the Universe.

1. What accelerates the development of civilization and helps us in our cooperation with nature?
2. How has our life changed since the beginning of the 20th century?
3. What names has our century?
4. What outstanding discoveries in our century do you know?
5. What problems has the rapid scientific progress?

### 2. Give your opinion on one of the following points

- A dynamic understanding of Artificial Intelligence (AI);
- A human rights approach to AI;
- Actionable policies;
- Women for Ethical AI expert platform to advance gender equality;
- Ethics of Artificial Intelligence;
- AI code of ethics;
- Ethics of Artificial Intelligence and Robotics;
- The evolution of modern technologies and the Internet of Things as sensory organs and executive mechanisms for AI;
- Modern robots – integration of AI, Internet of Things, and other technologies.

**Semester 2 (B2-C1) – grading test:** a written test work (business letter), creative group task (negotiations).

**Examples of typical tasks to the written and oral parts of the grading test.**

### **Written part – business letter**

Read the following email from your friend Camillo Mazzotá. Write to Elio as suggested by Camillo to postpone the management circle meeting using the ideas in this unit to make sure your email is clear and received positively by Elio.

*Hi Bob,*

*We are having a lot of problems in Milan implementing a new customer service database. As a result, I'd like to cancel my participation in the European management circle meeting next week in Lisbon. I know that you are having similar problems in the UK so I was wondering if you could send an email to Elio suggesting that we postpone for two weeks. He can be very sensitive to late changes of plans because he is very structured, so as you know him quite well it's probably better you write to him, to manage the situation.*

*Many thanks in advance.*

*Camillo*

### **Oral part – negotiations**

Prepare for a negotiation. Plan in your A and B groups what you will say to get what you want.

Then, in A/B pairs, role play the negotiation. Remember to use some of the techniques you have learned.

After you have finished, review the negotiation:

Opening: was there a clear introduction to the negotiation?

Discussion: how effective were the influencing strategies?

Conclusion: how successful was the negotiation for both parties?

## Criteria for evaluating end-of-term assessment tasks

*End-of-term assessment* (pass/fail exam / grading test) is conducted in oral and written forms at the end of each semester in order to identify whether the graduate's level of competencies formed in the course (training module) corresponds to the requirements of the MIPT educational standard in the field of training within the scope of the work program. The grade for the pass/fail exam / grading test is 20% of the total grade for the semester.

Written work during the end-of-term assessment has the form of a test. The grade is set by adding up the points received by students for all tasks and calculating the ratio of the points scored to the maximum possible number of points for written work.

The oral part of the pass/fail exam / grading test is examined by a teacher who does not conduct classes in this group. The grade is based on the evaluation criteria of a monologue/dialogical statement. The final grade for the oral and written part equally includes assessment of the skills in all types of speech activity: listening, reading, speaking, writing.

End-of-term assessment upon completion of the course (training module) is carried out in the 1st semester in the form of a pass/fail exam and in the 2nd semester in the form of a grading test, each of them consists of 2 parts: oral form (reading / speaking / listening / interpretation) and written form: written work, testing to determine the level of the language competence (German language) maturity, for solving communicative tasks in the socio-cultural, academic and professional-business spheres of activity, as well as for the development of professional and personal qualities of students.

### End-of-term assessment criteria

Mark	Grade	Criteria
Excellent	10	Grade "Excellent (10)" corresponds to 96-100 points in the rating system.
	9	Grade "Excellent (9)" corresponds to 91-95 points in the rating system.
	8	Grade "Excellent (8)" corresponds to 86-90 points in the rating system.
Good	7	Grade "Good (7)" corresponds to 81-85 points in the rating system.
	6	Grade "Good (6)" corresponds to 76-80 points in the rating system.
	5	Grade "Good (5)" corresponds to 71-75 points in the rating system.
Satisfactory	4	Grade "Satisfactory (4)" corresponds to 66-70 points in the rating system.
	3	Grade "Satisfactory (3)" corresponds to 60-65 points in the rating system.
Unsatisfactory	2	Grade "Unsatisfactory (2)" corresponds to 48-59 points in the rating system.
Unsatisfactory	1	Grade "Unsatisfactory (1)" corresponds to 0-47 points in the rating system.

Maximum number of points – 10

<b>Criterion</b>	<b>Grade points</b>
Format of the presented solution	1
Validity and correctness of the presented solution	3
Competent and logical presentation of the solution	2
Ethics of discussion	2
Group activity	2
<b>Total</b>	<b>10</b>

Criteria for evaluating a business letter (Formal Letter)

Maximum number of points – 10

<b>Criterion</b>	<b>Grade points</b>
Presentation of all the main ideas	2
Compliance with the email format	1
Considering the cultural affiliation of the addressee	2
Language correctness	1
Logical and coherent presentation	1
Official style of presentation	2
Volume (120-150 words)	1
<b>Total</b>	<b>10</b>

Criteria for evaluating negotiations (International negotiations)

Maximum number of points – 20

<b>Criterion</b>	<b>Grade points</b>
Theoretical level of knowledge	3
Quantity and quality of ideas put forward	2
Argumentation of the ideas put forward (reinforcement of materials with factual and statistical data)	3
The ability to listen to opponents and conduct a discussion	2
Oratorical skills (clarity, coherence, focus, etc.)	2
The ability to defend one's own point of view using effective negotiation strategies	4
Speech literacy	1
The degree of participation in the general discussion, contribution to the work of the team	3
<b>Total</b>	<b>20</b>