

**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 in the Field of Artificial Intelligence Technologies/Английский язык в области технологий искусственного интеллекта

**major:** Applied Mathematics and Informatics

**specialization:** Advanced Methods of Modern Combinatorics/Продвинутые методы современной комбинаторики  
Phystech School of Applied Mathematics and Informatics  
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

Authors of the program:

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E.N. Vikhrova, candidate of philological sciences, associate professor

A. Bierler-Khankott, senior methodologist

The program was discussed at the Foreign Languages Department 28.02.2025

## **Annotation**

The course (training module) "English in the Field of Artificial Intelligence Technologies/Английский язык в области технологий искусственного интеллекта" is designed for students in master's programs improving intercultural communication skills in English. Duration of mastering the course (training module) is 1 year, 4 AH per week.

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 Framework).

### **1. Study objective**

#### **Purpose of the course**

Development of listening, speaking, reading and writing skills on the basis of language material from the spheres including 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.

To achieve the goals and objectives of studying the course, students are to master a foreign language general professional communicative competence, including:

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.

Sociocultural 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.

Object competence: knowledge of meaningful information when organizing one's own statement or understanding other people's statements.

Pragmatic competence: the ability to choose the most effective and expedient way of expressing thoughts, depending on the conditions of the communicative act and the task set.

### **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 Able to manage a project through all stages of its life cycle	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 Able to organise and lead a team, developing a team strategy to achieve a goal	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 field, 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 at 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:

- basic concepts, technologies and terminology of artificial intelligence;
  - principles of business and academic communication in oral and written form, including the use of modern digital tools;
  - basic standards of writing and editing academic and professional texts in native and foreign languages;
  - modern information and communication technologies (ICT) used for interaction in academic and professional environments;
- the impact of AI on the development of different cultural traditions and scientific schools;
- specifics of AI application in different countries and cultures, including ethical and legal aspects;
  - theoretical and practical significance of the cultural and linguistic factor in the development and application of AI;
  - the main world philosophical and scientific traditions and their influence on the development of artificial intelligence;
  - main directions of AI development and requirements for specialists in this field;
  - methods and tools for self-assessment and professional development;
  - modern educational technologies, platforms and tools for continuous learning in the field of AI;
  - trends in the AI labour market and related competences.

be able to:

- to communicate orally and in writing on the subject of AI in the state and foreign languages;
- competently present research results, design academic texts, translate and edit materials;
- present scientific and professional developments on AI at conferences, symposia and other academic events;
- use modern digital technologies, platforms and tools for collaborative work and publication of scientific data;
- identify and analyse the characteristics of philosophical and scientific traditions of different cultures in the context of AI;
- identify the role and significance of cultural and linguistic factors in the development and implementation of AI technologies;
- assess the impact of AI on global and local social processes;
- form reasoned conclusions about intercultural differences in the perception and application of AI;
- develop an individual trajectory of professional development in the field of AI;
- assess their knowledge and skills, identify growth areas and formulate learning plans;
- analyse and adapt modern AI technologies to solve professional tasks;
- adjust their activities on the basis of self-analysis and the results obtained.

master:

- skills of oral and written communication in scientific and professional spheres;
- methods of writing, editing and translating scientific and technical texts related to AI;
- tools for creating presentations, reports and publications on AI topics;
- modern means of communication and collaboration, including online platforms, databases and digital journals;
- cross-cultural collaboration skills when working with international AI teams;
- how to analyse and adapt AI technologies in different cultural contexts;
- methods of assessing ethical aspects of AI application in cross-cultural environments;
- communication tools for effective intercultural interaction in scientific and professional spheres;
- skills of self-organisation and setting professional goals;
- methods of assessing the efficiency of one's activity and ways to improve it;
- tools for professional self-development and career management in the field of AI;
- digital educational resources and technologies for professional development.

#### **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**

№	Topic (section) of the course	Types of training sessions, including independent work			
		Lectures	Seminars	Laboratory	Independent

		Lectures	Seminars	practical	work
1	Topic 1. Basics of Artificial Intelligence		20		10
2	Topic 2. Applications of Artificial Intelligence		20		10
3	Topic 3. Ethics of Artificial Intelligence		20		10
4	Topic 4. Future of Artificial Intelligence		60		30
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. Basics of Artificial Intelligence

The concept, essence and philosophy of AI. History of creation and development of AI. Classification and technologies of AI. Prompt engineering. Creation of effective prompts. Multi-agent AI systems and their application. Modern approaches to AI development.

Communicative tasks: to carry out communication in oral and written forms:

explain the basic concepts of AI and its differences from traditional computer systems, discuss philosophical questions about consciousness and rationality of AI, arguments for and against the idea of self-aware AI, describe the impact of AI on human identity and society, talk about the key stages of AI development from the first ideas to the present day, explain the reasons for ups and downs in the history of AI, compare early approaches to AI with modern methods, discuss the contribution of key scientists to the development of AI, compare different types of AI in terms of capabilities and limitations, explain the principles of creating effective prompts, create prompts to solve different types of problems, analyse the impact of prompt formulation on the quality of the AI response, explain the concept of multi-agent systems and how they differ from single AI, describe how agents interact in multi-agent systems, discuss the problems of scalability and conflicts of interest in such systems, explain the main directions of AI development, discuss the prospects and limitations of modern AI technologies, compare different approaches to AI development, discuss the inter-agent and multi-agent approaches to the development of AI, and discuss the role of AI in the development of AI.

#### 2. Topic 2. Applications of Artificial Intelligence

Application of AI in various fields of science: computer science, machine learning, physics, mathematics, biology and chemistry, medicine, astronomy, space research. AI in healthcare, banking and finance, education, services.

Communicative tasks: to carry out communication in oral and written forms: describe the application of AI in various fields of science including computer science, machine learning, physics, mathematics, biology, chemistry, medicine, astronomy and space research, discuss the impact of AI on research automation and data processing, discuss the potential and limitations of AI in various scientific disciplines, explain the role of AI in healthcare by describing its application in diagnosis, disease prediction and drug development, analyse the effectiveness of AI in improving the quality of healthcare, explain the mechanism of the work of AI in banking and finance, comparing its impact on risk management, fraud detection and automation of investment strategies, analyse the prospects for the use of AI in auditing and combating financial crime, discuss the application of AI in education, explaining its role in personalised learning and improving the efficiency of administrative processes, compare traditional language learning methods with AI technologies, explain the principles of AI in the service industry, analysing its impact on recruitment, customer service automation and tourism development, discuss the impact of AI on the transport and hospitality industry, evaluating its effectiveness in optimising logistics and personalised services.

### 3. Topic 3. Ethics of Artificial Intelligence

Ethical principles for the use of AI. Content generation and associated risks. AI as a creative tool in music, painting and literature. Co-creation between humans and AI. Ethics of AI use in creative industries, the future of creative professions in the age of artificial intelligence. AI as a virtual interlocutor, emotional attachment to AI and its psychological aspects. The use of AI companions in social life. The influence of AI on the formation of new models of communication and interaction.

Communicative tasks: to carry out communication in oral and written forms: explain the ethical principles of using AI and their impact on decision-making, discuss the moral dilemmas associated with autonomous AI systems and their role in society, discuss the risks associated with generating content using AI, including issues of authenticity, authorship and possible manipulation of information, describe the impact of AI on the creative process in music, painting and literature, comparing it with traditional methods of creativity, explain the principles of human and AI co-creation, exploring the limits of authorship and originality, analyse the ethical aspects of the use of AI in the creative industries, including copyright and cultural heritage issues, discuss the future of creative professions in the AI era and possible scenarios for their transformation, explain the principles of AI as a virtual interlocutor and its role in communication, discuss the psychological aspects of emotional attachment to AI and its implications for interpersonal relationships, describe the use of AI companions in social life and their impact on loneliness, mental health and social adaptability, describe the impact of AI in shaping new patterns of communication and interaction, including issues of digital identity and changing social norms.

Semester: 2 (Spring)

### 4. Topic 4. Future of Artificial Intelligence

Future trends in the use of AI. The future of AI in everyday life: applications and impact. The future of AI in education and healthcare. The future of human-AI interaction. Global automation using AI and its impact on the labour market.

Communicative tasks: to carry out communication in oral and written forms: describe the key future trends in the use of AI, analysing their impact on different areas of life, discuss the prospects for the development of AI in everyday life, considering its application in smart homes, digital assistants and personalised services, describe the impact of AI on education, assessing its role in adaptive learning, virtual classrooms and automated knowledge assessment, explain the future of AI in healthcare by exploring its potential in diagnosis, personalised medicine and disease prediction, describe human-AI interaction in the future by comparing the concepts of augmented intelligence and full automation, discuss the ethical and psychological aspects of emotional attachment to AI and its role in social life, and describe the impact of AI on the labour market, comparing the level of automation in different industries and predicting the emergence of new professions, explain the mechanisms of retraining and adaptation of the workforce to the conditions of global automation, describe the economic consequences of the introduction of AI and its impact on the development of the labour market, compare different AI regulatory strategies aimed at minimising social and economic risks.

## 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 classes provided for by the program of the discipline (module), equipped with equipment and technical teaching aids: tables and chairs for students and the teacher; interactive whiteboard (screen); multimedia projector; sound-reproducing equipment; a computer for the teacher, as well as laptops for students (if necessary) with the ability to connect to the Internet and provide access to the electronic information and educational environment of MIPT.

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

Main literature

1. Английский язык для естественно-научных направлений / Л. В. Полубиченко, Е. Э. Кожарская, Н. Л. Моргун, Л. Н. Шевырдяева. – Москва: Юрайт, 2022.
2. Английский язык для физиков и инженеров / И. Ю. Коваленко. – Москва: Юрайт, 2022.

3. Английский язык в международном бизнесе / Л. В. Ступникова. – Москва: Юрайт, 2022.
4. Английский язык для технических направлений (B1–B2) / Н. Л. Байдикова, Е. С. Давиденко. – Москва: Юрайт, 2022.

#### Additional literature

1. 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)
2. Английский язык для диалога с компьютером [Текст] : учеб. пособие для вузов / Т. Ю. Полякова .— М. : Высшая школа, 1997 .— 190 с.

#### Рекомендуемая дополнительная литература:

1. Stuart Jonathan Russell, Stuart Russell, Peter Norvig, Artificial Intelligence: A Modern Approach. Pearson Education, 2020.
2. The economics of artificial intelligence. McKinsey, 2018.  
<https://www.mckinsey.com/business-functions/mckinsey-analytics/our-insights/the-economics-of-artificial-intelligence>
3. Alexander Osterwalder, Yves Pigneur, Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers. Wiley, 2013.
4. Stuart Jonathan Russell, Stuart Russell, Peter Norvig, Artificial Intelligence: A Modern Approach. Pearson Education, 2020.

#### Рекомендуемые литературные источники для самостоятельного изучения

1. Topol E. J. High-performance medicine: the convergence of human and artificial intelligence // Nature Medicine. — 2019. — Vol. 25, № 1. — P. 44–56. DOI: [10.1038/s41591-018-0300-7] (<https://doi.org/10.1038/s41591-018-0300-7>)
2. Silver D. et al. Mastering the game of Go without human knowledge // Nature. — 2018. — Vol. 550. — P. 354–359. DOI: [10.1038/nature24270] (<https://doi.org/10.1038/nature24270>)
3. Jumper J. et al. Highly accurate protein structure prediction with AlphaFold // Nature. — 2021. — Vol. 596. — P. 583–589. DOI: [10.1038/s41586-021-03819-2] (<https://doi.org/10.1038/s41586-021-03819-2>)
4. Hutson M. Artificial intelligence faces reproducibility crisis // Science. — 2018. — Vol. 359, № 6377. — P. 725–726. DOI: [10.1126/science.359.6377.725] (<https://doi.org/10.1126/science.359.6377.725>)
5. LeCun Y., Bengio Y., Hinton G. Deep learning // Nature. — 2018. — Vol. 521. — P. 436–444. DOI: [10.1038/nature14539] (<https://doi.org/10.1038/nature14539>)
6. Gil Y. et al. Artificial intelligence for scientific discovery // AAAI Conference on Artificial Intelligence. — 2022. — P. 12237–12243. URL: [<https://ojs.aaai.org/index.php/AAAI/article/view/21453>] (<https://ojs.aaai.org/index.php/AAAI/article/view/21453>)
7. Carleo G. et al. Machine learning and the physical sciences // Reviews of Modern Physics. — 2019. — Vol. 91, № 4. — P. 045002. DOI: [10.1103/RevModPhys.91.045002] (<https://doi.org/10.1103/RevModPhys.91.045002>)
8. Esteva A. et al. A guide to deep learning in healthcare // Nature Medicine. — 2019. — Vol. 25, № 1. — P. 24–29. DOI: [10.1038/s41591-018-0316-z] (<https://doi.org/10.1038/s41591-018-0316-z>)
9. Schmidt M., Lipson H. Distilling free-form natural laws from experimental data // Science. — 2019. — Vol. 324, № 5923. — P. 81–85. DOI: [10.1126/science.1165893] (<https://doi.org/10.1126/science.1165893>)
10. Raccuglia P. et al. Machine-learning-assisted materials discovery using failed experiments // Nature. — 2018. — Vol. 533. — P. 73–76. DOI: [10.1038/nature17439] (<https://doi.org/10.1038/nature17439>)
11. Ching T. et al. Opportunities and obstacles for deep learning in biology and medicine // Journal of The Royal Society Interface. — 2022. — Vol. 19, № 187. — P. 20210532. DOI: [10.1098/rsif.2021.0532] (<https://doi.org/10.1098/rsif.2021.0532>)
12. Coley C. W. et al. A robotic platform for flow synthesis of organic compounds informed by AI planning // Science. — 2021. — Vol. 365, № 6453. — P. 557–565. DOI: [10.1126/science.aax1566] (<https://doi.org/10.1126/science.aax1566>)
13. Vaswani A. et al. Attention is all you need // Advances in Neural Information Processing Systems. — 2020. — Vol. 30. — P. 5998–6008. URL: [<https://proceedings.neurips.cc/paper/2017/file/3f5ee243547dee91fbd053c1c4a845aa-Paper.pdf>] (<https://proceedings.neurips.cc/paper/2017/file/3f5ee243547dee91fbd053c1c4a845aa-Paper.pdf>)
14. Altae-Tran H. et al. Low-data drug discovery with one-shot learning // ACS Central Science. — 2021. — Vol. 7, № 3. — P. 399–406. DOI: [10.1021/acscentsci.0c01318] (<https://doi.org/10.1021/acscentsci.0c01318>)
15. Bommasani R. et al. On the opportunities and risks of foundation models // arXiv. — 2022. — 2108.07258. URL: [<https://arxiv.org/abs/2108.07258>] (<https://arxiv.org/abs/2108.07258>)
16. Senior A. W. et al. Improved protein structure prediction using potentials from deep learning // Nature. — 2020. — Vol. 577. — P. 706–710. DOI: [10.1038/s41586-019-1923-5] (<https://doi.org/10.1038/s41586-019-1923-5>)
17. Hassabis D. et al. Artificial intelligence in neuroscience // Neuron. — 2022. — Vol. 110, № 15. — P. 2218–2232. DOI: [10.1016/j.neuron.2022.05.018] (<https://doi.org/10.1016/j.neuron.2022.05.018>)
18. Zhang L. et al. Artificial intelligence for weather forecasting // Nature Reviews Earth &



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

1. lms.mipt.ru – виртуальная обучающая среда LMS МФТИ для обеспечения образовательного процесса с применением электронного обучения (далее – ЭО) и дистанционных образовательных технологий (далее – ДОТ).
2. <http://uefap.com/reading/readfram.htm> – additional texts for reading
3. <http://uefap.com/writing/writfram.htm> – tasks for the development of writing skills
4. [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) – exercises on written reviewing at a higher level
5. <http://ted.com> – a website with video excerpts that Master Degree students watch as homework
6. Grammarly – free online service based on artificial intelligence to help in writing texts in English (<https://www.grammarly.com/>).
7. Reverso – a website specializing in automated translation and language learning assistance. The site offers online dictionaries, context translation, spell checking, synonym search and grammatical conjugation tools (<https://context.reverso.net>).
8. Linguee – an online dictionary and contextual translation search system that allows you to find how words and phrases were translated by people in existing bilingual texts (<https://www.linguee.ru/>).
8. Ludwig.guru – a linguistic search engine that checks grammar, syntax, style and sequence of sentences in English (<https://ludwig.guru/>).
10. Quizlet – a service for quickly creating tests that will help you remember any material in different ways (by ear, writing, etc.) (<https://quizlet.com/ru>).
11. Glossary maker – a service for creating a list of lexical units according to level of complexity, including definitions, synonyms, antonyms, derived words, etc. <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)**

Multimedia technologies are used in practical classes: multimedia presentations, work on the interactive whiteboard, use of Internet information resources.

Independent work of students is carried out using a virtual learning environment based on LMS Moodle (<http://moodle.phystech.edu>), through which students are given access to various sources of multimedia information, organized communication of all participants of the educational process, interactive control and self-control of tasks, testing.

## **9. Guidelines for students to master the course**

The student, mastering the discipline (module) "English Language. Combinatorics" must master the intercultural 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), sociocultural competence (the ability to take into account in communication speech and non-speech behavior adopted in the country of the studied language), sociolinguistic competence (ability to use and transform language forms in accordance with the situation of foreign language communication), sociocultural competence (ability to take into account in communication the speech and non-speech behavior adopted in the country of the studied language), social competence (ability to interact with communication partners, possession of appropriate strategies), discursive competence (ability to understand and achieve coherence of individual statements in meaningful communicative patterns), strategic competence (ability to understand and achieve coherence of individual statements in meaningful communicative patterns), strategic competence (ability to understand and achieve coherence of individual statements in meaningful communicative patterns). discursive competence (the ability to understand and achieve coherence of individual utterances in meaningful communicative patterns), strategic competence (the ability to use the most effective strategies in solving communicative tasks), subject matter competence (knowledge of subject matter information when organizing one's own utterance or understanding the utterances of others), pragmatic competence (the ability to communicate and the ability to implement any utterance taking into account the conditions under which the act of speaking (listening, writing, writing, etc.) is carried out.

The mastering of the discipline takes place in practical classes and in the independent work of the student. In practical classes the main attention is paid to the formation of skills of receptive and productive types of speech activity, which are realized both in the classroom and on the platform of virtual learning environment "Moodle" in the conditions of self-control, peer control and peer assessment by students, as well as remote control by the teacher.

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

- work in small groups;
- discussion and debate;
- educational games (role-playing, problematic role-playing, business, etc.);
- heuristic conversation on the content of the text read or listened to, the video material watched;
- discussion of issues and exchange of opinions;
- practicing skimming of texts, checking understanding of the content and meaning of the text watched;
- viewing and discussing video material;
- presentations based on modern multimedia tools.

Successful mastery of the discipline (module) program as a whole and the effectiveness of each practical lesson directly depend on the regular independent work of the student. Assignments for independent work must be completed by the student in full and exactly within the specified time frame.

Independent work includes:

- repetition and consolidation of the material covered;
- completion of lexical and grammatical exercises aimed at developing language skills;
- reading and checking understanding of texts;
- listening to audio recordings and watching video materials, completing assignments for them;
- completion of creative written assignments aimed at developing speech skills;
- home reading, note-taking, translation into Russian;
- preparation of monologues and dialogic statements on the topic under study. If questions or difficulties arise related to mastering the content of a discipline (module), the student can contact the teacher using MIPT information and communication resources (corporate mail, chat and other components of the telecommunications environment).

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

**major:** Applied Mathematics and Informatics  
**specialization:** Advanced Methods of Modern Combinatorics/Продвинутые методы современной комбинаторики  
Phystech School of Applied Mathematics and Informatics  
Foreign Languages Department  
**term:** 1  
**qualification:** Master

Semesters, forms of interim assessment:

1 (fall) - Pass/fail exam

2 (spring) - Grading test

**Authors:**

E.V. Usachev, senior professor

E.N. Vikhrova, candidate of philological sciences, associate professor

A. Bierler-Khankott, senior methodologist

## 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 Able to manage a project through all stages of its life cycle	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 Able to organise and lead a team, developing a team strategy to achieve a goal	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 field, 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 at 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:**

- basic concepts, technologies and terminology of artificial intelligence;
  - principles of business and academic communication in oral and written form, including the use of modern digital tools;
  - basic standards of writing and editing academic and professional texts in native and foreign languages;
  - modern information and communication technologies (ICT) used for interaction in academic and professional environments;
- the impact of AI on the development of different cultural traditions and scientific schools;
- specifics of AI application in different countries and cultures, including ethical and legal aspects;
  - theoretical and practical significance of the cultural and linguistic factor in the development and application of AI;
  - the main world philosophical and scientific traditions and their influence on the development of artificial intelligence;
  - main directions of AI development and requirements for specialists in this field;
  - methods and tools for self-assessment and professional development;
  - modern educational technologies, platforms and tools for continuous learning in the field of AI;
  - trends in the AI labour market and related competences.

**be able to:**

- to communicate orally and in writing on the subject of AI in the state and foreign languages;
- competently present research results, design academic texts, translate and edit materials;
- present scientific and professional developments on AI at conferences, symposia and other academic events;
- use modern digital technologies, platforms and tools for collaborative work and publication of scientific data;
- identify and analyse the characteristics of philosophical and scientific traditions of different cultures in the context of AI;
- identify the role and significance of cultural and linguistic factors in the development and implementation of AI technologies;
- assess the impact of AI on global and local social processes;
- form reasoned conclusions about intercultural differences in the perception and application of AI;
- develop an individual trajectory of professional development in the field of AI;
- assess their knowledge and skills, identify growth areas and formulate learning plans;
- analyse and adapt modern AI technologies to solve professional tasks;
- adjust their activities on the basis of self-analysis and the results obtained.

**master:**

- skills of oral and written communication in scientific and professional spheres;
- methods of writing, editing and translating scientific and technical texts related to AI;
- tools for creating presentations, reports and publications on AI topics;
- modern means of communication and collaboration, including online platforms, databases and digital journals;
- cross-cultural collaboration skills when working with international AI teams;
- how to analyse and adapt AI technologies in different cultural contexts;
- methods of assessing ethical aspects of AI application in cross-cultural environments;
- communication tools for effective intercultural interaction in scientific and professional spheres;
- skills of self-organisation and setting professional goals;
- methods of assessing the efficiency of one's activity and ways to improve it;
- tools for professional self-development and career management in the field of AI;
- digital educational resources and technologies for professional development.

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

The list of typical control tasks is provided in the attached file.

Methodological recommendations defining the procedure for assessing knowledge, skills and proficiency and (or) experience of current monitoring of academic performance in the discipline

The assessment of knowledge, skills and proficiency, characterizing the stages of formation of competencies in the discipline of a foreign language, is comprehensive and is carried out in the form of current and midterm monitoring of students' academic performance, carried out using the MIPT point-rating system (BRS). The assessment of the success of mastering a discipline (module) is expressed in a 100-point scale of the MIPT BRS, as the total points that the student scores based on the results of current monitoring of academic performance and midterm assessment in the semester (final rating).

Current monitoring of academic performance is carried out during the semester in order to monitor the acquisition of knowledge, skills and level of proficiency in a foreign language by students to solve communicative problems in the socio-cultural, academic and professional-business spheres of activity, timely identification of difficulties in mastering the discipline (module) and their elimination, as well as providing timely individual advisory assistance to students.

The indicator of current monitoring of academic performance is the completion of all types of academic work provided for by the working program of the discipline (module), including the student's classroom work, attendance of practical (seminar) classes and academic activity in foreign language classes.

The types, forms, assessment criteria, frequency and procedure for conducting current monitoring of students' academic performance (hereinafter referred to as control points) are determined independently in accordance with the set tasks and the specifics of the implemented working program of the discipline (module).

Monitoring current academic performance includes checking knowledge, skills and abilities:

- in classes (surveys, interactive conversations, reports, presentations, role-playing games, completing control tasks on various types of speech activity and tests to check lexical and grammatical skills);
- based on the results of individual independent work (preparation of oral reports, completion of online training tests and assignments for monitoring and self-monitoring of listening, reading, writing and lexical and grammatical skills in the MIPT LMS.
- during individual consultations with students who have academic debts.

To organize current monitoring of academic achievements within an academic discipline (module), checkpoints are determined that are optimally located in the time interval for studying the discipline (module) (Learning Outcomes Monitoring Plan) and are communicated to students: for the first year in the second week of the academic semester, in other cases - in the first lesson of the semester, and are also posted on the educational platform in the MIPT LMS.

No more than 7 calendar days are allocated for checking written work as part of the current monitoring of academic performance in the semester. The teacher leading the discipline (module) is obliged to promptly inform students about the results of passing each checkpoint, about academic achievements at different stages of mastering the discipline (module) and make timely results of assessment activities (including for written assignments) in the electronic journal so that students can see grades on the MIPT LMS platform in a timely manner.

If a student falls behind the schedule of current assessment activities (failure to complete all control points provided for by the program and failure to submit individual assignments, etc.) for the discipline (module) being studied, this results in the formation of a current debt.

The grade for current work in the semester is determined in total at the end of the semester based on the intermediate rating points received by the student in the semester, taking into account their overall workload, and is set as a weighted average grade.

The points that make up the current rating are recorded by the teaching staff in the MIPT LMS electronic journal. When calculating rating points in the MIPT LMS, the rounding rule to an integer is applied.

## Academic Honesty and Plagiarism

**Plagiarism:** Plagiarism is the theft of someone else's ideas and work. It is the incorporation of facts, ideas, or specific language which are not common knowledge, are taken from another source, and are not properly cited. In submitting any work, whether on paper or electronically, you agree to abide by the MIPT's regulations on plagiarism. You also undertake that the work is all your own, that you have properly acknowledged and cited all materials used from the published or unpublished works of others, and that the work has not previously been submitted for any other of your courses. You also agree, in submitting the work, that MIPT may take steps to authenticate the material submitted, including (but not limited to) submitting the work to a plagiarism checking service and copying the work to another member or members of staff.

**Using ChatGPT and other Generative AI tools:** In this course, generative AI is permitted in specific contexts and with acknowledgment. The Department of Foreign Languages supports responsible experimentation with generative AI tools, such as OpenAI's ChatGPT and/or others, but there are important considerations to keep in mind when using these tools, including information security and data privacy, compliance, copyright, and academic integrity. You must give credit to AI tools whenever they are used, even if it is simply to create ideas rather than usable text or illustrations. When using AI tools on assignments, you should add an appendix showing

- a) the entire exchange, highlighting the most relevant sections;
- b) a description of precisely which AI tools were used (e.g. ChatGPT or other);
- c) an explanation of how the AI tools were used (e.g. to generate ideas, turns of phrase, elements of text, long stretches of text, lines of argument, pieces of evidence, illustrations of key concepts, etc.);
- d) an account of why AI tools were used (e.g. to save time, to overcome writer's block, to stimulate thinking, to handle mounting stress, to clarify prose, to translate text, etc.).

**Research, Fabrication and Falsification:** Students are expected to be honest and accurate in all work submitted, whether it involves scientific research or writing articles in journalism courses, or any other course. Fabrication is the intentional act of making up data, results, or quotes, and includes falsely citing sources or citing sources never utilized. Falsification is the manipulation of research including the distortion or omission of important data or results. Like plagiarism, fabrication and falsification are serious violations of academic integrity that are subject to review by the Administrative Board for disciplinary action.

#### Course Policies and Expectations

Class attendance and participation points are given to encourage your active class participation and discussion. You will be rewarded with an extra score as long as you frequently come to class and actively contribute to the class discussions.

#### Attendance

Your consistent attendance is essential. If you are absent without medical excuse more than once, your total course grade will be lowered. On your first unexcused absence, you will receive a letter from your course instructor warning you of your situation. Three late arrivals in class of more than 15 minutes will count as an absence. If you must miss a class, please let your course instructor know in advance, and know that your assigned work is still due on time. Please get in touch with a classmate to learn what was covered.

### 4. Evaluation criteria

A list of typical (approximate) questions and tasks is in the attached file.

Assessment of the success of students in mastering the material on the subject (knowledge, skills, proficiency) characterizing the stages of formation of competencies is carried out in the form of current and intermediate control, carried out using the point-rating system (PRS) of MIPT and is expressed in a 100-point scale (Score/Points):

Excellent:

The grade "excellent (10)" is given to a student who received 96-100 points in the point-rating system of assessment.

The grade "excellent (9)" is given to a student who received 91-95 points in the point-rating system of assessment.

The grade "excellent (8)" is given to a student who received 86-90 points in the point-rating system of assessment.

Good:

The grade "good (7)" is given to a student who received 81-85 points in the point-rating system.

The grade "good (6)" is given to a student who received 76-80 points in the point-rating system.

The grade "good (5)" is given to a student who received 71-75 points in the point-rating system.

Satisfactory:

The grade "satisfactory (4)" is given to a student who received 66-70 points in the point-rating system.

The grade "satisfactory (3)" is given to a student who received 60-65 points in the point-rating system.

Unsatisfactory:

The grade "unsatisfactory (2)" is given to a student who received 48-59 points in the point-rating system.

The grade "unsatisfactory (1)" is given to a student who received 0-47 points in the point-rating system.

The criteria for assessing knowledge, skills and abilities and (or) work experience are presented in the attached file.

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

Промежуточная аттестация по завершению освоения дисциплины проводится в 1 семестре (осенний) в форме зачета и во 2 семестре (весенний) в форме дифференцированного зачета. Каждый из них состоит из 2 частей: устная и письменная.

Промежуточная аттестация в форме зачета осуществляется в период зачетной недели.

Midterm assessment upon completion of the course is conducted in the 1st semester (fall) in the form of a credit and in the 2nd semester (spring) in the form of a differentiated credit. Each of them consists of 2 parts: oral and written.

Interim assessment in the form of a test is carried out during the test week. Each part of the test (oral and written) is allocated 10 points in the rating.

Out of 10 points for the oral part of the test:

0-5 points are formed based on the results of students' participation in all types of oral speech activities during classes and are entered into the LMS MIPT electronic journal automatically as a total score at the end of the fall semester;

The student receives 0-5 points during the test week during the midterm assessment.

The written part of the midterm assessment in the form of credit is completed through independent testing ISTOK, conducted by DIYA in the last academic week of the semester and assessed from 0 (zero) to 10 points (clause 2.2 of the Regulation on testing in the Department of Foreign Languages, in the current version).

Interim assessment in the form of an exam is carried out during the examination week and includes an oral and written part.

Each part (oral and written) is worth 5 points.

All students are admitted to the oral part of the differentiated test, regardless of the number of points received for the written part.

The final rating for the semester when mastering a discipline is a maximum of 100 points and is formed as a sum of points consisting of the following components:



Fall semester (credit):

The current rating (points based on the results of current monitoring of academic performance in the semester) is a maximum of 80 points, including:

- 4 points - class attendance;
- 12 points - academic activity in classes;
- 48 points - current control milestones (checkpoints);
- 16 points - completion of mandatory written work for the semester.

The maximum number of points for midterm assessment is 20 points, including:

- 10 points for the oral part;
- 10 points for the written part.

Spring semester (differentiated credit).

Current rating (points based on the results of the current monitoring of academic performance in the semester) - maximum 90 points, including:

- 4 points - class attendance;
- 12 points - academic activity in classes;
- 48 points - current monitoring milestones (checkpoints);
- 10 points - independent testing;
- 16 points - completion of mandatory written work for the semester.

The maximum number of points for midterm assessment is 10 points, including:

- 5 points - for the oral part;
- 5 points - for the written part.

During the academic semester, the current rating for the discipline must be at least 60% of the maximum current rating.

All types of academic work must be completed exactly within the timeframes stipulated by the curriculum.

## Integrated Speaking

	General description	Content	Communicative achievement	Delivery	Language use
5	<b>The response fulfills the demands of the task with minor lapses of completeness. A response at this level is characterised by all of the following:</b>	<p>The answer</p> <ul style="list-style-type: none"> <li>addresses the task completely</li> <li>contains appropriate and sufficient information from the text (written/audio/v video) and its analysis</li> <li>shows an excellent understanding of the task purpose and the target audience</li> <li>is logically and consistently organised</li> </ul>	<p>The student</p> <ul style="list-style-type: none"> <li>demonstrates comprehensive knowledge of the norms of the specific task type</li> <li>uses an appropriate format and register throughout</li> <li>communicates ideas in an effective and convincing way</li> <li>constantly holds the target listeners' attention (monologue) or effectively interacts with a partner</li> </ul>	<p>The student</p> <ul style="list-style-type: none"> <li>demonstrates clear and natural pronunciation</li> <li>uses intonation to convey the message effectively</li> <li>demonstrates accurate use of sentence and word stress</li> <li>shows no evident hesitations</li> </ul>	<p>The answer</p> <ul style="list-style-type: none"> <li>demonstrates good control of varied grammatical structures and vocabulary adequate to the required level</li> <li>contains minor errors which do not affect comprehension</li> </ul>
4	<b>Contains the features of 5 and 3</b>				
3	<b>The response is connected to the task, though it misses some relevant information or contains inaccuracies. A response at this level is characterised by at least three of the following:</b>	<p>The answer</p> <ul style="list-style-type: none"> <li>mainly addresses the task</li> <li>includes some of the content from the text (written/audio/v video) relevant to the task</li> <li>shows difficulties in understanding of the task purpose and the target audience</li> <li>has some errors in logical organisation and consistency though they do</li> </ul>	<p>The student</p> <ul style="list-style-type: none"> <li>demonstrates sufficient knowledge of the norms of the specific task type</li> <li>uses mainly appropriate format and register</li> <li>communicates ideas in a relatively effective and convincing way</li> <li>mainly holds the target listeners' attention or interacts with a partner</li> </ul>	<p>The student</p> <ul style="list-style-type: none"> <li>demonstrates pronunciation which is mostly clear and natural</li> <li>uses intonation which is sometimes effective to convey the message</li> <li>uses sentence stress and word stress generally accurately</li> <li>maintains overall flow of speech despite</li> </ul>	<p>The answer</p> <ul style="list-style-type: none"> <li>demonstrates limited range of vocabulary and grammatical structures which the student is expected to produce at the required level</li> <li>contains errors in vocabulary and grammar structures which do not hinder comprehension</li> </ul>

		not seriously interfere with communication of the message		some hesitations	
<b>2</b>	<b>Contains the features of 3 and 1</b>				
<b>1</b>	<b>The response is very limited in content or coherence or is only minimally connected to the task. A response at this level is characterised by at least three of the following:</b>	<p>The answer</p> <ul style="list-style-type: none"> <li>partially addresses the task</li> <li>provides insufficient content from the text (written/audio/video) relevant to the task</li> <li>shows a lack of understanding of the task purpose and audience</li> <li>is not logically organised and inconsistent</li> </ul>	<p>The student</p> <ul style="list-style-type: none"> <li>demonstrates insufficient knowledge of the norms of the specific task type</li> <li>produces text with an inconsistent or inappropriate format and register</li> <li>fails to communicate ideas in an effective and convincing way</li> <li>fails to keep the target listeners' attention or communicate with a partner</li> </ul>	<p>The student</p> <ul style="list-style-type: none"> <li>demonstrates unclear pronunciation and/or inappropriate intonation which prevents clear understanding</li> <li>fails to maintain overall flow of speech due to frequent hesitations which place strain on the listener</li> </ul>	<p>The answer</p> <ul style="list-style-type: none"> <li>demonstrates minimal control over vocabulary and grammatical structures adequate to the required level</li> <li>uses language which is difficult to understand, due to errors in vocabulary and grammatical structures</li> </ul>
<b>0</b>	Speaker makes no attempt to respond or response is unrelated to the task				

### Integrated Writing

	<b>General description</b>	<b>Content</b>	<b>Communicative achievement</b>	<b>Organisation</b>	<b>Language use</b>
<b>5</b>	<b>The response fulfills the demands of the task with minor lapses of completeness. A response at this level is characterised by all of the following:</b>	<p>The answer</p> <ul style="list-style-type: none"> <li>addresses the task completely</li> <li>contains appropriate and sufficient information from the text (written/audio/video) and its analysis</li> <li>shows an excellent understanding of the task purpose and the target audience</li> <li>presents a clear progression of</li> </ul>	<p>The student</p> <ul style="list-style-type: none"> <li>demonstrates comprehensive knowledge of the norms of the specific task type</li> <li>uses an appropriate format and register throughout</li> <li>communicates ideas in an effective and convincing way</li> </ul>	<p>The answer</p> <ul style="list-style-type: none"> <li>is coherent (logically and consistently organised, easy to understand)</li> <li>uses a wide range of cohesive devices</li> <li>meets word count requirements</li> </ul>	<p>The answer</p> <ul style="list-style-type: none"> <li>demonstrates good control of varied grammatical structures and vocabulary adequate to the required level</li> <li>minor errors do not affect comprehension</li> <li>demonstrates the accurate use of punctuation marks, spelling and capitalisation rules</li> </ul>

		ideas with appropriate detail			
4	<b>Contains the features of 5 and 3</b>				
3	<b>The response is connected to the task, though it misses some relevant information or contains inaccuracies. A response at this level is characterised by at least three of the following:</b>	<p>The answer</p> <ul style="list-style-type: none"> <li>mainly addresses the task</li> <li>includes some of the content from the text (written/audio/video) relevant to the task</li> <li>shows difficulties in understanding of the task purpose and the target audience</li> <li>demonstrates limited development of ideas</li> </ul>	<p>The student</p> <ul style="list-style-type: none"> <li>demonstrates sufficient knowledge of the norms of the specific task type</li> <li>uses mainly appropriate format and register</li> <li>communicates ideas in a relatively effective and convincing way</li> </ul>	<p>The answer</p> <ul style="list-style-type: none"> <li>demonstrates limited coherence</li> <li>uses some cohesive devices</li> <li>meets the word count requirements</li> </ul>	<p>The answer</p> <ul style="list-style-type: none"> <li>demonstrates limited range of vocabulary and grammatical structures which the student is expected to produce at the required level</li> <li>contains errors in vocabulary and grammar structures which do not hinder comprehension</li> <li>contains errors in punctuation, spelling and capitalisation</li> </ul>
2	<b>Contains the features of 3 and 1</b>				
1	<b>The response is very limited in content or coherence or is only minimally connected to the task. A response at this level is characterised by at least three of the following:</b>	<p>The answer</p> <ul style="list-style-type: none"> <li>partially addresses the task</li> <li>provides insufficient content from the text (written/audio/video) relevant to the task</li> <li>shows lack of understanding of the task purpose and audience</li> <li>shows minimal development of ideas</li> </ul>	<p>The student</p> <ul style="list-style-type: none"> <li>demonstrates insufficient knowledge of the norms of the specific task types</li> <li>produces text with an inconsistent or inappropriate format and register</li> <li>fails to communicate ideas in an effective and convincing way</li> </ul>	<p>The answer</p> <ul style="list-style-type: none"> <li>lacks coherence</li> <li>uses cohesive devices either insufficiently or inappropriately</li> <li>is either above or below the required word count</li> </ul>	<p>The answer</p> <ul style="list-style-type: none"> <li>demonstrates minimal control over vocabulary and grammatical structures adequate to the required level</li> <li>uses language which is difficult to understand, due to errors in vocabulary and grammatical structures</li> <li>demonstrates inaccurate use of punctuation, spelling and capitalisation</li> </ul>
0	A response at this level merely copies sentences from the text, is not connected to the task, or is blank.				

## Independent Speaking

	General description	Content	Communicative achievement	Delivery	Language use
5	<p><b>The response fulfills the demands of the task with minor lapses of completeness.</b></p> <p><b>A response at this level is characterised by all of the following:</b></p>	<p>The answer</p> <ul style="list-style-type: none"> <li>– addresses the task completely</li> <li>– shows an excellent understanding of the task purpose and the target audience</li> <li>– is logically and consistently organised</li> </ul>	<p>The student</p> <ul style="list-style-type: none"> <li>– demonstrates comprehensive knowledge of the norms of the specific task type</li> <li>– uses an appropriate format and register throughout</li> <li>– communicates ideas in an effective and convincing way</li> <li>– constantly holds the target listeners' attention (monologue) or effectively interacts with a partner</li> </ul>	<p>The student</p> <ul style="list-style-type: none"> <li>–demonstrates clear and natural pronunciation</li> <li>–uses intonation to convey the message effectively</li> <li>–demonstrates accurate use of sentence and word stress</li> <li>–shows no evident hesitations</li> <li>–purposefully applies a range of digital tools (if required)</li> <li>–demonstrates a strong ability to to design effective and appealing visuals (if required)</li> </ul>	<p>The answer</p> <ul style="list-style-type: none"> <li>–demonstrates good control of varied grammatical structures and vocabulary adequate to the required level</li> <li>–contains minor errors which do not affect comprehension</li> </ul>
4	<b>Contains the features of 5 and 3</b>				
3	<p><b>The response is connected to the task, though it misses some relevant information or contains inaccuracies.</b></p> <p><b>A response at this level is characterised by at least three of the following:</b></p>	<p>The answer</p> <ul style="list-style-type: none"> <li>– mainly addresses the task</li> <li>– shows difficulties in understanding of the task purpose and the target audience</li> <li>– has some errors in logical organisation and consistency though they do not seriously interfere with communication of the message</li> </ul>	<p>The student</p> <ul style="list-style-type: none"> <li>–demonstrates sufficient knowledge of the norms of the specific task type</li> <li>–uses mainly appropriate format and register</li> <li>–communicates ideas in a relatively effective and convincing way</li> <li>–mainly holds the target</li> </ul>	<p>The student</p> <ul style="list-style-type: none"> <li>–demonstrates pronunciation which is mostly clear and natural</li> <li>–uses intonation which is sometimes effective to convey the message</li> <li>–uses sentence stress and word stress generally accurately</li> <li>maintains overall flow of speech</li> </ul>	<p>The answer</p> <ul style="list-style-type: none"> <li>– demonstrates limited range of vocabulary and grammatical structures which the student is expected to produce at the required level</li> <li>– contains errors in vocabulary and grammar structures which do not hinder comprehension</li> </ul>

			listeners' attention or interacts with a partner	despite some hesitations –purposefully applies an average number of digital tools (if required) –demonstrates an average ability to design effective and appealing visuals (if required)	
<b>2</b>	<b>Contains the features of 3 and 1</b>				
<b>1</b>	<p><b>The response is very limited in content or coherence or is only minimally connected to the task.</b></p> <p><b>A response at this level is characterised by at least three of the following:</b></p>	<p>The answer</p> <ul style="list-style-type: none"> <li>– partially addresses the task</li> <li>– shows a lack of understanding of the task purpose and audience</li> <li>– is not logically organised and inconsistent</li> </ul>	<p>The student</p> <ul style="list-style-type: none"> <li>– demonstrates insufficient knowledge of the norms of the specific task type</li> <li>– produces text with an inconsistent or inappropriate format and register</li> <li>– fails to communicate ideas in an effective and convincing way</li> <li>– fails to keep the target listeners' attention or communicate with a partner</li> </ul>	<p>The student</p> <ul style="list-style-type: none"> <li>–demonstrates unclear pronunciation and/or inappropriate intonation which prevents clear understanding</li> <li>–fails to maintain overall flow of speech due to frequent hesitations which place strain on the listener</li> <li>–fails to apply digital tools (if required)</li> <li>–fails to design effective and appealing visuals (if required)</li> </ul>	<p>The answer</p> <ul style="list-style-type: none"> <li>– demonstrates minimal control over vocabulary and grammatical structures adequate to the required level</li> <li>– uses language which is difficult to understand, due to errors in vocabulary and grammatical structures</li> </ul>
<b>0</b>	Speaker makes no attempt to respond or response is unrelated to the task				

## Independent Writing

	General description	Content	Communicative achievement	Organisation	Language use
5	<p><b>The response fulfills the demands of the task with minor lapses of completeness.</b></p> <p><b>A response at this level is characterised by all of the following:</b></p>	<p>The answer</p> <ul style="list-style-type: none"> <li>– addresses the task completely</li> <li>– shows an excellent understanding of the task purpose and the target audience</li> <li>– presents a clear progression of ideas with appropriate detail</li> <li>– accurately labels the diagram (if required)</li> </ul>	<p>The student</p> <ul style="list-style-type: none"> <li>– demonstrates comprehensive knowledge of the norms of the specific task type</li> <li>– uses an appropriate format and register throughout</li> <li>– communicates ideas in an effective and convincing way</li> </ul>	<p>The answer</p> <ul style="list-style-type: none"> <li>– is coherent (logically and consistently organised, easy to understand)</li> <li>– uses a wide range of cohesive devices</li> <li>– meets word count requirements</li> <li>– fully complies with APA citation guidelines (if required)</li> </ul>	<p>The answer</p> <ul style="list-style-type: none"> <li>– demonstrates good control of varied grammatical structures and vocabulary adequate to the required level</li> <li>– minor errors do not affect comprehension</li> <li>– demonstrates the accurate use of punctuation marks, spelling and capitalisation rules</li> </ul>
4	<b>Contains the features of 5 and 3</b>				
3	<p><b>The response is connected to the task, though it misses some relevant information or contains inaccuracies.</b></p> <p><b>A response at this level is characterised by at least three of the following:</b></p>	<p>The answer</p> <ul style="list-style-type: none"> <li>– mainly addresses the task</li> <li>– shows difficulties in understanding of the task purpose and the target audience</li> <li>– demonstrates limited development of ideas</li> <li>– adequately labels the diagram (if required)</li> </ul>	<p>The student</p> <ul style="list-style-type: none"> <li>– demonstrates sufficient knowledge of the norms of the specific task type</li> <li>– uses mainly appropriate format and register</li> <li>– communicates ideas in a relatively effective and convincing way</li> </ul>	<p>The answer</p> <ul style="list-style-type: none"> <li>– demonstrates limited coherence</li> <li>– uses some cohesive devices</li> <li>– meets the word count requirements</li> <li>– generally follows APA citation guidelines (if required)</li> </ul>	<p>The answer</p> <ul style="list-style-type: none"> <li>– demonstrates limited range of vocabulary and grammatical structures which the student is expected to produce at the required level</li> <li>– contains errors in vocabulary and grammar structures which do not hinder comprehension</li> <li>– contains errors in punctuation, spelling and capitalisation</li> </ul>
2	<b>Contains the features of 3 and 1</b>				

<b>1</b>	<p><b>The response is very limited in content or coherence or is only minimally connected to the task.</b></p> <p><b>A response at this level is characterised by at least three of the following:</b></p>	<p>The answer</p> <ul style="list-style-type: none"> <li>– partially addresses the task</li> <li>– shows lack of understanding of the task purpose and audience</li> <li>– shows minimal development of ideas</li> <li>– fails to label the diagram (if required)</li> </ul>	<p>The student</p> <ul style="list-style-type: none"> <li>– demonstrates insufficient knowledge of the norms of the specific task types</li> <li>– produces text with an inconsistent or inappropriate format and register</li> <li>– fails to communicate ideas in an effective and convincing way</li> </ul>	<p>The answer</p> <ul style="list-style-type: none"> <li>– lacks coherence</li> <li>– uses cohesive devices either insufficiently or inappropriately</li> <li>– is either above or below the required word count</li> <li>– fails to adhere to APA citation guidelines (if required)</li> </ul>	<p>The answer</p> <ul style="list-style-type: none"> <li>– demonstrates minimal control over vocabulary and grammatical structures adequate to the required level</li> <li>– uses language which is difficult to understand, due to errors in vocabulary and grammatical structures</li> <li>– demonstrates inaccurate use of punctuation, spelling and capitalisation</li> </ul>
<b>0</b>	A response at this level merely copies sentences from the text, is not connected to the task, or is blank.				



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

#### Topic 1. Basics of Artificial Intelligence

**Classwork:** Reading a text on AI philosophy and completing a table of key ideas. Listening to a podcast on the philosophical aspects of AI and writing a summary. Debating the topic ‘The possibility of AI acquiring consciousness’. Discussing the philosophical issues surrounding the development of AI. Analysing a text on the history of AI with answering questions. Listening to an interview with a scientist about the development of AI, highlighting key points. Relating passages of the audio recording to relevant dates and events. Presentation of key stages in the development of AI. Discussion of the causes of crises and upswings in the history of AI. Analysing an article about different types of AI and completing a comparative table. Reconstructing the structure of the text (definition, examples, advantages, disadvantages). Listening to an audio text explaining the workings of different AI technologies and relating the descriptions to the types. Filling in the gaps in the transcript of an audio fragment about machine learning. Presentation of the selected AI technology. Discussion of the most promising types of AI. Study of the Prompts Guidelines with a list of key principles. Analysing examples of good and bad prompts with an explanation of the differences. Listening to an explanation of AI professionals with assignments on key details. Relating audio clips to examples of prompts. Discussing the factors that influence the effectiveness of a prompt. Practical assignment with formulating and testing prompts. Analysing successful examples of prompts and suggesting improvements. Listening to an expert explain the structure of prompts with assignments. Practical work on creating and explaining the effectiveness of prompts. Discussion about mistakes in formulating prompts. Analyse a text on multi-agent systems and answer the questions. Filling in the table with the differences between single AI and multi-agent systems. Listening to an explanation of how multi-agent systems work and selecting the correct statements. Relating examples of agent interactions to their functions in the system. Discussing the advantages and disadvantages of multi-agent systems. Describing the operation of a multi-agent system using a real example. Reading an article on modern AI methods with comparative analysis. Making a forecast of AI development on the basis of the read material. Listening to an audio text about the latest AI developments with preparing a list of key ideas. Correlating different approaches to AI development with their advantages and limitations. Round table discussion on ‘The future of AI and its impact on society’. Debate ‘Is the current development of AI a threat or an opportunity?’.

**Home assignments:** Writing an essay on the topic: ‘What is artificial intelligence: a tool, a mechanism or a mind?’. Comparative analysis of the concepts of ‘strong’ and ‘weak’ AI with examples. Writing a biographical essay on the contribution of a key scientist (Alan Turing, Marvin Minsky, Jeffrey Hinton, etc.). Analysing an article on the development of AI and its impact on modern technology. Writing a paragraph on modern technologies used in AI. Analysing an article on AI classification and highlighting its key ideas. Creating a set of prompts to perform various tasks (data analysis, code generation, creative writing). Writing a paragraph on the principles of effective prompt engineering. Parsing errors in prompts and suggesting options for improving them. Developing guidelines for creating prompts for different applications. Writing a paragraph on the application of multi-agent systems in real tasks. Comparative analysis of traditional and modern AI training methods. Writing an essay on the future development of AI technologies. Writing an essay on the prospects and limitations of modern AI systems.

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

## Example of a listening task

*Listen to the text and answer the questions:*

1. What is machine learning, and how does it contribute to the functionality of AI systems?
2. How do neural networks and deep learning enable machines to solve complex problems, such as image or speech recognition?
3. What are some ethical challenges associated with AI, and why is it important to address them in the development of intelligent systems?

Artificial intelligence (AI) refers to the simulation of human intelligence in machines that are programmed to think, learn, and perform tasks typically requiring human cognition. At its core, AI enables computers to process data, recognize patterns, and make decisions with minimal human intervention. One of the foundational concepts of AI is machine learning, a subset where algorithms are trained on large datasets to identify trends and improve performance over time. For instance, recommendation systems used by platforms like Netflix and Amazon rely on machine learning to predict user preferences based on past behavior.

Another critical component of AI is neural networks, which are modeled after the human brain's structure. These networks consist of interconnected layers of nodes that process information and solve complex problems, such as image or speech recognition. Deep learning, an advanced form of machine learning, utilizes multi-layered neural networks to achieve high accuracy in tasks like facial recognition or language translation.

AI also encompasses natural language processing (NLP), which allows machines to understand and interact with humans in their native languages. Virtual assistants like Siri and Alexa leverage NLP to interpret voice commands and provide relevant responses. Additionally, AI employs techniques like computer vision, enabling machines to "see" and interpret visual data from the world, such as identifying objects in photos or detecting anomalies in medical scans.

Despite its complexity, AI operates on fundamental principles: data collection, algorithm design, and iterative learning. The quality of data and the efficiency of algorithms determine the success of AI systems. However, ethical considerations, such as bias in data and decision-making, remain significant challenges. Ensuring transparency, fairness, and accountability in AI development is crucial to building trust and maximizing its potential.

In essence, AI combines mathematics, computer science, and domain expertise to create intelligent systems capable of solving real-world problems. As technology advances, understanding its basics becomes increasingly important for harnessing its benefits responsibly.

## Topic 2. Application of Artificial Intelligence.

**Classwork:** Reading a text on the application of AI in physics and completing a table of key technologies and their features. Researching scientific articles on the application of AI in different branches of science and then writing a summary. Listening to a podcast about the use of AI in science followed by a summary. Debate on 'Can AI replace the scientist in research?'. Discussing the impact of AI on current scientific research and predicting future discoveries. Analysing a text on the role of AI in astronomy and space research with answers to questions. Listening to an interview with a researcher about the role of AI in modelling complex systems, highlighting key points. Correlating audio extracts with examples of scientific breakthroughs achieved using AI. Presentation of projects demonstrating the application of AI in science. Discussion on the limits

and possibilities of using AI in scientific research. Reading an article on the application of AI in medicine and completing the table 'Benefits and risks of automated diagnostics'. Analysing examples of AI applications in medical diagnosis, treatment and drug development highlighting key aspects. Listening to an audio text about the role of AI in personalised medicine and preparing a list of key ideas. Filling in the missing words in the description of the work of AI algorithms in the diagnosis of diseases. Discussing the advantages and disadvantages of using AI in medical practice. Debate on the topic 'Can AI replace a doctor in making a diagnosis?'. Correlation of audio fragments with examples of AI application in surgery. Presentation of cases of successful application of AI in medical practice. Analysing a text about the application of AI in fintech with answers to questions. Listening to an interview with an expert on the impact of AI on financial analytics, highlighting key ideas. Discussing the ethical aspects of the use of AI in the financial sector. Debate on 'Is AI a threat to the traditional banking sector?'. Presentation of case studies on the use of AI in the fight against financial fraud. Reading a text on the application of AI in personalised learning and knowledge assessment, highlighting the key benefits. Listening to a podcast on the implementation of AI in education and preparing a summary. Completing a chart reflecting the key technologies of AI in education. Discuss the impact of AI on the quality of learning and the teaching profession. Debate on 'Will AI replace traditional teachers?'. Presentation of possible scenarios for the development of AI in education. Reading an article on the application of AI in automated customer service, highlighting advantages and disadvantages. Analysing cases of AI use in hotel retail. Listening to an interview with a representative of a company implementing AI solutions in customer service. Discussing the effectiveness of AI in improving customer service. Debate on 'Is AI capable of creating a better customer experience than humans?'. Presentation of examples of successful application of AI in the service sector.

**Home assignments:** Writing an essay on the topic: 'The Future of Science in the Age of AI: Scientist's Assistant or Competitor?'. Comparative analysis of the use of AI in different scientific disciplines (computer science, physics, biology, chemistry, astronomy). Writing an analytical report on the application of AI in astronomy and space research. Analysing an article on the application of AI in science, highlighting its key ideas. Writing a foresight study on the role of AI in future discoveries and technological breakthroughs. Writing an essay on the topic: 'Artificial Intelligence in Medicine: Revolution or Risk?'. Writing a paragraph on the application of AI in pharmaceuticals and the development of new drugs. Analysis of scientific publications on personalised medicine and the role of AI in its development. Writing an essay on the topic: 'AI in finance: effective risk management or security threat?'. Writing a paragraph on AI mechanisms for financial fraud detection. Analysing an article on the application of AI in the cryptocurrency market and price forecasting. Writing an essay on the topic: 'The future of education in the AI era: human vs. machine?'. Analysing a scientific article on the impact of AI on the cognitive development of students. Writing an essay on the topic: 'AI in the service sector: a tool to improve quality or a threat to employment?'. Writing a paragraph on the influence of AI on personalisation of interaction with customers. Review of cases of application of AI chatbots in the sphere of service. Analysis of a research article on the role of AI in optimising business processes in the service industry.

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

### **Example of a reading assignment.**

Read the text and decide if the following statements are True or False

1. AI-powered tools like IBM Watson can analyze medical data to recommend personalized therapies for patients.
2. Autonomous vehicles rely on AI to process real-time data from sensors and cameras, but they cannot reduce traffic congestion.
3. In retail, AI-driven analytics help companies predict consumer behavior and manage inventory more effectively.
4. Adaptive learning platforms use AI to deliver standardized educational content to all students equally.
5. The widespread adoption of AI raises no ethical concerns and is universally accepted by society.

Artificial intelligence (AI) has become a transformative force across various industries, revolutionizing the way we live and work. One of the most prominent applications of AI is in healthcare, where it assists in diagnosing diseases, predicting patient outcomes, and personalizing treatment plans. For instance, AI-powered tools like IBM Watson analyze vast amounts of medical data to recommend therapies tailored to individual patients. Similarly, AI algorithms are used in radiology to detect abnormalities in X-rays and MRIs with remarkable accuracy, often surpassing human capabilities.

In the field of transportation, AI is driving innovation through autonomous vehicles. Self-driving cars, such as those developed by Tesla and Waymo, rely on AI to process real-time data from sensors and cameras, ensuring safe navigation and reducing human error. This technology has the potential to make roads safer, decrease traffic congestion, and provide mobility solutions for individuals unable to drive.

AI is also reshaping the business landscape by enhancing customer experiences and optimizing operations. Chatbots and virtual assistants, powered by natural language processing, offer 24/7 support to customers, resolving queries efficiently. In retail, AI-driven analytics help companies predict consumer behavior, manage inventory, and deliver personalized recommendations, improving sales and customer satisfaction.

Education is another domain benefiting from AI. Adaptive learning platforms use AI to customize educational content based on students' strengths and weaknesses, fostering better learning outcomes. Additionally, AI aids educators by automating administrative tasks, allowing them to focus more on teaching.

Despite its many advantages, the widespread adoption of AI raises ethical concerns, including job displacement and data privacy issues. Nevertheless, when used responsibly, AI holds immense potential to address global challenges and improve quality of life. Its applications continue to expand, paving the way for a smarter, more connected world.

### **Topic 3. Ethics of Artificial Intelligence.**

**Classwork:** Read a text on ethical principles for the use of AI and complete a table of key norms and principles. Listening to a podcast on the regulation of AI and discussing the main ethical dilemmas associated with its use. Debate on 'Should autonomous AI systems that make decisions without human input be banned?'. Discussing the impact of ethical standards on the development of artificial intelligence and predicting future legal constraints. Presentation of proposals for creating a code of ethics for AI developers. Reading an article about AI-assisted content generation and the risks of copyright and forgery. Listening to interviews with experts on the role of AI in spreading misinformation and compiling a list of possible methods to combat fake content. Debate on 'Is AI-generated content a genuine work of art?'. Discussion of the boundaries between human

and machine creativity. Presentation of cases of using generative AI in journalism, advertising and design. Reading an article on AI as a tool of creativity in music, painting and literature, highlighting examples of successful human-machine co-operation. Listening to and discussing an audio fragment about the use of AI in the creation of musical compositions. A discussion on the creativity of artificial intelligence: is it capable of true creativity? Presentation of a comparative analysis of works created by humans and AI. Reading an article about the interaction of artists, writers and composers with AI assistants and discussing the prospects of such co-operation. Listening to interviews with creative professionals using AI in their work, highlighting key aspects. Debate on 'Can AI be recognised as a creator of artworks?'. Presentation of research papers on the future of creative professions in the age of AI. Reading an article on the ethics of using AI in the creative industries with an analysis of the possible legal implications. Discussion on 'How can copyrights for AI-created works be fairly regulated?'. Presentation of proposals for regulating AI in creative industries. Discussion of an article on the phenomenon of emotional attachment to AI assistants. Listening to a podcast on psychological aspects of interaction with AI companions and writing a reflective report. Debate on 'Is emotional attachment to AI dangerous for humans?'. A discussion on the boundaries of acceptable interaction with AI companions. Reading and discussion of an article on the use of AI in psychotherapy and care of the elderly. Listening to interviews with AI companion users highlighting their positive and negative experiences. Presentation of successful cases of using AI in social adaptation of people. Discussion on 'Can AI companions replace human communication?'. Reading and discussion of an article about the influence of AI on the formation of new models of communication and interaction. Listening to an audio text on the prospects for social interaction in a world where AI plays a key role. Debate on 'Will the proliferation of AI communicators lead to a decline in empathy in society?'. Presentation of predictions about the future of social interactions given the development of artificial intelligence.

**Домашние задания:** Writing an essay on the topic: 'Ethics and Artificial Intelligence: How to Prevent Abuse?'. Writing a paragraph on the problems of algorithms' bias and ways to eliminate them. Writing an essay on the topic: 'AI in media: the future of journalism or a threat to the reliability of information?'. Writing a paragraph on the problem of deepfake and methods of combating data falsification. Writing an essay on the topic: 'AI in art: true creativity or copying?'. A comparative analysis of AI and human created works of art, identifying key differences. Writing a paragraph on the impact of AI on contemporary art and music practices. Writing an essay on 'How does interacting with AI change the artistic process?'. Writing a paragraph on perspectives on creativity with AI. Writing an essay on 'Can AI supplant artists and writers?'. Parsing scholarly publications on the future of creative professions in the age of AI. Writing an essay on the topic: 'Can AI become a full-fledged interlocutor?'. Analysing real cases of users' attachment to AI companions. Writing a paragraph on possible psychological consequences of interaction with AI. Dissecting scientific research on the impact of AI assistants on human social skills. Writing an essay on 'AI companions: support for lonely people or risk of social isolation?'. Comparative analysis of the functions of AI companions in different cultures. Writing an analytical paragraph on the role of AI in psychotherapy and social adaptation. Dissecting research studies on the impact of AI companions on emotional wellbeing. Writing an essay on 'How is AI changing our communication?'. Analysing changes in language behaviour when using AI companions. Writing a predictive essay on the future of interpersonal interactions in the age of AI.

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

#### **Example of a speaking assignment.**

Read the text and discuss the following questions:

1. What are some of the key ethical challenges associated with the use of artificial intelligence, and how can developers and policymakers address these concerns to ensure fairness and transparency in AI systems?
2. How can collaboration between governments, businesses, and civil society help create a framework for the responsible development and deployment of AI technologies that prioritize human values and minimize risks?

Artificial Intelligence (AI) is reshaping the world, offering immense opportunities but also raising profound ethical concerns. Ensuring AI aligns with human values and rights is essential to prevent harm and promote fairness. At its core, ethical AI must prioritize fairness, transparency, privacy, safety, and accountability while empowering humanity rather than undermining it.

One of the biggest challenges is bias and discrimination. AI systems trained on skewed data can perpetuate societal inequalities, such as racial or gender biases in hiring or law enforcement. Developers must rigorously audit datasets and algorithms to ensure equitable outcomes. Transparency is equally critical—users deserve to understand how decisions are made, especially in sensitive areas like healthcare or criminal justice. Privacy is another concern, as AI often relies on vast amounts of personal data. Strong safeguards are needed to protect individuals from misuse and surveillance.

The rapid adoption of AI also brings risks like job displacement, economic inequality, and the potential for autonomous weapons. Policymakers, businesses, and educators must work together to address these issues through reskilling programs, robust regulations, and international cooperation. Additionally, the concentration of AI power in a few tech giants raises questions about monopolies and lack of diversity in shaping its future.

Responsibility for ethical AI lies with multiple stakeholders. Developers must design systems that prioritize safety and inclusivity. Companies should adopt ethical guidelines and avoid prioritizing profit over public good. Governments play a vital role in creating laws and oversight mechanisms, while civil society can advocate for transparency and accountability. Even individual users have a part to play by using AI responsibly and critically evaluating its outputs.

Ultimately, building ethical AI requires embedding moral principles into every stage of development and fostering collaboration across sectors. By doing so, we can harness AI's potential to improve lives while minimizing risks. As stewards of this powerful technology, we must ensure it serves humanity's best interests, upholding dignity, equity, and sustainability for all.

#### **Topic 4. Future of Artificial Intelligence.**

**Classwork:** Reading an article on future trends in the use of AI, completing a table of key trends in the development of the technology and then discussing them. Listening to a podcast about the most significant innovations related to AI, making a list of key trends and discussing them. Debate on 'Will the development of AI lead to a technological singularity?'. Discussing the impact of future AI technologies on society and predicting possible changes. Presentation of predictions about the most likely future scenarios dominated by AI. Reading and discussing an article on the future of AI in everyday life: applications and impact, highlighting key areas where AI will change everyday habits. Listening to and discussing interviews with futurologists on the prospects for mass adoption of AI in everyday processes. Discussing the benefits and risks of integrating AI into homes, transport, work and leisure. Debate on 'Will the human of the future be completely

dependent on AI in everyday life?'. Presentation of possible scenarios for the impact of AI on human quality of life. Listening to a podcast on the impact of AI on the digital transformation of industries and preparing a summary. Debate on 'Should diagnostic decisions be trusted entirely to AI?'. Discussing the ethical aspects of using AI in teaching and medicine. Presentation of comparative analysis of traditional and AI-oriented models of education and medicine. Analysis and discussion of an article on the future of human and AI interaction with identification of possible forms of joint work and cooperation. Listening to an audio text on the prospects of human-machine cognitive fusion followed by thesis writing and discussion. Discussion of possible forms of human and AI symbiosis, including neural interfaces and cybernetic systems. Debate on 'Should humans retain control over AI or is decision-making parity possible?'. Presentation of research evidence on the impact of AI on human cognitive evolution. Reading and discussing an article on global automation using AI and its impact on the labour market with an analysis of potential threats and new opportunities. Listening to and discussing interviews with economists on the transformation of occupations in the AI era. Debate on 'Will automation lead to global unemployment or open up new career prospects?'. Discussion of measures that can be taken to adapt to the new labour market. Presentation of strategies to prepare for a future where AI replaces routine occupations.

**Home assignments:** Writing an essay on the topic: 'The Future of Artificial Intelligence: Evolution of Technology or Revolution of Consciousness?'. Writing a paragraph on the key trends in AI development for the next 10 years. Comparative analysis of current and predicted AI technologies with highlighting promising trends. Writing an essay on possible scenarios of AI use in the future. Analysis of scientific publications on technological singularity and its possible consequences. Writing an essay on the topic: 'How will artificial intelligence change everyday life in the next 20 years?'. Writing a paragraph on the impact of AI on transport. Sorting out cases about the implementation of AI in everyday services and predicting further changes. Writing an essay on the topic: 'Will humans depend on AI in their daily lives?'. Writing an essay on the topic: 'AI in education: personalised approach or loss of individuality?'. Comparative analysis of traditional and AI-oriented education. Writing a paragraph on the role of AI in the diagnosis and treatment of diseases. Writing an essay on the topic: 'Should medical AI systems be responsible for the decisions made?'. Analysing possible ethical conflicts when using AI in medicine. Writing an essay on the topic: 'Boundaries of human interaction with AI: where is the line?'. Writing a paragraph on the prospects of cognitive fusion of humans and AI. Comparative analysis of traditional forms of human interaction with technology and new possibilities of AI. Writing an essay on possible forms of human and AI co-operation in the future. Writing an essay on the topic: 'Global automation and labour market: will there be new professions?'. Writing a paragraph on the impact of AI on unemployment and transformation of professions. Analysing the social consequences of automation and possible ways for society to adapt to the changes.

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

### **An example of a writing assignment.**

Write an opinion essay on The Future of AI in education.

**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 LMS; 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 tLMS, 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 in 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

##### Essay, paragraph assessment criteria

Maximum number of points – 10

Criterion assessment	Grade points
1. Outlining all the main ideas	2 points
2. Adherence to the essay (paragraph) format	1 point
3. Taking into account the cultural background of the addressee	2 points
4. Linguistic correctness	1 point
5. Logic and cohesion	1 point



6. Formal style	2 points
7. Length (150-200 words for a paragraph, 250-350 words for an essay)	1 point

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

Criteria	Grade points
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

#### Debates and role-play assessment criteria

Maximum number of points – 20

Criteria/Points	5	4	3	2
<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 statement is basically correct in terms of vocabulary,	There are violations in the correctness of the statement in terms of vocabulary,	Serious violations in the correctness of the statement in terms of vocabulary,

	The manner of presentation is very convincing	grammar and pronunciation. The manner of presentation is convincing	grammar and pronunciation. The manner of presentation does not contribute much to the vigor of arguments	grammar and pronunciation, complicating understanding 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

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

End-of-term assessment on the discipline (module) 'English. Artificial Intelligence' is held at the end of each semester.

**9 semester – credit (pass or fail):** Written part: progress test on the course content.  
Oral part: a debate on the proposed topic.

#### **Examples of assignments for the oral and written part of the credit.**

Oral part - debate

The goal of this activity is to assess your ability to articulate your understanding of how artificial intelligence (AI) is applied in scientific research, while also evaluating your critical thinking, fluency, and ability to engage in meaningful discussion. You will explore the opportunities AI presents in science, as well as the ethical and practical challenges it poses.

Group Debate

You will work into two groups:

Group 1: Argues that AI has more benefits than drawbacks in scientific research.

Group 2: Argues that AI poses significant risks and limitations in science.

You have 5 minutes for group preparation, followed by a structured debate where each side presents its case (3–4 minutes per speaker).

Written part – example of the progress test

1. What does AI stand for?
  - a) Artificial Intelligence
  - b) Automated Information
  - c) Advanced Integration
  - d) Algorithmic Innovation
2. Which of the following is NOT a type of AI?
  - a) Reactive Machines
  - b) Limited Memory
  - c) Superhuman AI
  - d) Theory of Mind
3. Which of the following best describes "Machine Learning"?
  - a) A subset of AI that focuses on rule-based systems
  - b) A subset of AI where machines learn from data without explicit programming
  - c) A technique to create robots that mimic human behavior
  - d) A method to simulate human emotions in machines
4. What is the primary goal of AI?
  - a) To replace all human jobs
  - b) To mimic human intelligence and perform tasks autonomously
  - c) To create machines that can feel emotions
  - d) To develop faster computers
5. Which of the following is an example of Narrow AI?
  - a) A machine that can solve any problem like a human
  - b) Siri or Alexa
  - c) A robot with self-awareness

- d) An AI system capable of general intelligence
6. What is "Deep Learning"?
- a) A technique where AI learns through trial and error
  - b) A subset of Machine Learning that uses neural networks with many layers
  - c) A method to teach machines ethical decision-making
  - d) A type of AI that focuses on logical reasoning
7. Which of the following is NOT a common application of AI?
- a) Self-driving cars
  - b) Weather forecasting
  - c) Manual data entry
  - d) Facial recognition
8. What is the Turing Test used for?
- a) To measure the speed of AI algorithms
  - b) To determine if a machine can exhibit human-like intelligence
  - c) To test the accuracy of weather predictions
  - d) To evaluate the strength of encryption algorithms
9. What is supervised learning in AI?
- a) Training a model using labeled data
  - b) Training a model without any input data
  - c) Training a model by letting it explore an environment
  - d) Training a model using reinforcement signals
10. What is unsupervised learning?
- a) Training a model using labeled data
  - b) Training a model using unlabeled data to find patterns
  - c) Training a model using reinforcement learning
  - d) Training a model to follow specific rules
11. Which industry commonly uses AI for fraud detection?
- a) Agriculture
  - b) Banking and Finance
  - c) Education
  - d) Entertainment
12. What is the role of AI in healthcare?
- a) To replace doctors entirely
  - b) To assist in diagnosing diseases and recommending treatments
  - c) To manage hospital finances
  - d) To create virtual reality simulations
13. Which AI technology is used in virtual assistants like Siri and Alexa?
- a) Natural Language Processing (NLP)
  - b) Computer Vision
  - c) Robotics
  - d) Blockchain
14. What is the primary use of AI in autonomous vehicles?
- a) To play music for passengers
  - b) To navigate and avoid obstacles
  - c) To provide internet connectivity
  - d) To monitor fuel consumption
15. Which AI application is used in recommendation systems like Netflix or Amazon?
- a) Reinforcement Learning
  - b) Supervised Learning
  - c) Collaborative Filtering
  - d) Genetic Algorithms

16. What is computer vision primarily used for?
  - a) Translating languages
  - b) Analyzing images and videos
  - c) Writing code automatically
  - d) Predicting stock prices
17. Which of the following is an example of AI in agriculture?
  - a) Crop monitoring using drones
  - b) Manual harvesting
  - c) Traditional irrigation methods
  - d) Handwritten record-keeping
18. What is the role of AI in cybersecurity?
  - a) To create stronger passwords
  - b) To detect and respond to cyber threats in real-time
  - c) To design websites
  - d) To improve internet speed
19. Which AI technology powers chatbots?
  - a) Natural Language Processing (NLP)
  - b) Quantum Computing
  - c) Blockchain
  - d) Augmented Reality
20. What is the future potential of AI in education?
  - a) To replace all teachers
  - b) To personalize learning experiences for students
  - c) To eliminate exams
  - d) To reduce school hours

**10 semester – credit with a grade:**

**Examples of assignments for the oral and written part of the test.**

Written part: final test on the course content.

Oral part: case study discussion.

Example of the final test:

1. What is the primary purpose of expert systems (ES)?
  - a) To analyze large datasets for patterns.
  - b) To mimic human reasoning in solving specific problems.
  - c) To generate personalized advertisements.
  - d) To manage supply chain operations.
2. How does AI improve decision support systems (DSS)?
  - a) By replacing human decision-makers entirely.
  - b) By analyzing data to assist with strategic, tactical, and operational decisions.
  - c) By automating all decision-making processes.

d) By focusing only on financial decisions.

3. What is a key challenge in AI-powered image recognition?

a) Lack of applications in medical fields.

b) Ethical concerns regarding privacy and bias.

c) Overreliance on rule-based systems.

d) Inability to analyze visual data effectively.

4. How does AI improve autonomous vehicles?

a) By using algorithms to process sensor data for navigation and safety.

b) By eliminating the need for maintenance.

c) By operating solely through pre-programmed routes.

d) By focusing only on urban areas.

5. What role does AI play in route optimization?

a) Creating additional traffic signals.

b) Analyzing traffic, weather, and passenger demand to reduce delays.

c) Automating vehicle production processes.

d) Providing live updates to passengers.

6. What is a major concern in implementing AI in public transportation?

a) Overuse of human labor.

b) High implementation costs and data privacy issues.

c) Lack of interest from governments.

d) Inefficient resource allocation.

7. How does AI assist in medical imaging analysis?

a) By replacing doctors in clinical settings.

b) By analyzing scans faster and with high accuracy.

c) By automating appointment scheduling.

d) By diagnosing rare diseases without human input.

8. What is one benefit of remote patient monitoring powered by AI?

- a) Reduced hospital infrastructure.
- b) Real-time health data sent to providers for early intervention.
- c) Elimination of patient-doctor interactions.
- d) Prevention of all medical emergencies.

9. What is a challenge for AI in healthcare?

- a) High energy consumption of AI tools.
- b) Lack of interest from healthcare providers.
- c) Data privacy concerns and high costs of implementation.
- d) Overabundance of skilled AI technicians.

10. How does AI improve inventory management?

- a) By eliminating the need for supply chains.
- b) By predicting stock needs through sales data and market trends.
- c) By automating all retail processes.
- d) By focusing only on seasonal products.

11. What is the role of AI in fraud detection?

- a) Preventing all fraudulent activity.
- b) Identifying anomalies in transaction patterns.
- c) Replacing cybersecurity teams.
- d) Analyzing customer reviews.

12. How does AI enhance manufacturing processes?

- a) By eliminating the need for human oversight.
- b) By automating repetitive tasks and optimizing production.
- c) By increasing material waste.
- d) By reducing the speed of assembly lines.

13. What is one application of AI in education?

- a) Replacing teachers entirely.
- b) Personalized learning platforms that adapt to student needs.
- c) Automating curriculum development without human input.
- d) Designing physical classrooms.

14. How does AI contribute to creative industries?

- a) By only assisting artists with manual tasks.
- b) By generating music, art, and scripts using algorithms.
- c) By eliminating the need for human creativity.
- d) By focusing solely on traditional art forms.

15. What is one ethical concern regarding AI-generated art?

- a) AI tools are not capable of creating art.
- b) AI-generated works lack authenticity and ownership clarity.
- c) AI-generated art does not require any human input.
- d) AI only replicates existing works without innovation.

Oral test - example of case study analysis

### **Title: Implementing AI in a New Smart City Project**

#### **Scenario:**

You are part of a team tasked with designing and implementing AI systems for a new smart city. The city's primary goals are to enhance efficiency, sustainability, and quality of life for its residents. However, you face challenges such as budget constraints, ethical concerns, and the need to balance automation with human jobs.

#### **Roles**

Each participant will take on one of the following roles in the discussion:

1. **City Planner**
  - Focus on how AI can optimize urban infrastructure, such as traffic management, waste collection, and public transportation.
  - Emphasize the need for sustainable development and reducing costs.
2. **Ethics Specialist**
  - Highlight ethical concerns, such as data privacy, surveillance, and job displacement.
  - Propose policies to ensure AI is used responsibly.
3. **Technology Expert**



- Explain the technical aspects of AI systems, such as predictive analytics, automation, and integration with IoT devices.
- Address challenges like data reliability and system maintenance.
- 4. **Public Representative**
  - Represent the concerns and expectations of citizens.
  - Advocate for transparency, equitable access to AI technologies, and minimizing disruptions to daily life.

## Task Instructions

1. **Preparation (5–7 minutes):**
  - Individually, review the role and prepare 2–3 points to discuss during the meeting.
  - Use examples from the lessons, such as AI in transportation, healthcare, energy, or governance.
2. **Group Discussion (15–20 minutes):**
  - Discuss the following questions as a team:
    - Which AI systems should be prioritized in the smart city?
    - How can we address the challenges of budget constraints and ethical concerns?
    - How do we ensure that the benefits of AI are accessible to all residents?
    - What safeguards should be implemented to address data privacy and job displacement concerns?
  - Collaborate to create a proposed AI implementation plan for the smart city.
3. **Presentation (5 minutes per group):**
  - Present your team’s proposed plan to the class, outlining the selected AI systems, the benefits they bring, and how challenges will be addressed.

## Criteria for assessing the tasks of assessment

Oral proficiency is assessed in the form of case studies, debates, role play, prepared monologues on the studied topics.

Case study analysis evaluation criteria.

Maximum number of points – 10

Criteria for evaluating case solutions

Criterion	Grade points
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>

Debates evaluation criteria.

Maximum number of points – 20

Criterion/grade points	5	4	3	2
<b>Structure and clarity of presentation</b>	All arguments are presented in a clear, logical and coherent manner	The arguments are mostly presented clearly, there are some irregularities in the structure and logic of the presentation	Significant irregularities in the logic and sequence of the presentation, making it difficult to comprehend	The statement is uninstructed, arguments are presented inconsistently
<b>Argumentation</b>	High level of argumentation (examples, facts, statistics, references to authoritative sources)	Good level of argumentation, with minor deficiencies (insufficient justification)	Average level of argumentation, insufficient persuasiveness	Weak or no argumentation (arguments are not relevant to the problem being discussed).
<b>Counterargumentation and defence</b>	High level of counterargumentation (problems and weaknesses in the opponent's position are pointed out, objections are supported by arguments)	Good level of counter-argumentation, minor problems in defence of position are tolerated	Average level of counterargumentation, there are serious problems in defending one's position and reflecting the opponent's arguments	Weak level of counterargumentation, inability to point out weaknesses in the opponent's position and to defend one's point of view
<b>Speech features</b>	The statement is correct in terms of vocabulary, grammar and pronunciation The manner of presentation is very convincing	The statement is mostly correct in terms of vocabulary, grammar, and pronunciation The manner of presentation is convincing.	There are irregularities in the correctness of the statement in terms of vocabulary, grammar and pronunciation The manner of presentation does not contribute to persuasiveness	Serious irregularities in the correctness of the statement in terms of vocabulary, grammar and pronunciation, impairing comprehension The manner of presentation is unconvincing
<b>Total: maximum 20 points</b>				

Criteria for evaluating a prepared monological statement on the studied topics (message, description, story)

Maximum number of points - 10

Criterion	Criterion description	Grade points
<b>Grammar</b>	Poor knowledge of simple grammatical forms /	0

	does not try to use more complex constructions	
	Limited knowledge of simple grammatical forms / Does not attempt to use more complex constructions	1
	Uses simple grammatical forms well / makes little attempt to use more complex constructions	2
	Good use of simple grammatical forms / tries to use more complex constructions	3
<b>Vocabulary</b>	Uses single words and phrases	0
	Uses limited vocabulary to discuss familiar situations	1
	Mostly uses appropriate vocabulary to discuss familiar topics	2
	Uses appropriate vocabulary to discuss a range of familiar topics	3
<b>Fluency</b>	Significant number of hesitation pauses / frequent repetition of information	0
	Gives answers that go beyond a short phrase, with some pauses / sentences are mostly on topic / some repetition is present / uses only basic techniques of logical connection	1
	Pronounces long stretches of speech with uncertainty / mostly uses a range of linking words correctly / some repetition is present	2
	Pronounces long stretches of speech, allowing for pauses of hesitation/ uses linking words correctly/ uses little repetition	3
<b>Pronunciation</b>	Limited phonological skills; utterance can mostly be understood	0,5
	Shows good phonetic-phonological skills at the word/sentence level	1

The grade in the credit report is assigned in a 10-point system, based on the results of the student's point-rating assessment, on the basis of the following grading scale:

#### 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.