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Dean of the Faculty CS&VT

Ibyshev E.C.

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CATALOG OF ELECTIVE DISCIPLINES

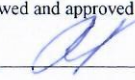
For students in the direction of preparation 8D061 Information and communication technologies

Brief description of the elective disciplines of the educational program

EPG	EP	Form of education	The name of discipline	Code of subject	Discipline cycle	Component	Number of credits	Level of training	Cafedra	Course	Academic period	Pre-requisites	Post-requisites	Brief content of the discipline	Key learning outcomes	Name of the alternative discipline
D094 - «Information technology»	8D06101 - «Big Data Analytics»	Full-time (PhD 3 years) semester	Corporate knowledge management technologies	TUKZ 7303	AS	Elective subjects	5.0	Doctoral studies by specialization (scientific & pedagogical direction)	Information systems	1	1	Methods of scientific researches	Computer and mathematical modeling in scientific research	A knowledge-based economy. Intellectual capital of the company. Knowledge as an object of management in organizations. Knowledge management as a management function. Information technologies of knowledge management. Communication and marketing technologies in knowledge management. Methods of knowledge extraction and structuring. Knowledge representation models. Expert systems and knowledge bases. Information systems that ensure the transfer of knowledge into a manageable form in the enterprise. Modern concepts of knowledge management technologies development at enterprises.	A knowledge-based economy. Intellectual capital of the company. Knowledge as an object of management in organizations. Knowledge management as a management function. Information technologies of knowledge management. Communication and marketing technologies in knowledge management. Methods of knowledge extraction and structuring. Knowledge representation models. Expert systems and knowledge bases. Information systems that ensure the transfer of knowledge into a manageable form in the enterprise. Modern concepts of knowledge management technologies development at enterprises.	Semantic technologies
D094 - «Information technology»	8D06101 - «Big Data Analytics»	Full-time (PhD 3 years) semester	Semantic technologies	ST 7305	AS	Elective subjects	5.0	Doctoral studies by specialization (scientific & pedagogical direction)	Information systems	1	1	Methods of scientific researches	Computer and mathematical modeling in scientific research	The concept of semantic technologies. Ontologies in linguistic research and applied activity. Features of thesauruses of the Wordnet type. Creating a Wordnet thesaurus. The use of thesauri in information retrieval tasks and other tasks. Development of information retrieval technologies in a specific language. Models of knowledge representation in intelligent systems. Markup of the corpus using a semantic dictionary. The relationship of different types of linguistic markup. Features of Semantic Web technologies. Application of Semantic Web technologies.	The concept of semantic technologies. Automatic processing of semantic information. Potential possibilities of semantic information accounting in automatic text processing systems. Difficulties in automating semantics analysis as a consequence of the peculiarities of the semantic level of the language. Ontologies in linguistic research and applied activity. Thesauruses and their computer versions. Features of thesauruses of the Wordnet type. Creating a Wordnet thesaurus. The use of thesauri in information retrieval tasks and other tasks. Development of information retrieval technologies in a specific language. Models of knowledge representation in intelligent systems. Natural Language Processing. No. Semantic markup as one of the varieties of corpus linguistic markup. Taxonomic markup, thematic markup. Markup of the corpus using a semantic dictionary. The relationship of different types of linguistic markup. Features of Semantic Web technologies. Application of Semantic Web technologies. Processing of semantic information in the process of information retrieval.	Corporate knowledge management technologies

D094 - «Information technology»	8D06101 - «Big Data Analytics»	Full-time (PhD 3 years) semester	Intelligent data analysis in information systems	IADIS 7206	BS	Elective subjects	5 0	Doctoral studies by specialization (scientific & pedagogical direction)	Information systems	1	2	Methods of scientific researches	Computer and mathematical modeling in scientific research	Formation of the skills of doctoral students working with modern tools for analyzing and visualizing data, methods and algorithms of data mining, as well as their use in scientific research and professional activities	To apply Big data-based analytics toolkits and enterprise decision support. To use in practice the various distributions of the Hadoop platform, «opensource» and commercial tools, etc., used for storing, processing and analyzing big data. To apply tools for constructing information and analytical systems	Data Mining Technology and Methods
D094 - «Information technology»	8D06101 - «Big Data Analytics»	Full-time (PhD 3 years) semester	Data Mining Technology and Methods	TMDM 7212	BS	Elective subjects	5 0	Doctoral studies by specialization (scientific & pedagogical direction)	Information systems	1	2	Methods of scientific researches	Computer and mathematical modeling in scientific research	Comparison of statistics, Machine Learning and Data Mining, Comparison of forecasting and classification tasks, Application of Data Mining to solve business problems, for scientific research. Visualization of Data Mining tools and models, An integrated approach to the implementation of Data Mining, OLAP and data warehouses in the DSS, Integration of OLAP and Data Mining, Classification of Data Mining tools; Specialized data storage	Comparison of statistics, Machine Learning and Data Mining, Data Mining as part of the information technology market; Methods and stages of Data Mining, Data Mining Tasks, Data Mining Tasks classification and clustering, forecasting and visualization, Comparison of forecasting and classification tasks, Application of Data Mining to solve business problems, for scientific research. Descriptive statistics, Neural networks; Neural network models; New algorithms and some modifications of cluster analysis algorithms, Limits of support and reliability of the associative rule, Methods of visual representation of data, Visualization of Data Mining tools and models; An integrated approach to the implementation of Data Mining, OLAP and data warehouses in the DSS; Integration of OLAP and Data Mining, Errors in the Data Mining process, Data Mining Standards, Data Mining Tools market, Classification of Data Mining tools; Data Mining software for solving evaluation tasks and forecasting, for solving clustering and segmentation problems; for solving classification problems; Specialized data storage	Intelligent data analysis in information systems

The catalog of elective disciplines was reviewed and approved by the faculty council, protocol № 10.1 "28" 08 2023 y.

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