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**Образовательная программа «Pedagogy in Engineering» в рамках
направления подготовки 44.04.02 Педагогика и психология**

**Федеральное государственное автономное образовательное учреждение
высшего образования «Российский университет дружбы народов имени Патриса
Лумумбы»**

АННОТАЦИИ ДИСЦИПЛИН (МОДУЛЕЙ) ОП ВО

**Изучение дисциплин ведется в рамках освоения основной профессиональной
образовательной программы высшего образования (ОП ВО)
«Pedagogy in Engineering»,
реализуемой по направлению подготовки: 44.04.02 Педагогика и психология**

Наименование дисциплины	Philosophy of Education and Science / Философия образования и науки
Объём дисциплины	6 ЗЕ (216 ч.)
Содержание дисциплины	
Разделы	Темы
<p>Philosophy history and issues of education</p> <p>History of philosophy of science; the unity of the historical development of the philosophy of science and the philosophy of education. The nature of scientific knowledge and scientific criteria.</p> <p>Philosophical aspects of education and upbringing</p> <p>Axiology of education</p> <p>Analysis of modern educational philosophies and their impact on science education</p>	<p>The subject and functions of the philosophy of science and education. The concept and essence of the system in philosophy. Philosophy of education as a subsystem of general philosophy. Awareness of the problems of the development of education from the standpoint of philosophy. The Role of Education in the Historical Process.</p> <p>Science as a socio-cultural phenomenon and a social institution. Philosophical and pedagogical aspects of natural science education. Structure and features of scientific knowledge; demarcation of science. Scientific criteria.</p> <p>Values and goals in education. Values of essentialism, existentialism, classical realism in education. Values of development and growth. Values of Lifelong Learning.</p> <p>Development of Natural Science Education: Historical and Philosophical Aspect. Formation, Development and Evolution as Philosophical Categories.</p> <p>Culture and education. Categories of cognition and creativity in the philosophy of education. Modeling in Science and Philosophy. Philosophical problems of natural and socio-humanitarian sciences.</p>

Наименование дисциплины	Professional Russian (as a Foreign Language)
Объём дисциплины	6 ЗЕ (216 ч.)
Содержание дисциплины	
Разделы	Темы
<p>Institute of Science and Technology.</p> <p>Specialized culture. Reports. Article. Patents. Business Letter.</p>	<p>Specifics of the functioning of the Institute of Science and Technology in Russia. The norms of communication in the professional scientific and technical sphere are also considered. Formation of the ability to understand oral reports / long speeches in a foreign language on engineering topics. Written foreign language general scientific / highly specialized articles in the field of engineering. Foreign language patents in the field of engineering. Structure and types of business letters.</p>

<p>Prepared/unprepared conversation. Reputable scientists in the field of engineering. Discussion. Argumentation. Message. Scientific and technical concepts in professionally oriented discourse.</p> <p>The Logic of Scientific Exposition. Text abstracting. The main idea and the author's attitude. Abstract. Review. Business conversation.</p>	<p>An unprepared conversation on a general scientific/highly specialized topic in the field of engineering. Well-known scientists in the field of science and technology. The main directions of development of science and techniques in the field of engineering. Discussions on general scientific/highly specialized issues. Expressing one's own position and logical argumentation in a foreign language. General Science Report in a Foreign Language Scientific and Technical Concepts in Foreign Language and Russian Text in the Field of Engineering.</p> <p>Composition, motifs, pragmatic attitude of a foreign language scientific text. Key segments of text. Receiving information It's a good thing. Abstract. Review. The main idea of the text. Author's relation To the topic of the text. Abstracting of foreign text in the area Engineering. Ability to determine your attitude to the content Read. Presentation of development achievements in the field of Inge Of course (review). Professional/Scientific Conversation/ of a production nature.</p>
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Наименование дисциплины	Cultural-historical and Activity Approach in Psychology and Education
Объём дисциплины	3 ЗЕ (108 ч.)
Содержание дисциплины	
Разделы	Темы
<p>Education as a way of becoming a person in culture.</p> <p>Learning concepts and their psychological foundations</p> <p>Cultural and historical concept of L.S. Vygotsky and its impact on educational practice</p> <p>Activity-based learning theory.</p>	<p>The concept and characteristics of higher mental functions. Higher mental functions.</p> <p>Historical prerequisites for the formation of the concept of L.S. Vygotsky. A system of concepts and principles. Laws and stages of development of higher mental functions. Iconic mediation. Zone of proximal development. Interiorization.</p> <p>Mental development of the child. The concept of social development situations. Development crisis. Factors personality formation. Mental neoplasms.</p> <p>Leading activity.</p> <p>The didactic meaning of A.N. Leontiev's activity theory</p> <p>Activity Theory of A. A. Leontiev and S. A. Rubinstein.</p> <p>Activity approach to the analysis of the child's psyche.</p> <p>The concept of activity-based learning of D. B. Elkonin and V. V. Davydov</p>

Наименование дисциплины	Methodology of scientific research
Объём дисциплины	7 ЗЕ (252 с.)
Содержание дисциплины	
Разделы	Темы
<p>General characteristics of the methodology of pedagogical research</p> <p>Methodological approaches and basis of research</p> <p>Methodology of psychological and pedagogical research</p> <p>Statistical methods and means of formalization</p> <p>Technology of organization of pedagogical research.</p> <p>Technologies of design and presentation of its results</p>	<p>Scientific pedagogical research activity in the process of education. The structure of scientific knowledge. Specificity of pedagogy as a science. Forms of organization of scientific knowledge. Sources and conditions of research search. The general concept of cognition, research, research activities.</p> <p>Basic concepts: problem, object, subject and goals of research. Relationships, relationships of the problem, subject and purpose of the study.</p> <p>Methods of psychological and pedagogical research. Research methods and techniques. Methods of empirical psychological and pedagogical research. Methods of theoretical research. Statistical methods and means of formalization.</p> <p>Logic and structure of psychological and pedagogical research. Specificity of psychological and pedagogical research.</p> <p>Registration of the results of the study.</p> <p>Scientific text: characteristics. Types, forms of presentation.</p> <p>Dissertation – a specific type of scientific text.</p>

Наименование дисциплины	Forming of a Psychologically Comfortable and Safe Educational Environment
Объём дисциплины	3 ЗЕ (108 ч.)
Содержание дисциплины	
Разделы	Темы
<p>Formation of a psychologically comfortable and safe educational environment.</p> <p>Educational environment (EE) and educational space.</p> <p>Structural model of a psychologically safe educational environment.</p> <p>Psychological safety and comfort in the educational environment.</p> <p>Examination of the psychological safety of the EE.</p>	<p>Typology of the educational environment. Models of the educational environment. Characteristics of the educational environment. Structure of the educational environment. Theories of environmental determination. Environmental approach in pedagogy.</p> <p>Modality of the educational environment.</p> <p>The concepts of "safety" and "psychological safety" in the educational environment.</p> <p>The concept of psychological safety of the educational environment (I. A. Baeva). Nonviolent interaction in pedagogical interaction.</p> <p>Categories of the concept of psychological safety of the educational environment. The concept and types of bullying</p> <p>The concept of psychological expertise. Criteria for assessing the safety of the educational environment: an integral indicator of the attitude to the environment; psychological safety index; satisfaction index.</p>

Наименование дисциплины	Design and Expertise of Educational Systems
Объём дисциплины *	2 ЗЕ (72 ч.)
Содержание дисциплины	
Разделы	Темы
Educational system: concept and general characteristics	Educational systems. Systematic approach. Advantages and limitations of a systematic approach. Signs of the educational system.
Design of educational systems	The process system as a set of objects: input, process, output, constraints and feedback. Modern educational systems. Theoretical foundations of pedagogical design. Subjects and objects of project activity. Types of pedagogical projects.
Psychological and pedagogical expertise	The concepts of "expertise", "assessment", "monitoring", their relationship and fundamental differences. Observance of the rule of law, observance of human rights and freedoms during the examination; the principle of independence of the expert, objectivity. Principles: competence, informed consent, openness, publicity of expert actions and decisions, complexity and cultural compatibility. Humanitarian expertise of education.

Наименование дисциплины	Innovative technologies in engineering education
Объём дисциплины *	5 ЗЕ (180 ч.)
Содержание дисциплины	
Разделы	Темы
Pedagogy as a science.	Subject of pedagogical science, its basic categories.
Innovative approach in building education.	The concept of an innovative approach. The use of an innovative approach in building the process of education (training).
Methods of designing the main educational and additional educational programs	Principles of innovative construction of education. Regulatory framework of the educational process in a technical university Organizational forms of training. Development of creative thinking in the process of training and education of an engineer. Application of information and communication technologies in the system of continuous training of a specialist engineer Concept and classification of methods for the development of basic educational and additional engineering programs

Наименование	Digital education
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дисциплины		
Объём дисциплины *		3 ЗЕ (108 ч.)
Содержание дисциплины		
Разделы	Темы	
Digital Imaging Environmenta	The concept of "digital educational environment". A set of ICT tools.	
Digital Content Production Implementation and use of digital digital content in the study of engineering disciplines	Use of ICT tools in the educational process. Construction of information and educational space. Types of digital content. Ways to create digital content Features of the organization of the educational process using ICT in the study of engineering disciplines. Conditions for the implementation of the educational process using ICT. Interaction of participants in the educational process using ICT. Forms of interaction of participants in the educational process using innovative technologies in teaching.	

Наименование дисциплины	Psychological - pedagogical technologies in education	
Объём дисциплины *	5 ЗЕ (180 ч.)	
Содержание дисциплины		
Разделы	Темы	
Psychological and pedagogical technologies in pedagogy Methodology and types of teaching technologies Psychological and pedagogical technologies for the study of individual psychological characteristics Principles of development of psychological and pedagogical technologies of teaching Psychological and pedagogical technologies of diagnostics of development of intellectual and professional abilities	Goals and objectives of the discipline. Structure of psychological and pedagogical technologies in pedagogy. Methods and types of training technologies. Specificity of psychological and pedagogical technologies in the training of engineers. Psychological and pedagogical technologies for the study of individual psychological characteristics of students and teachers, their importance in the organization of the educational process. Determination of the inclinations of students to subject, professional activities, including engineering and technical, engineering and humanitarian, their importance in the formation of motivation for educational and future professional activities. Taking into account the individual characteristics of students when building an educational program and an individual learning trajectory. Interaction of participants in the educational process, taking into account the specifics of the study of engineering disciplines. Principles of development, self-development and health of the individual. Didactic principles of teaching, their implementation in the educational process: scientific, conscientiousness and activity, unity of theory and practice, visibility, accessibility, systematicity, strength of knowledge acquisition, individual approach. Objective methods and dialogic methods. Creation of optimal conditions for obtaining diagnostically important information. Projective Techniques.	

Наименование	Management of educational process
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дисциплины	
Объём дисциплины *	4 ЗЕ (144 ч.)
Содержание дисциплины	
Разделы	Темы
Monitoring of the learning process Criteria and forms for assessing learning outcomes Psychological and pedagogical features of the student's personality Development and implementation of programs to overcome difficulties in the study of engineering disciplines	Monitoring the state of the educational process at each stage of training. Effectiveness of forms and methods of teaching. Trends in changes in the organization of the educational process, their dependence on certain factors. Criteria for evaluating the study of engineering disciplines Forms of evaluation of the results of mastering engineering disciplines Typology of psychological and pedagogical personality types of students Building a Student-Centered Learning Process Stages of psychological and pedagogical monitoring in the monitoring and development of programs for overcoming difficulties in the study of engineering disciplines Regulatory and installation stage. Analytical and diagnostic stage Prognostic stage. Activity-technological stage. Intermediate diagnostic stage. Final diagnostic stage.

	Theory and practice of technical subjects tutorial
Объём дисциплины *	4 ЗЕ (144 ч.)
Содержание дисциплины	
Разделы	Темы
Methods and forms of teaching general technical disciplines Staffing of the educational process in the study of general technical disciplines Requirements for educational and methodological support of teaching general technical disciplines The role of general technical disciplines in the professional development of an engineer Methods of teaching general technical disciplines	Material and technical and information support for teaching general technical disciplines Means, methods and forms of training. Requirements for the scientific and pedagogical staff that implements the training of students in general technical disciplines The content of the main professional educational program. Work program and fond evaluation tools of discipline. The specifics of seminars, practical classes, laboratory work provided for by the curriculum in the study of general technical disciplines. Modern production and communication technologies in training. Participation in the educational process of teachers of practitioners. Social and professional adaptation of students. The role of studying general technical disciplines. Competence approach to the development of educational and methodological material for the study of general technical disciplines Stages of preparation of the teacher for classes in general technical disciplines. Development of the work program of the discipline for the entire period of study. Development of a lesson plan for a specific topic. Lectures, lectures and seminars. Labs Development of methodological materials to ensure independent work of students. Development of evaluation tools for self-examination, intermediate and final certification.

	Theory and practice of engineering education
Объём дисциплины *	2 ЗЕ (72 ч.)
Содержание дисциплины	
Разделы	Темы
Theoretical foundations of vocational training engineer-pedagogue Practice-oriented methods of teaching disciplines to students of engineering specialties Professional training of engineers-pedagogues in a technical university on the basis of the relationship between psychological, pedagogical and special disciplines	Socio-pedagogical conditionality of professional training of a teacher of special and technical disciplines. Psychological and pedagogical foundations of the formation of professional skills of an engineer-pedagogue. Theoretical aspects of the relationship between psychological- pedagogical and special disciplines in the training of engineers-pedagogues. Theoretical approaches to the concept of professional training of an engineer-teacher in a technical university Theoretical approaches to vocational training The concept of professional training of an engineer-teacher in a technical university Objectives, content and structure of professional training of an engineer-pedagogue Methods of organizing the educational process of professional training of an engineer-pedagogue using a system that ensures the interconnection of psychological, pedagogical and special disciplines Tasks and main stages of the pedagogical experiment. Content, methods of conduct and results of the pedagogical experiment.

Наименование дисциплины	Digital production technologies
Объём дисциплины *	6 ЗЕ (216 ч.)
Содержание дисциплины	
Разделы	Темы
Digital economy: concept, goals and objectives, structure Trends and prospects for the development of the digital economy Features of management and interaction in the digital economy Industrial Internet. Big data. Robotics and sensory components. Virtual and augmented reality technologies. Wireless technologies. Neurotechnologies and artificial intelligence. The life cycle of the introduction of digital technologies. Assessment of the economic efficiency of the introduction of digital technologies. The experience of foreign countries in the development of the digital economy.	Basic concepts of the digital economy. Goals and objectives of the digital economy. Global trends of the digital economy. Legal regulation of the digital economy. Digitalization as a factor in the formation of new economic technologies Architecture of management and regulation systems in the digital economy. The Industrial Internet: The Definition and Evolution of Technology. Data mining. Machine learning. Wireless technologies. Product Lifecycle Management. Simulation and supercomputer modeling of products. Additive technologies and rapid prototyping. Methods for assessing digital transformation. Digital Transformation Assessment Indices.

	Innovation technologies of hi-tech branches
Объём дисциплины *	6 ЗЕ (216 час.)

Содержание дисциплины	
Разделы	Темы
<p>Innovations as the content of a knowledge-intensive industry and a factor of economic growth.</p> <p>Macroeconomic factors and trends affecting the development strategy of high-tech enterprises.</p> <p>The system of dynamic optimization of economic and technological development of a high-tech enterprise</p>	<p>The term "science-intensive", modern approaches to its understanding. Classification of knowledge-intensive industries. Innovation process as an object of management. Innovation process: concept, structure, content of works in high-tech industries.</p> <p>Preliminary analysis of innovations and preparation of a business pricing plan. Macroeconomic prerequisites of innovation. Product selection and competitive strategy. Evaluation of sales markets. Evaluation of competitors. Product life cycle. Analysis of trends in the development of industries. The place of the enterprise in the industry. Justification and analysis of the future marketing strategy: the main elements of the marketing plan, the rationale for the policy.</p> <p>Structure of the high-tech sector of the Russian economy. Features of market relations of high-tech firms. Models of supply, demand and price.</p> <p>Factors affecting the development strategy of high-tech enterprises. Opportunities of economic science and successful practices of management of high-tech enterprises.</p> <p>The concept and patterns of development of the economic and technological complex of firms. Origin of firms and their development. Staffing of high tech productions.</p>

Содержание дисциплины	
Разделы	Темы
Planning of mixed and on-line courses	
Объём дисциплины *	3 ЗЕ (108 час.)
<p>Blended learning</p> <p>Stages of course development</p> <p>Online services</p> <p>Formative assessment</p> <p>Course planning and development in blended learning</p>	<p>The concept of "blended learning". Modern information technologies and human relations in the educational process. Elements of high-quality blended learning. Blended Learning Models</p> <p>Design learning outcomes. Development of evaluation activities. Content preparation. Development of formative assessment.</p> <p>LMS. Video. Presentation. Mind Map. Tests. Polls. Reflection. Project views.</p> <p>Methods, tools and services for organizing formative assessment</p> <p>Development of an educational topic on blended learning technology</p>

Содержание дисциплины	
Разделы	Темы
Design of an educational program	
Объём дисциплины *	3 ЗЕ (108 час.)
	The national, operational, regional level of regulatory and legal support.

Regulatory and legal support of educational activities in the Russian Federation	Institutional level. Local regulations. Federal state educational standards.
Licensing and accreditation of educational activities in the Russian Federation	Licensing of educational activities. Accreditation of educational activities.
Levels and types of educational programs	Educational program - a set of basic characteristics of education. Basic general education programs; Main professional educational programs: a) educational programs of secondary vocational education; b) educational programs of higher education; Additional educational programs: a) additional general education programs - additional general developmental programs, additional pre-professional programs; b) additional professional programs - advanced training programs, professional retraining programs.

	Technological entrepreneurship
Объём дисциплины *	3 ЗЕ (108 час.)
Содержание дисциплины	
Разделы	Темы
Systems Thinking and Engineering Marketing of innovative products Launch and development of venture projects	Practices of model-oriented system engineering: system concept development, requirements engineering, system architecture development, system design, implementation, integration, validation and acceptance. The relationship between engineering, management and entrepreneurship. Brainstorming Fronting. Benchmarking (analogue method). Search by industry to enter the product.
Agile Project Management	Analysis of business systems in core industries.
Commercialization of R&D results	Problems and prospects for the development of the venture capital industry. Principles of venture projects. Project sprints. Scrum and Kanban. Sources of funding R&D. Stages of implementation of the results R&D. The main barriers to implementing R&D results.

	Management of innovative activity at enterprise
Объём дисциплины *	3 ЗЕ (108 час.)
Содержание дисциплины	
Разделы	Темы
Theoretical and	Fundamentals of Innovation Management in Production.

methodological aspects of innovation activity. Fundamentals of Innovation Management. Innovation management, the role of innovation	The role and functions of innovation in modern society. Technological modes in the development of innovation management. Innovation process, stages of formation. Functions of innovation activity. Project approach to the organization of innovation activities. Innovation management. Efficiency of innovation activity
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	Technologies of cross-cultural education
Объём дисциплины *	4 ЗЕ (144 час.)
Содержание дисциплины	
Разделы	Темы
Specifics of cross-cultural communication Classification of crops Characteristics of organizational culture Clustering of crops Мультикультурное взаимодействие	<p>Culture and behavior: factors of behavior, the main characteristics of empathy. Culture and values: four main spheres of cultural values, forms of cultural values. The concept and basics of cross-cultural communication.</p> <p>Hofstede indices (masculinity, femininity, avoidance of uncertainty, individualism - collectivism, distance of power) and their forms of manifestation Measurement of business cultures in the model of G. Hofstede.</p> <p>Types of organizational cultures. Classifications of C. Handley and F. Trompenaars Types of Organizational Cultures. Classifications of C. Handley and F. Trompenaars Factors in the formation of leadership styles: the system of values, the intensity of needs, the picture of the world, the process of cognition, attitude to risk, interpersonal communication. Leadership in the cross-cultural aspect. Leadership models. Global organizations. Global leadership and changing knowledge about cultural differences.</p> <p>Clustering of Ronen and Schenkar. Trompenaars clustering. Lewis's Model of Cultural Types. The main characteristics of the Romanesque model. The main characteristics of the German model. Characteristics of the European cluster, the Anglo-Saxon cluster, the Scandinavian cluster, the Southern European cluster. The approach of R. Gestelend.</p> <p>Multicultural interaction in education. The process of acculturation. Modern models of management of cultural diversity. The work of a multicultural team. Cross-cultural synergy. Strategies of cross-cultural interaction in education. Acculturation process.</p>

	Management of conflicts in educational environment /
Объём дисциплины *	4 ЗЕ (144 час.)
Содержание дисциплины	
Разделы	Темы
Sources, objective and subjective reasons the occurrence of conflict	Causes of conflict. Objective, organizational-managerial, socio-psychological, personal. System-structural analysis in understanding the nature of the conflict of T. Parsons. "The Functions of Social Conflict" by

<p>situations.</p> <p>Structural model of conflict</p> <p>Functions of conflict, their positive and negative consequences</p> <p>Strategy of behavior in conflict situations</p> <p>Basics of conflict prevention</p>	<p>Lewis Coser. Conflict theory and functions of social conflict. Useful functions of conflict. Operationalizing the concept of functional conflict. Dahrendorf's Conflict Theory.</p> <p>Structural elements of the conflict: subjects, objects, object. Stages of the conflict. Conflict situation, incident. Object in conflictology. The subject of the study of conflictology.</p> <p>Productive and destructive, situational and positional, short-term and protracted conflicts. Motivational, cognitive, role conflicts. Typology of conflicts by A.Deutsch. Classification of conflicts according to the direction of interaction: vertical, horizontal and mixed conflicts. Classification of conflicts by the nature of causes: objective and subjective conflicts. Their features, causes. Classification of conflicts by the nature of occurrence: business and personal-emotional conflicts. Sources of business and personality conflicts.</p> <p>Strategies of conflict behavior: evasion, adaptation, confrontation, cooperation, compromise.</p> <p>Conflict forecasting. Conflict prevention technology. Stages of conflict management. Models of conflict termination: extinction, resolution, settlement, escalation into another conflict.</p> <p>Strategies for ending the conflict: evasion, adaptation, compromise, confrontation, coercion (suppression).</p>
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Руководитель ОП ВО,

к.э.н., доцент



Ковалева Е.А.