МИНОБРНАУКИ РОССИИ
федеральное государственное бюджетное образовательное учреждение
высшего образования
«ИРКУТСКИЙ ГОСУДАРСТВЕННЫЙ УНИВЕРСИТЕТ»
ФГБОУ ВО «ИГУ»

Кафедра европейских языков

УТВЕРЖДАЮ:
Директор МИЭЛ _____ О. В. Архипкин
« 22 » апреля 2026 г.

Рабочая программа дисциплины

Наименование дисциплины	**Б1.О.04 Цифровая лингвистика и цифровые образовательные технологии / Digital Linguistics and Educational Technologies**
Направление подготовки	**45.04.02 Лингвистика**
Направленность подготовки	Проектирование цифрового лингвистического образовательного контента / Digital Linguistic Educational Content Design»
Квалификация выпускника –	магистр
Форма обучения	очная с применением электронного обучения, дистанционных образовательных технологий

Согласовано с УМК МИЭЛ ИГУ:
Протокол № 3 от « 23» марта 2026 г.
Председатель _____ Е. В. Крайнова

Рекомендовано кафедрой:
Протокол № 7 от «10» марта 2026 г.
Зав. кафедрой _____ И. С. Шильникова

Иркутск 2026 г.

Б1.О.04 Цифровая лингвистика и цифровые образовательные технологии / Digital Linguistics and Educational Technologies

Discipline goals is to gain an understanding of language as a reflection and recording of culture, to familiarize students with the developing trends of the information environment in the Russian Federation, as well as the main areas of priority project "Modern Digital Educational Environment in the Russian Federation" implementation and to introduce the basic concepts of computational linguistics. The course is also aimed at the development of students' knowledge in general, as well as practical mastery of the semiotic approach to the study of various sign systems; to develop self-education skills, cognitive and research skills; to broaden students' horizons and improve their general culture.

Discipline objectives:

1. to introduce students to databases and sources of information;
2. to develop the ability to evaluate the complexity of various solutions and the limits of acceptable errors; to introduce existing technologies in the field of linguistics;
3. to develop the ability to select the optimal data for achieving goals;
4. to introduce the specifics of data processing design and methods for interpreting the results.

CONTENT AND STRUCTURE OF THE DISCIPLINE

This discipline consists of 6 credit units, or 216 hours.
Of these, 16 hours are taught using e-learning and distance learning technologies.
Of these, 18 hours are practical training.

Midterm assessment form: 1st term - credit, 2nd term - credit

Discipline content, structured by topic, indicating the types of classes and the number of academic hours allocated to them

№	Section of the discipline / topic	term	Total number of academic hours	Practical training (in hours)	Types of studies, Including student's independent work, classroom hours and studies intensity (in academic hours)				Forms of ongoing progress monitoring; midterm assessment form (by semester)
					Contact work between the lecturer and the student			Student's independent work	
					Lectures	Classroom studies	Consultations		
1	2	3	4	5	6	7	8	9	10
1	Types of sign systems and their characteristics, functioning and interaction	1	16	1	2	2		12	Oral Survey
2	Language as a sign system. The nature of the linguistic sign	1	16	1	2	2		12	Oral Survey
3.	Semiotic analysis of a literary text.	1	16	1	2	2		12	Oral Survey

4.	Semiosphere: a semiotic approach to the study of human behavior	1	16	1	2	2		12	Oral Survey
5.	Computational linguistics and artificial intelligence.	1	16	1	2	2		12	Oral Survey
6.	Information technology in linguistics: areas of application	1	18	1	2	2		14	Oral Survey
7.	Modern digital linguistic resources	1	18	1	2	4		14	Oral Survey
8.	Computer implementations of hypertext.	1	18	1	2	4		14	Oral Survey
	Total number of academic hours in 1st term: 144		**136**	**8**	**16**	**18**		**102**	
9.	Digital educational technologies: conceptual and categorical framework	2	8	2	2	2		4	Oral Survey
10.	Information technology in linguistics: role, types, principles of construction and use	2	10	2	4	2		4	Oral Survey
11.	The use of modern information and communication technologies in linguistics: trends and software	2	8	1	2	2		4	Oral Survey
12.	Artificial intelligence and big data technologies in linguistic research	2	8	1	2	2		4	Oral Survey
13.	Virtual space and Internet technologies in linguistics	2	8	1	2	2		4	Oral Survey
14.	Assessing the economic efficiency of information technologies	2	11	1	2	4		5	Oral Survey
15.	Current trends in the development of the information and communications technology market	2	11	1	2	4		5	Case Study
	Total number of academic hours in 2nd term: 72		**64**		**16**	**18**		**30**	

Contents of Educational Material

Section 1. Types of sign systems and their characteristics, functioning and interaction
Types of sign systems. Natural signs and their systems. Properties of natural signs and their systems. Images and figurative systems. Characteristics of the image-sign. Comparison of various figurative signs with natural ones. Isomorphism of the image and types of isomorphism. Systems of the simplest figurative signs. Images externally similar to the depicted (iconic signs). Systems built mainly on icons. Conventional images. Ceremonial figurative systems. Figurative systems of the arts. Stages of development of sign systems of drawing and painting. Gestures and gestural systems. Patterns of figurative systems. Sign systems of notation. Cartography. Musical notation and dance notation system. Mathematical notation systems. General properties of notation systems. System of formalized signs. Basic signs of code systems. Metalanguage of code systems and their logic. Verification of the results of code operations. The place of codes among other sign systems.

Section 2. Language as a sign system. The nature of the linguistic sign
The symbolic nature of language. The concept of the linguistic sign by A.A. Potebnya and his school. Views on the linguistic sign by F.F. Fortunatov. Language as a system and structure. Natural language in relation to other sign systems. Natural and artificial languages. The system of writing linguistic texts. Stages of writing development. Signs of alphabetic writing. Properties of the linguistic sign. The problem of word meaning. The plane of expression and the plane of content. Denotation and connotation. Polysemy of the sign. Semiotic sequence of words. 2. Asymmetry of the plane of expression and the plane of content (F. de Saussure, L. Hjelmslev, W. Eco, E. Buissens, V.G. Gak, and others). Typology of linguistic signs (K. Büller, E. Benveniste, A. Martinet). Main functions

Section 3. Semiotic analysis of a literary text.
The relationship between discourse and intertext. Intertextuality of discourse. Scheme of semiotic analysis by Yu.S. Stepanov. "Semiological Adventure" by R. Barthes. "Genotext" and "pheno-text" by J. Kristeva. Semiotic analysis of fiction. Semantics, syntactics, pragmatics of compositional construction. Actantial theory of fiction text research (A.-J. Greimas, J. Fontagnes). Connotative semiology of R. Barthes. Categories of narrator and reader of fiction in the theory of W. Eco.

Section 4. Semiosphere: a semiotic approach to the study of human behavior
Semiotics of Culture. Recording and systematization of cultural facts through semiotic systems. The concept of semiotic space. Rhetoric and typology of cultures. Symbol in the cultural system. Symbol in a broad semiotic sense. Imagery of a symbol. Motivation of a symbol. Immanent polysemy of a symbol. Archetypality of a symbol. The place of a symbol in language and speech. Behavior as an object of semiotics. Cultural features of human behavior. Non-verbal semiotics and its subsystems (paralinguistics, kinesics, oculesics, haptics, gastics, oculesics, proxemics). National features of non-verbal behavior. Non-verbal communication for image creation.

Section 5. Computational linguistics and artificial intelligence.
Mathematical methods and models of applied linguistics. Computational linguistics and artificial intelligence. Development of information retrieval systems.

Section 6. Information technology in linguistics: areas of application
Applications of information technology in linguistics. Automatic text recognition. Automatic annotation and summarization.

Section 7. Modern digital linguistic resources

Modern digital linguistic resources (WordNet, FrameNet, Treebanks). Main types of computer syntactic resources. Dictionaries and text corpora. Computer implementations of hypertext.

Section 8. Computer implementations of hypertext.
"Plot grammars" or "narrative grammars." Computer implementations of hypertext.

Section 9. Digital educational technologies: conceptual and categorical framework
Information systems and technologies: conceptual and categorical apparatus, elements, and evolution of development. Basic principles of the construction and operation of modern information systems and technologies. Architecture (hardware and technical composition) of information systems and technologies. Properties of information systems. Classification of information systems and technologies (by scope of application; degree of automation of information processes; nature of the tasks to be solved; information processing mode; from a functional point of view; depending on the role of information; scalability of the information system). Legal and judicial aspects of the use of information systems and technologies in economics and business.

Section 10. Information technology in linguistics: role, types, principles of construction and use
Information technology in linguistics: role, types, principles of construction and use
The information space of linguistic research: levels and components. Basic principles of construction and implementation of information technology in linguistics. Decision support systems.

Section 11. The use of modern information and communication technologies in linguistics: trends and software
Modern software: types, software products, analysis of specialized software in linguistics
. Virtual space and Internet technologies in linguistics. Assessing the economic efficiency of information technologies.

Section 12. Artificial intelligence and big data technologies in linguistic research
Artificial intelligence and big data technologies in linguistic research. Concept and classification of intelligent information systems. The category of "knowledge" in the artificial intelligence system. The role of intelligent information systems in the management system; features of using intelligent information systems in linguistics. Information technologies for supporting management decisions: concept, distinctive characteristics, evolution of development. Characteristics of the key components of the decision support system. Information technologies of expert systems: concept, distinctive characteristics, evolution of development. The main components of the information technology of expert systems. Applied aspect of using information technologies of expert systems in the economy. Features of the formation of knowledge bases of enterprises and organizations. Characteristics of application packages for project examination, data analysis and forecasting, market forecasting. Management information systems

Section 13. Virtual space and Internet technologies in linguistics
Telecommunication technologies in economics: concept; types; basic topologies. Local, corporate, regional networks. Global information network. Main Internet services: e-mail, WWW resources, newsgroups, forums, chats. Types of information resources on the Internet. Characteristics of Internet information resources used in business practice and economic research. Features of the implementation of individual business transactions on the Internet. Electronic payment systems. Internet trading systems.

Section 14. Assessing the economic efficiency of information technologies
Features and specifics of assessing the economic efficiency of information systems and technologies. Components of the cost of an information system. Features of software pricing. The total cost of ownership (TCO) model for an information system: components and calculation technology. Directions for reducing TCO. The economic impact of implementing information technologies: direct economic impact; indirect effectiveness. Methodologies for assessing the economic efficiency of implementing information systems.

Section 15. Current trends in the development of the information and communications technology market
ICT market structure. Characteristics of the global and Russian ICT market development. Challenges for domestic enterprise development. Structure of the Russian ICT market. Some characteristics of the global ICT market. Investment dynamics in the Russian IT sector. IT capacity of Russian industries. Key indicators of ICT use by Russian enterprises. The role and key features of using the Internet in business practice. Sectoral structure of commercial use of the Internet. Features of the development of the global and domestic IT market during the crisis. Features of IT asset management in companies during the crisis.

REQUIREMENTS FOR DISCIPLINE ACHIEVEMENT

List of planned learning outcomes by discipline correlated with indicators of achievement

Competence	**Indicators of achievement**	**Discipline outcomes**
ОПК-6 Is able to apply modern technologies in the implementation of data collection, processing and interpretation of empirical research; create and format scientific documentation	**ИДК $_{ОПК6.1}$** Is proficient in word, tabular and graphic information processing technologies; knows how to use specialized software in professional activity	**ИДК $_{ОПК6.1}$** Know: the main modern technologies in a foreign language to carry out information collection and processing. Be able to: choose the necessary technologies for processing text, tabular and graphic information in accordance with the professional and academic situation. Master: basic technologies for information exchange in professional and academic environments.
ОПК-7 Able to work with the main information-search and expert systems, knowledge presentation systems and verbal information processing	**ИДК $_{ОПК7.1.}$** Demonstrates how to use local and global computer networks. Can work with distributed databases and knowledge	**ИДК $_{ОПК7.1}$** Know: basic information-search and expert systems for processing verbal information. Be able to: Use local and global computer networks in professional and academic communication. Master: database distribution skills

Разработчик:

_____	зав. кафедрой европейских языков	И. С. Шильникова
(подпись)	(занимаемая должность)	(Ф.И.О.)

Программа составлена в соответствии с требованиями ФГОС ВО по направлению и направленности подготовки 45.04.02 Лингвистика «Проектирование цифрового лингвистического образовательного контента / Digital Linguistic Educational Content Design».

Программа рассмотрена на заседании кафедры европейских языков
« 10 » марта 2026 г. Протокол № 7.

Зав. кафедрой _____ И. С. Шильникова