

CATALOG OF ELECTIVE DISCIPLINES

«7M05202-Geography (science)»

MASTER'S LEVEL

Discipline cycle	The name of the disciplines and their main sections	Labor input (ECTS)
BD	CYCLE OF BASIC DISCIPLINES (BD)	
1. 19038	Organization and Planning of research work	5
	Understands and has an idea about the object and subject of study of this discipline, its main goals and objectives, methods of organizing scientific research and scientific research, methods of searching for sources containing scientific information on the topic of research and in their specialty. He has an idea of the state and dynamics of the development of scientific research in Kazakhstan and abroad.	
	Theory and practice of geographical research	
	The basic concepts of scientific research. Methodological foundations of geographical research. Natural and natural-anthropogenic geosystems as an object of research. Classification of methods of physical and geographical research. Landscape research methods. Organization chart of research. Landscape-geochemical research methods. Landscape-geophysical research methods. Geographical assessment and standardization of environmental quality.	
2. 19044	System analysis of the natural-territorial complex	5
	Theoretical foundations of the systematic analysis of the PTC, teaching methods for the study of geomorphological systems and their use in practice. The functions and significance of natural and natural-anthropogenic systems. Methods of managing and restoring geomorphological systems under technogenic impacts on them. General analysis of the natural-territorial complex.	
	Earth's geospheres and human activities	
	The effect of human activity on the atmosphere. Problems of the modern climate. The effect of human activity on the hydrosphere. Surface water problems. Geoecological problems of soils and land resources. Man and the lithosphere. Man and the biosphere. Geoecological aspects of natural-technogenic systems. Anthropogenic landscapes.	
3. 19052	Geographical basis of the competitiveness of the countries of the world	5
	The main principles, indicators and mechanisms of competitiveness of the countries of the world. Types of competitiveness. Factors affecting the competitiveness of countries. The competitiveness of Kazakhstan in the foreign market. Competitiveness of countries and regions of the world; parameters and indicators of competitiveness, integrated indicators of the competitiveness of the countries of the world. Rating of countries in terms of global competitiveness. Comparative analysis of the countries of the world by index.	
	Global issues of today	
	Nature and civilization. The concept of global problems, their types and relationships. Geographical aspects of the global problems of mankind in the past and present. Raw materials, demographic, food, environmental and other problems, as especially priority: solutions. Geographical aspects of the quality of life of the population. The role of geography in solving the global problems of our time.	
PD 3	CYCLE OF PROFILING DISCIPLINES (PD)	

1. 19054	<p>Technology of learning natural sciences</p> <p>Theoretical foundations of modern pedagogical technologies. Classification of teaching technology of natural disciplines, the nature and ways of implementing problem-based learning of geography, a system of teaching tools of natural disciplines, their didactic features and functions. The use of modern pedagogical technologies in the theory and practice of the university. The activities of the university in the management of new educational technologies.</p> <p>The technology of teaching geography in secondary vocational schools and universities</p> <p>The content and structure of geographical education in secondary secondary and higher education institutions. Geography Learning Tools. Forms of the organization of teaching geography. Extracurricular activities. Training and field practices. The technology of teaching geography. Conceptual foundations of modern pedagogical technologies. Learning Technologies. Traditional pedagogical technologies in teaching geography. Innovative pedagogical technologies in teaching geography.</p>	5
2. 19062	<p>Geoinformation support of research</p> <p>GIS hardware and software development methods. Creation of databases, digital maps, applications. Overlay operations using data obtained from an electronic card. Using ArcCatalog and ArcMap. Statistical analysis, image results in three-dimensional space. Statistically significant surfaces using the Geostatistical Analyst module. Using various GIS features to visualize research.</p> <p>Modern scientific methods of geographical research</p> <p>Introduction to the basics of research. Structural problems of the organization of scientific research and the conditions for their organization. Fundamentals of scientific research. Varieties of scientific research. Patent Science and the Basics of Scientific Research. Accounting for the value of fixed assets.</p>	5
3. 19073	<p>Theoretical and methodological problems of geography</p> <p>The historical stages of the development of science as the basis for the formation of the theory and methodology of science. The hierarchy of scientific knowledge: theories, concepts, and hypotheses. The position of geography in the system of scientific knowledge. Metatheoretical, methodological and epistemological problems of geography. Theoretical and applied problems in geography. Problems of the structure of economic and social geography. Problems of interaction between society and nature in the geospace of geo-versum.</p> <p>History and Methodology of Geographical Science</p> <p>Modern ideas about the interaction of social, natural and technical sciences. The fundamental principles of the theoretical and practical integrity of geographical science. Social functions of geographical sciences. Constructive tasks of geography: the importance of geographical sciences in the formation of the territorial organization of society, the scientific foundations of rational nature management, and targeted programs for the socio-economic development of various regions.</p>	5
4. 19077	<p>Forecasting and modeling in geography</p>	5
	<p>Fundamentals of modeling in geography. Geographical models and modeling processes. Classification of models. Features of mathematical cartographic modeling. The use of geographic information systems in modeling. Models of industrial placement. Models of the geography of cities. Structural analysis of natural-territorial systems. Risk assessment in geographic forecasting. Practical construction and analysis of models.</p>	

	Mathematical and cartographic modeling	
	Theoretical foundations of mathematical cartographic modeling. Basic concepts and stages of modeling. Classification of mathematical cartographic models. Mathematical methods in the construction of models of the structure and relationships of phenomena. The Traveling Salesman Problem and its Application in Objects Spatial Models. Studying models of the dynamics of phenomena.	
PD 3	CYCLE OF PROFILING DISCIPLINES (PD)	
1. 19109	Project Management	5
	The project as an object of management. Methodology and organization of project management. Project preparation and planning. Execution of the project. Completion and evaluation of the effectiveness of project management. Project management information systems. Features of the management of scientific projects. Project quality management.	
	GIS Project Management	
	The main content and structure of the GIS project management process. Criteria for the development and implementation of GIS projects. The place and role of managing a GIS project. Feasibility study and budgeting of the GIS project. Methods and technologies for implementing an international GIS project. GIS project life cycle. Systematization of geospatial data of a GIS project.	
2. 19117	Energy, Green Economy and Management	
	Overview of green growth strategy in Kazakhstan. Green Growth Initiatives in Kazakhstan. Green economy development trends in the context of globalization. Renewable energy. Energy saving and energy efficiency. Environmentally friendly transport in Kazakhstan Waste management. Development of sustainable and efficient organic agriculture. Rational use of water resources and other renewable types of resources.	5
	Spatial Planning and Environmental Management	
	The concept and essence of territorial planning. Comprehensive assessment of the territory as the basis of spatial planning. The main aspects of spatial planning by nature management. The main components of the mechanism of environmental management. Natural resource potential of the territory. Water and soil-land resources, their location and possibilities of use. Subsoil resources, plant and animal resources, their location and possibilities of use.	
3. 19124	Patterns of the structure and development of the geographical environment	5
	The geographical environment is one of the most important concepts of modern geography. An open dynamic system that develops in space and time. The material base for the development of society. Functional modification of the geographical environment. The interaction of the natural-geographical environment and society is an important methodological problem.	
	Earth evolution and geographic patterns	
	Earth in the solar system. The development of the geographical envelope. Kurgovorot substance and energy. Differentiation of the geographical envelope. Landscape-forming processes. Cosmogonic hypotheses. Theories of the global evolution of the Earth. Mobilism. The law of zoning, azanality and intrazonality, and their manifestations. Sectorism.	
4. 19136	Modern geoeconomic and geopolitical processes	5
	The theoretical foundations of geoeconomics. Geo-economic framework of the global economy. World currency system. International associations and	

	<p>organizations. Geopolitical processes in the modern world. The relationship of geopolitical and geoeconomic processes during the transition to a multipolar world order. Geopolitical problems of the East and West. Geopolitical scenarios for the development of the world community.</p>	
	<p>Geopolitics and international political factors</p>	
	<p>The formation of classical geopolitical concepts, the emergence and evolution of traditional geopolitics. Geographical determinism as a fundamental principle of traditional geopolitics. The main nodes of international contradictions and conflicts in the post-bipolar world. Global geopolitical and geoeconomic challenges of our time.</p>	