



KAZAKH NATIONAL WOMEN'S TEACHER TRAINING UNIVERSITY  
DEPARTMENT OF NATURAL SCIENCES

7M01506-Geography  
Catalog of elective disciplines

**CONTENT**

<b>№</b>	<b>Title</b>	<b>Page</b>
1	OPTIONAL COMPONENT OF THE CYCLE OF CORE COURSES	
2	OPTIONAL COMPONENT OF THE CYCLE OF MAJOR COURSES	



KAZAKH NATIONAL WOMEN'S TEACHER TRAINING UNIVERSITY  
DEPARTMENT OF NATURAL SCIENCES

7M01506-Geography  
Catalog of elective disciplines

## 1 OPTIONAL COMPONENT OF THE CYCLE OF CORE COURSES

### *Component of choice 1*

**Course: Theoretical and methodological problems of geography**

*Intensity of the Course:* 5 academic credits

*Module Code:* TMGSE-2

*Module Name:* Theory and methodology of geographical science and education

*Prerequisites:* MTG 3304 Methods of teaching geography

*Purpose:* To form an idea of geography as an integral system of interaction between natural and social sciences, its modern theoretical and methodological foundations, with the formulation of modern theoretical and methodological problems.

*Short Description:* Theoretical and methodological foundations of scientific knowledge and creativity, the main methods used in geographical research. The role of theoretical concepts in solving epistemological and constructive problems, the principles of system analysis of the geographical envelope. Geographical theories and patterns, concepts and hypotheses, spatial-temporal relations of geosystems.

*Learning Outcomes in EP (LOP):*

LOP 4 – Uses theoretical and practical knowledge to formulate and solve research problems.

LOP 5 – Has the skills to apply aerospace methods and geoinformation systems technologies in geographical research and education.

LOP 6 – Defines the current trends in the development of geographical science by analyzing geographical patterns, theories and concepts about the development of the Earth and society.

LOP 7 – Monitors changes in geosystems using bibliographic and statistical data and compiles their cartographic models.

LOP 8 – Projects the effective use of tourist and recreational resources, taking into account the regional fund of natural resources and the development of socio-economic factors.

LOP 9 – Predicts the upcoming geo-ecological situation in the countries of the world, comparing their rates of indicators of the use of natural resources and the economic policy of their development.

*Learning Outcomes in Course/Discipline (LOD):*

LOD 1 – Knows the theoretical, methodological and practical problems of geography.

LOD 2 – Is able to conduct research activities in a professional environment, develop and use models to describe and predict various phenomena.

LOD 3 – Is able to freely operate with fundamental concepts, categories, theories of geography, to penetrate into the essence of geographical processes and phenomena.

LOD 4 – Knows the methods of analyzing emerging geographical situations and methods of studying spatiotemporal systems.

LOD 5 – Evaluates the prospects for solving modern problems of geography and the directions of further development of the system of geographical sciences.

LOD 6 – Uses the skills of teaching geographical disciplines in organizations engaged in educational activities.

LOD 7 – Has the skills of processing, analyzing and synthesizing geographical information for geographical forecasting, planning and designing environmental and economic activities.

*Post requisites:* ORW 702 Methods of scientific research

### *Component of choice 1*



KAZAKH NATIONAL WOMEN'S TEACHER TRAINING UNIVERSITY  
DEPARTMENT OF NATURAL SCIENCES

7M01506-Geography  
Catalog of elective disciplines

**Course: Geourbanistics**

*Intensity of the Course:* 5 academic credits

*Module Code:* TMGSE-2

*Module Name:* Theory and methodology of geographical science and education

*Prerequisites:* GG 4309 Geopolitics and geourbanism

*Purpose:* Formation of masters' comprehensive understanding of the dynamics and spatial patterns of urbanization processes, spatial organization, evolution and functioning of urban systems at different levels in the post-industrial development of the world, as well as practical skills that allow analyzing local and regional problems of urbanization for the development and justification of urban settlement development programs.

*Short Description:* Population change and features of population distribution on the planet. Population densities and population growth rates. Geography of cities and geo-urban studies. System characteristics and structure of cities. Features of urbanization in Kazakhstan. The influence of the urban system on the geological and aquatic environment. The influence of the urban system on the atmosphere and climate. The influence of the urban system on biota. Methods for assessing the ecological and geochemical situation of urban ecosystems.

*Learning Outcomes in EP (LOP):*

LOP 6 – Defines the current trends in the development of geographical science by analyzing geographical patterns, theories and concepts about the development of the Earth and society.

LOP 7 – Monitors changes in geosystems using bibliographic and statistical data and compiles their cartographic models.

LOP 8 – Projects the effective use of tourist and recreational resources, taking into account the regional fund of natural resources and the development of socio-economic factors.

*Learning Outcomes in Course/Discipline (LOD):*

LOD 1 – Critically evaluates the geopolitical and geo-economic positions of countries and their regions, conducts geographical studies of sectoral, regional, national and global problems, and develops recommendations for their resolution.

LOD 2 – Develops the requirements of the legal and diplomatic foundations of international cooperation, regulation of international conflicts.

LOD 3 – Evaluates the features of global and regional energy diplomacy; analyzes the situation in the energy markets.

LOD 4 – Identifies the role of national interests in ensuring national energy security of countries; problems and trends in global energy, global energy markets and international energy policy in the context of regional interests.

LOD 5 – Applies methods of analysis of expert assessment of international situations and international problems.

LOD 6 – Finds application to his professional knowledge and level of his qualifications in the field of public service, business, non-governmental organizations of an international profile and performs the functions of an initiator or developer of new ideas and projects of a professional nature.

*Post requisites:* MGGPM 602 World economy and international relations

*Component of choice 2*

**Course: Geographical modeling**

*Intensity of the Course:* 5 academic credits

*Module Code:* TMGSE-2

*Module Name:* Theory and methodology of geographical science and education

*Prerequisites:* GGG 2207 General geology and geomorphology



KAZAKH NATIONAL WOMEN'S TEACHER TRAINING UNIVERSITY  
DEPARTMENT OF NATURAL SCIENCES

7M01506-Geography

Catalog of elective disciplines

*Purpose:* To form an idea of approaches to modeling geographical systems (geosystems) and the importance of the conceptual basis of modeling. The development of modern methods and concepts of mathematical and geographical modeling by undergraduates and the application of the acquired knowledge in solving applied problems.

*Short Description:* Features of the application of geographical modeling in physical, social and economic geography. The structure of the modeling process, the main functions of models: psychological, collective, logical, systematizing, constructive and cognitive. Classification of models used in geography, multidimensional mathematical models used for typology. Promising methods of modeling geosystems and geographical processes – simulation modeling. The main provisions of modeling in geography. Methodological problems of modeling in geography due to the great complexity and specificity of territorial systems, the dynamism of geographical processes, the variability of their parameters and structural relationships. Selection of the most adequate models. The main stages of modeling geographical processes and phenomena.

*Learning Outcomes in EP (LOP):*

LOP 4 – Uses theoretical and practical knowledge to formulate and solve research problems.

LOP 6 – Defines the current trends in the development of geographical science by analyzing geographical patterns, theories and concepts about the development of the Earth and society.

LOP 9 – Predicts the upcoming geo-ecological situation in the countries of the world, comparing their rates of indicators of the use of natural resources and the economic policy of their development.

*Learning Outcomes in Course/Discipline (LOD):*

LOD 1 – Knows the structure, mechanisms and stages of modeling geographical processes and phenomena.

LOD 2 – Competent in the classification of models used in geography. Compares multidimensional mathematical models used for typology.

LOD 3 – Analyzes the main methodological problems of modeling in geography, which are characterized by great complexity and specificity of territorial systems, dynamism of geographical processes, variability of their parameters and structural relationships.

LOD 4 – Predicts the dynamic development of geosystems, their stability, etc.

LOD 5 – Knows the basic methods and techniques of research and practical work in the field of formalized and real assessments of the state of the territory.

*Post requisites:* MGGPM 601 Geoecology and environmental geography

*Component of choice 2*

**Course: Political geography with geopolitics bases**

*Intensity of the Course:* 5 academic credits

*Module Code:* TMGSE-2

*Module Name:* Theory and methodology of geographical science and education

*Prerequisites:* GG 4309 Geopolitics and geourbanism.

*Purpose:* Formation of a systematized holistic view of the laws of the location of the economy and society, the spatial functioning of political systems and socio-economic laws in the heterogeneous natural and economic-cultural areas of the modern world, the role of geography in their cognition.

*Short Description:* Political geography: origins, problems, theory, theory of "world systems". Issues of the development of world political geography and the concept of territorial and political organization of society (POS). Types of POS. Political and geographical location, district, region, country. Geopolitical regions of the world. Geostrategic areas. The study of



KAZAKH NATIONAL WOMEN'S TEACHER TRAINING UNIVERSITY  
DEPARTMENT OF NATURAL SCIENCES

7M01506-Geography  
Catalog of elective disciplines

theoretical approaches used in the geographical study of borders: historical-cartographic, classification, functional, geographical-political.

*Learning Outcomes in EP (LOP):*

LOP 6 – Defines the current trends in the development of geographical science by analyzing geographical patterns, theories and concepts about the development of the Earth and society.

LOP 9 – Predicts the upcoming geo-ecological situation in the countries of the world, comparing their rates of indicators of the use of natural resources and the economic policy of their development.

*Learning Outcomes in Course/Discipline (LOD):*

LOD 1 – Analyzes the main categories and concepts related to international relations and geopolitical processes.

LOD 2 – Independently analyzes the modern realities of international relations and geopolitical processes, the reality and processes taking place in international society.

LOD 3 – Collects and analyzes statistical data, is able to make informed decisions in specific situations.

LOD 4 – The undergraduate has the skills to use modern research tools to analyze international interactions.

LOD 5 – Applies model estimation methods to establish a forecast of the development of international relations and processes.

*Post requisites:* MGGPM 602 World economy and international relations.

*Component of choice 3*

**Course: New concepts for the development of geographical education**

*Intensity of the Course:* 5 academic credits

*Module Code:* TMGSE-2

*Module Name:* Theory and methodology of geographical science and education

*Prerequisites:* MTG 3304 Methods of teaching geography

*Purpose:* Understanding and application of theoretical and practical issues of new concepts of geographical education development. Formation of competencies for the analysis and evaluation of the content and structure of educational concepts. The ability to develop lesson models based on the basic ideas of concepts; practical application of the scientific and didactic foundations of the concepts being studied.

*Short Description:* Modernization of geographical education. Ensuring the quality of education. Formation and development of new concepts of geographical education. Principles of ecologization, integration, globalization, regionalization, humanization and humanitarization of content. Personality-oriented learning. System-activity approach. Competence approach. Implementation of the meta-subject approach. Education that focuses on the expected learning outcomes. Definition of requirements for expected results. Basic and advanced level of geographical education.

*Learning Outcomes in EP (LOP):*

LOP 2 – Presents the theoretical and methodological foundations of the development of the science of pedagogy and psychology, the processes of management and possession of teaching methods, the essence and content of psychological and pedagogical research.

LOP 3 – Designs the content of school geographical education taking into account new requirements, principles and concepts of education.

LOP 4 – Uses theoretical and practical knowledge to formulate and solve research problems.

LOP 10 – Possesses research and digital skills.



KAZAKH NATIONAL WOMEN'S TEACHER TRAINING UNIVERSITY  
DEPARTMENT OF NATURAL SCIENCES  
7M01506-Geography  
Catalog of elective disciplines

*Learning Outcomes in Course/Discipline (LOD):*

LOD 1 – Understands and uses the ideas of the concept of geographical education, the updated program in the educational process.

LOD 2 – Understands the role and place of mathematical cartographic modeling in geographical research.

LOD 3 – Is able to analyze the expected results indicated in the concepts.

LOD 4 – Owns the scientific and methodological foundations of geographical concepts, curricula and textbooks of geography.

LOD 5 – Conducts research using the concept of education, an updated curriculum and new geography textbooks.

*Post requisites:* ORW 702 Methods of scientific research

*Component of choice 3*

*Course:* **Landscape ecology and monitoring**

*Intensity of the Course:* 5 academic credits

*Module Code:* TMGSE-2

*Module Name:* Theory and methodology of geographical science and education

*Prerequisites:* SGLS 2303 Soil geography and landscape science, PGK 3305 Physical Geography of Kazakhstan

*Purpose:* To show the role of landscape ecology and monitoring in solving problems of rational nature management; to teach accounting and assessment of landscape-territorial differences; to form ideas about natural and natural-anthropogenic landscapes as objects of use and protection.

*Short Description:* Basic concepts of landscape ecology. Forms of anthropogenic impact on the landscape and types of monitoring used in various landscapes of the globe. Global monitoring (baseline, regional, impact levels), including background and paleomonitoring (historical). Ingredient monitoring. World Meteorological Organization and International monitoring of geosystems pollution.

*Learning Outcomes in EP (LOP):*

LOP 7 – Monitors changes in geosystems using bibliographic and statistical data and compiles their cartographic models.

LOP 8 – Projects the effective use of tourist and recreational resources, taking into account the regional fund of natural resources and the development of socio-economic factors.

LOP 9 – Predicts the upcoming geo-ecological situation in the countries of the world, comparing their rates of indicators of the use of natural resources and the economic policy of their development.

*Learning Outcomes in Course/Discipline (LOD):*

LOD 1 – Knows the essence of dynamic and evolutionary changes in landscapes, direct and inverse relationships between landscape components.

LOD 2 – Understands the integrity of nature and the connection of human society with the environment.

LOD 3 – Able to use landscape and ecological methods in assessing the state of the environment.

LOD 4 – Applies the acquired knowledge in environmental protection activities.

LOD 5 – Predicts possible ways of development of nature and human society.

*Post requisites:* MMTG 503 Geocological marketing.

## 2. OPTIONAL COMPONENT OF THE CYCLE OF MAJOR COURSES



KAZAKH NATIONAL WOMEN'S TEACHER TRAINING UNIVERSITY  
DEPARTMENT OF NATURAL SCIENCES  
7M01506-Geography  
Catalog of elective disciplines

*Component of choice 1*

**Course: Innovative methods in the study of geography in higher education**

*Intensity of the Course:* 5 academic credits

*Module Code:* MMTG-3

*Module Name:* Modern methods and technologies in geography

*Prerequisites:* ESGW 2303 Economic, social geography of the world

*Purpose:* Determination of the scientific basis and effectiveness of the use of innovative technologies in geography lessons.

*Short Description:* Scientific foundations and effectiveness of the use of innovative technologies in geography. Modular technology of M. Zhanpeisov's training. "Developing learning" by D.B. Elkonin and V.V. Davydov. The technology of differentiated learning by J.A. Karaev and A. Zhunusov. The problematic method of John Dewey and Makhmudov. The method of distance learning. Case technologies. Information technology. Interactive teaching methods.

*Learning Outcomes in EP (LOP):*

LOP 2 – Presents the theoretical and methodological foundations of the development of the science of pedagogy and psychology, the processes of management and possession of teaching methods, the essence and content of psychological and pedagogical research.

LOP 3 – Designs the content of school geographical education taking into account new requirements, principles and concepts of education.

LOP 4 – Uses theoretical and practical knowledge to formulate and solve research problems.

LOP 5 – Has the skills to apply aerospace methods and geoinformation systems technologies in geographical research and education.

LOP 10 – Possesses research and digital skills.

*Learning Outcomes in Course/Discipline (LOD):*

LOD 1 – Is able to organize the learning process: set goals, design and implement the learning process, evaluate learning outcomes.

LOD 2 – Substantiates his own ideas, forms the rationale for specific decisions.

LOD 3 – Knows the forms and features of the organization of educational work. He uses game technologies and interactive methods in geography lessons.

LOD 4 – Develops and applies various forms of testing knowledge, skills and abilities based on innovative technologies of teaching geography.

LOD 5 – Is able to group, classify by content and applies innovative technologies in practice.

*Post requisites:* ORW 701 Academic writing

*Component of choice 1*

**Course: Statistics of environment**

*Intensity of the Course:* 5 academic credits

*Module Code:* MMTG-3

*Module Name:* Modern methods and technologies in geography

*Prerequisites:* MTG 3304 Methods of teaching geography

*Purpose:* Statistical generalization and analysis of environmental pollution, monitoring of pollution levels.

*Short Description:* The subject, tasks and system of indicators of environmental statistics. Directions for further development of environmental statistics. Pollution control is the basis for statistical generalization and analysis of the quality of the environment. The main subsystems of



KAZAKH NATIONAL WOMEN'S TEACHER TRAINING UNIVERSITY  
DEPARTMENT OF NATURAL SCIENCES

7M01506-Geography  
Catalog of elective disciplines

environmental statistics indicators. International cooperation in the field of environmental protection and the creation of environmental statistics.

*Learning Outcomes in EP (LOP):*

LOP 7 – Monitors changes in geosystems using bibliographic and statistical data and compiles their cartographic models.

LOP 8 – Projects the effective use of tourist and recreational resources, taking into account the regional fund of natural resources and the development of socio-economic factors.

LOP 9 – Predicts the upcoming geo-ecological situation in the countries of the world, comparing their rates of indicators of the use of natural resources and the economic policy of their development.

*Learning Outcomes in Course/Discipline (LOD):*

LOD 1 – Know the methodology of statistical observation of the components of the natural environment.

LOD 2 – Able to create a system of statistical indicators for assessing the state and changes in the natural environment, calculate and analyze the most important indicators characterizing environmental, socio-economic phenomena and processes.

LOD 3 – Knows the basics of statistical methodology for accounting for the condition, use, pollution and protection of components of the natural environment.

LOD 4 – Gains skills in statistically studying the impact of economic activities on the environment and the impact of the state of the environment on the quality of life of the population.

LOD 5 – Analyzes and interprets data from domestic and foreign statistics on socio-economic processes and phenomena, identifies trends in changes in socio-economic indicators.

LOD 6 – Applies tools for processing economic data in accordance with the assigned task, analyzes the results of calculations and substantiates the conclusions obtained.

LOD 7 – Uses modern technical means and information technologies to solve analytical and research problems.

*Post requisites:* no

*Component of choice 2*

**Course: Geoinformation technologies in geographical research**

*Intensity of the Course:* 5 academic credits

*Module Code:* MMTG-3

*Module Name:* Modern methods and technologies in geography

*Prerequisites:* DGGIS 2206 Digital Cartography and GIS

*Purpose:* Formation and improvement of skills and abilities in the use of geographic information technologies to solve theoretical and applied problems in various areas of geographical research.

*Short Description:* The concept of “geographic information system” in geography and its connection with the branches of science and production. Structure and main functions of a geographic information system (GIS). Use of GIS in geographical research. GIS and space method. Space imaging devices and types of filming. Visual and automatic interpretation of Earth remote sensing data. Data analysis and cartographic modeling.

*Learning Outcomes in EP (LOP):*

LOP 4 – Uses theoretical and practical knowledge to formulate and solve research problems.

LOP 5 – Has the skills to apply aerospace methods and geoinformation systems technologies in geographical research and education.



KAZAKH NATIONAL WOMEN'S TEACHER TRAINING UNIVERSITY  
DEPARTMENT OF NATURAL SCIENCES

7M01506-Geography

Catalog of elective disciplines

LOP 7 – Monitors changes in geosystems using bibliographic and statistical data and compiles their cartographic models.

LOP 9 – Predicts the upcoming geo-ecological situation in the countries of the world, comparing their rates of indicators of the use of natural resources and the economic policy of their development.

LOP 10 – Possesses research and digital skills.

*Learning Outcomes in Course/Discipline (LOD):*

LOD 1 – Knows how to obtain and create a spatial research database.

LOD 2 – Can spatially analyze geographic information, process cartographic processes and phenomena, and present research results.

LOD 3 – Inputs and processes digital spatial information using various hardware and software.

LOD 4 – Creates and applies geographic databases to solve geographic problems.

LOD 5 – Applies geoinformation technologies in the study of natural resources and in conducting environmental monitoring.

LOD 6 – Converts geographic information and uses Internet resources to obtain spatial data and spatial analysis resources.

*Post requisites:* IS 703 Remote sensing in geographical research

*Component of choice 2*

**Course: Environmental management in the context of globalization**

*Intensity of the Course:* 5 academic credits

*Module Code:* MMTG-3

*Module Name:* Modern methods and technologies in geography

*Prerequisites:* GBP 3307 Geoglobalistics and basics of nature management

*Purpose:* To introduce the basic laws of ecology, the systemic nature of crisis environmental conditions, the most important problems for humanity studied in the field of ecology and environmental management, and ways to solve them.

*Short Description:* Efficiency of regulation of public relations in the field of environmental management and environmental protection. Analysis of the causes of environmental degradation of global public goods. Natural resource consumption system. Geoecological state of the world and individual countries. The problem of the world population is the use of natural resources. The search for compromise solutions, the need for the unity of science and economics.

*Learning Outcomes in EP (LOP):*

LOP 7 – Monitors changes in geosystems using bibliographic and statistical data and compiles their cartographic models.

LOP 8 – Projects the effective use of tourist and recreational resources, taking into account the regional fund of natural resources and the development of socio-economic factors.

LOP 9 – Predicts the upcoming geo-ecological situation in the countries of the world, comparing their rates of indicators of the use of natural resources and the economic policy of their development.

*Learning Outcomes in Course/Discipline (LOD):*

LOD 1 – Uses theoretical knowledge to solve professional problems.

LOD 2 – Knows ways to solve problems of efficient and environmentally friendly use of natural resources.

LOD 3 – Predicts the impact of human activities on the environment.

LOD 4 – Makes management decisions taking into account the state and anthropogenic load on the environment.

LOD 5 – Solves problems of rational use of natural resources.



KAZAKH NATIONAL WOMEN'S TEACHER TRAINING UNIVERSITY  
DEPARTMENT OF NATURAL SCIENCES  
7M01506-Geography  
Catalog of elective disciplines

*Post requisites:* TMGSE 503 New concepts for the development of geographical education

*Component of choice 3*

**Course: Geo-economic aspects of the strategic development of the region**

*Intensity of the Course:* 5 academic credits

*Module Code:* MMTG-3

*Module Name:* Modern methods and technologies in geography

*Prerequisites:* TMGSE 502 Geographical modeling

*Purpose:* Studying the strategy of transition to sustainable development of the region, where the concept of “geo-economic aspects” (global strategic development, theoretical directions of the region’s development strategy, modeling the region’s development strategy based on closed resource cycles) means the inclusion of objective laws of the economics of nature in the strategy of the socio-economic development of the region.

*Short Description:* Economy of the regions of Kazakhstan. Theory and practice of economic-geographical zoning. Investment attractiveness is a mechanism for the development of the regional economy. Alignment of economic development of regions of Kazakhstan. Specialization and diversification - the potential for development of the regional economy. Special economic zones and technology parks of Kazakhstan. Cluster initiatives of Kazakhstan. Supporting domestic producers through import substitution. Brand management is a condition for popularizing goods and services.

*Learning Outcomes in EP (LOP):*

LOP 5 – Has the skills to apply aerospace methods and geoinformation systems technologies in geographical research and education.

LOP 6 – Defines the current trends in the development of geographical science by analyzing geographical patterns, theories and concepts about the development of the Earth and society.

LOP 8 – Projects the effective use of tourist and recreational resources, taking into account the regional fund of natural resources and the development of socio-economic factors.

*Learning Outcomes in Course/Discipline (LOD):*

LOD 1 – Reveals the role of geographic space in the economic development of countries and regions (with additional coverage of the Kazakhstan component).

LOD 2 – Determines the economic structure, the ratio of economic sectors, the territorial structure of the economy and effective indicators of economic development that are beneficial for the Republic of Kazakhstan.

LOD 3 – Compares and analyzes the sectoral and territorial structure of the economy, indicators of economic development of the regions of Kazakhstan.

LOD 4 – Offers solutions to eliminate barriers to the economic development of regions of Kazakhstan (using the example of its region).

LOD 5 – Evaluates the economic development strategies of countries around the world (with additional coverage of the Kazakhstan component).

LOD 6 – Present draft strategies for the economic development of the regions of Kazakhstan (using the example of your region).

*Post requisites:* MPGE 7203 Modern paradigm of geographical education

*Component of choice 3*

**Course: Geoeological marketing**

*Intensity of the Course:* 5 academic credits

*Module Code:* MMTG-3

*Module Name:* Modern methods and technologies in geography



KAZAKH NATIONAL WOMEN'S TEACHER TRAINING UNIVERSITY  
DEPARTMENT OF NATURAL SCIENCES

7M01506-Geography

Catalog of elective disciplines

*Prerequisites:* TMGSE 502 Geographical modeling

*Purpose:* Deepen and expand knowledge of the basics of geoecology, general patterns of human interaction with the environment, introduce them to geoecological phenomena and natural resources, the close connection of environmental processes with the geographic environment. To teach to consider the relationship of types of natural resources with the geographical landscape and as its integral part. Also familiarization with geoecological fundamentals.

*Short Description:* The concept and history of the development of geo-ecological marketing. Analysis of the impact of human activities on the environment. Geoecological marketing is the main element of the policy for the development of production facilities. A retrospective analysis of the development of the green procurement concept. Foreign experience of government green purchases. International agreements and processes in the field of trade in environmental goods and services.

*Learning Outcomes in EP (LOP):*

LOP 7 – Monitors changes in geosystems using bibliographic and statistical data and compiles their cartographic models.

LOP 8 – Projects the effective use of tourist and recreational resources, taking into account the regional fund of natural resources and the development of socio-economic factors.

LOP 10 – Possesses research and digital skills.

*Learning Outcomes in Course/Discipline (LOD):*

LOD 1 – Knows and systematically considers the theoretical and practical aspects of introducing the concept of geo-ecological marketing into practice.

LOD 2 – Considers the close connection of natural resources with the geographical landscape as its integral part.

LOD 3 – Explores the prospects, problems and features of the development of geo-ecological marketing in the modern economy.

LOD 4 – Applies the laws of interaction between systems when solving problems in the professional field.

LOD 5 – Predicts the upcoming geo-ecological situation in the world by comparing the rate of use of natural resources and the economic policy of their development.

*Post requisites:* MGGPM 601 Geoecology and environmental geography

*Component of choice 4*

*Course:* **Cartographic support of scientific research**

*Intensity of the Course:* 5 academic credits

*Module Code:* GAMD-4

*Module Name:* Geographical aspects of management, design and forecasting

*Prerequisites:* DGGIS 2206 Digital Cartography and GIS

*Purpose:* Construction of elementary and complex cartographic models for scientific research in geography.

*Short Description:* The role of cartography in the development of natural sciences. Classification of geographical maps and their scope. Map symbols. Cartographic modeling of geographical phenomena. Providing cartographic data for physical-geographical and economic-social research. Problems of geoecological mapping and greening of thematic maps. Problems of mapping the service sector.

*Learning Outcomes in EP (LOP):*

LOP 4 – Uses theoretical and practical knowledge to formulate and solve research problems.



KAZAKH NATIONAL WOMEN'S TEACHER TRAINING UNIVERSITY  
DEPARTMENT OF NATURAL SCIENCES

7M01506-Geography  
Catalog of elective disciplines

LOP 5 – Has the skills to apply aerospace methods and geoinformation systems technologies in geographical research and education.

LOP 7 – Monitors changes in geosystems using bibliographic and statistical data and compiles their cartographic models.

*Learning Outcomes in Course/Discipline (LOD):*

LOD 1 – Knows the theoretical foundations and basic ideas about modern cartographic modeling of geographical objects and processes.

LOD 2 – Able to identify the main methods, algorithms and patterns of cartographic modeling and apply them when creating and analyzing thematic maps.

LOD 3 – Understands the role and place of mathematical and cartographic modeling in geographical research.

LOD 4 – Evaluates the cost-effectiveness of mapping technologies in geographic research.

LOD 5 – Possesses practical skills in cartographic modeling.

*Post requisites:* IS 703 Remote sensing in geographical research

*Component of choice 4*

**Course: Regional development, planning and management**

*Intensity of the Course:* 5 academic credits

*Module Code:* GAMD-4

*Module Name:* Geographical aspects of management, design and forecasting

*Prerequisites:* TMGSE 504 Planning and organization of scientific research

*Purpose:* To acquaint master's students with modern concepts of economic development of regions, theoretical foundations of intra- and interregional economic relations and world experience in managing regional economic development, with the theory of forecasting, planning and management of territorial development. To develop the ability to use methods of spatial (regional, territorial) analysis in the field of managing a region as an economic entity, choosing effective methods for solving strategic problems and using practical skills in the development of strategic programs for regional development.

*Short Description:* Regional economy as an object and subject of economic management. The essence of regional management and the need for new approaches. Historical and geographical characteristics of the economy of the regions of the Republic of Kazakhstan. Modern problems of regional management. Planning and forecasting the development of regional economies and management of economic-geographical zones.

*Learning Outcomes in EP (LOP):*

LOP 4 – Uses theoretical and practical knowledge to formulate and solve research problems.

LOP 7 – Monitors changes in geosystems using bibliographic and statistical data and compiles their cartographic models.

LOP 8 – Projects the effective use of tourist and recreational resources, taking into account the regional fund of natural resources and the development of socio-economic factors.

*Learning Outcomes in Course/Discipline (LOD):*

LOD 1 – Knows the methodology of forecasting and planning at all levels of management in the region.

LOD 2 – Able to apply analysis methods and justify the needs, goals and priorities of the socio-economic development of the country and region.

LOD 3 – Able to comprehensively study the socio-economic life of the region and use the research results for generalizing conclusions and assessments.

LOD 4 – Uses project approach technologies to develop regional economic development programs.



KAZAKH NATIONAL WOMEN'S TEACHER TRAINING UNIVERSITY  
DEPARTMENT OF NATURAL SCIENCES

7M01506-Geography  
Catalog of elective disciplines

LOD 5 – Applies in practice the basic methods and technologies of strategic, indicative, program-targeted, project planning to solve problems of regional development.

LOD 6 – Has the skill of working with modern software that allows you to analyze, forecast and plan the main parameters of the development of socio-economic systems and processes.

LOD 7 – Develops forecasts and programs for the socio-economic development of the region, focused on the strategic objectives of regional policy.

*Post requisites:* TMGSE 503 New concepts for the development of geographical education

*Component of choice 5*

**Course: Political Geography and Globalization of the Modern World**

*Intensity of the Course:* 6 academic credits

*Module Code:* GAMD-4

*Module Name:* Geographical aspects of management, design and forecasting

*Prerequisites:* MMTG 501 Statistics of environment

*Purpose:* Formation of scientific foundations for the analysis of the geopolitical situation in the world, its individual regions and countries, the main trends in its development, taking into account the real relationship of geopolitical and world economic forces on the world stage.

*Short Description:* Features of the modern political and administrative structure of countries and the world. Theoretical foundations of political geography, the main stages of its development. Current directions of research into territorial-political systems at various levels. Methodology and techniques for analyzing state territory and its morphological features, types and functions of borders and administrative-territorial divisions. Basic geopolitical concepts of world development, directions of transformation of the geopolitical structure of the world at different stages of development, changes in the geopolitical position of individual countries. Political and geographical structure of macroregions of the world, genesis and features of regional conflicts, ways of their resolution and forms of international cooperation.

*Learning Outcomes in EP (LOP):*

LOP 6 – Defines the current trends in the development of geographical science by analyzing geographical patterns, theories and concepts about the development of the Earth and society.

LOP 7 – Monitors changes in geosystems using bibliographic and statistical data and compiles their cartographic models.

LOP 9 – Predicts the upcoming geo-ecological situation in the countries of the world, comparing their rates of indicators of the use of natural resources and the economic policy of their development.

*Learning Outcomes in Course/Discipline (LOD):*

LOD 1 – Applies methods of geopolitical and economic analysis to assess the country's position in the system of international economic, political, cultural connections and relations.

LOD 2 – Justifies traditional and modern geopolitical approaches in assessing the geo-economic and political situation of countries and regional unions, establishes the influence of a complex of economic and geographical factors on the national security of the country.

LOD 3 – Identifies the main trends in the development of the geopolitical situation in regions and countries.

LOD 4 – Evaluates external and internal factors of geopolitical development of countries and regions, reveals the genesis of regional contradictions and conflicts.

LOD 5 – Develops situational scenarios for resolving regional conflicts, territorial and resource disputes.



KAZAKH NATIONAL WOMEN'S TEACHER TRAINING UNIVERSITY  
DEPARTMENT OF NATURAL SCIENCES

7M01506-Geography  
Catalog of elective disciplines

LOD 6 – Develops a geo-economic justification and scenarios for the geopolitical development of countries and integration groups in connection with world economic and political cycles.

*Post requisites:* TMGSE 503 New concepts for the development of geographical education

*Component of choice 5*

**Course: Geographical problems of management and forecast in environmental management**

*Intensity of the Course:* 6 academic credits

*Module Code:* GAMD-4

*Module Name:* Geographical aspects of management, design and forecasting

*Prerequisites:* TMGSE 504 Planning and organization of scientific research

*Purpose:* Identify geographic problems of management and forecasting in environmental management. To contribute to the formation of knowledge and competence about the geographical foundations of environmental management and forecasting issues, about the concept of sustainable development of the modern world.

*Short Description:* The main goals and objectives of management and forecasting in environmental management. Scientific substantiation of the problems of limiting the harmful effects of production and other activities on the natural environment, ensuring the effective use, protection and reproduction of natural resources. Mechanisms for organizing and monitoring compliance with rules, requirements, and environmental management standards. Development of legal provisions, economic incentives, establishment of environmental, economic measures, planning of mechanisms for their financing and supervision of implementation on a scientific basis. Basic management methods in environmental management: forecasts, programs, planning and design. Creating conditions for a favorable natural environment for human life and health.

*Learning Outcomes in EP (LOP):*

LOP 5 – Has the skills to apply aerospace methods and geoinformation systems technologies in geographical research and education.

LOP 7 – Monitors changes in geosystems using bibliographic and statistical data and compiles their cartographic models.

LOP 9 – Predicts the upcoming geo-ecological situation in the countries of the world, comparing their rates of indicators of the use of natural resources and the economic policy of their development.

*Learning Outcomes in Course/Discipline (LOD):*

LOD 1 – Knows models and mechanisms of natural resource management at the state and regional levels.

LOD 2 – Analyzes the effectiveness of mechanisms and models of natural resources and the organization of management of renewable natural resources.

LOD 3 – Builds a system of practical measures to ensure public participation in protecting the environment from anthropogenic influence in micro-society.

LOD 4 – Able to compare, analyze and interpret complex experimental information.

LOD 5 – Possesses the skills of modeling optimal conditions for practical legal support for the rational use and protection of the environment at the level of local governments.

LOD 6 – Assess the degree of anthropological impact on the recreational capabilities of the environment and predict the potential state of the geosystem, comparing their rates of use of natural resources and the economic policy of their development.

*Post requisites:* TMGSE 503 New concepts for the development of geographical education

*Component of choice 6*



KAZAKH NATIONAL WOMEN'S TEACHER TRAINING UNIVERSITY  
DEPARTMENT OF NATURAL SCIENCES

7M01506-Geography  
Catalog of elective disciplines

**Course: Geocology and environmental geography**

*Intensity of the Course:* 6 academic credits

*Module Code:* MGGPM-5

*Module Name:* Modern geocological and geoeconomical problems of mankind

*Prerequisites:* SGLS 2303 Soil geography and landscape science, PGK 3305 Physical Geography of Kazakhstan

*Purpose:* Studying the principles of geocology as a study of natural-anthropogenic geosystems, the foundations of the study of nature conservation.

*Short Description:* Ecological patterns, their historical origin. Regional aspects of the formation of global ecosystems in modern conditions. The main causes of global environmental problems. Problems of preserving the Earth's biological diversity. Administrative methods of management in the field of environmental management. Forecasting the development of the environmental situation in the regions of Kazakhstan.

*Learning Outcomes in EP (LOP):*

LOP 9 – Predicts the upcoming geo-ecological situation in the countries of the world, comparing their rates of indicators of the use of natural resources and the economic policy of their development.

*Learning Outcomes in Course/Discipline (LOD):*

LOD 1 – Knows the criteria and techniques for rational environmental management and environmental quality assessment.

LOD 2 – Selects the optimal directions and options for solving geo-ecological problems at the global, regional and local levels.

LOD 3 – Applies methodological approaches of geocology in analyzing the functioning, dynamics and evolution of the geographical environment.

LOD 4 – Analyzes the main geo-ecological problems at the global, regional and local levels, possible directions and options for their solution.

LOD 5 – Performs geocological assessment of environmental quality.

LOD 6 – Knows the basic techniques of processing, analyzing and interpreting geo-ecological information.

LOD 7 – Proficient in analytical, remote sensing and other methods for studying environmental quality.

*Post requisites:* TMGSE 503 New concepts for the development of geographical education

*Component of choice 6*

**Course: Conservation questions in oil-extracting regions of Kazakhstan**

*Intensity of the Course:* 6 academic credits

*Module Code:* MGGPM-5

*Module Name:* Modern geocological and geoeconomic problems of mankind

*Prerequisites:* MGGPM 601 Geocology and environmental geography

*Purpose:* Studying the discipline will allow masters to acquire the knowledge, skills and abilities necessary in the field of geological modeling of oil and gas fields, directions for reducing the impact of increased oil and gas production on the ecology of oil-producing regions.

*Short Description:* Environmental studies in the oil regions of Kazakhstan. Resource potential and state of development of oil-producing territories in Kazakhstan. Ecological and geographical assessment of the impact of petroleum products on the environment. Issues of geocological zoning of oil-producing regions. Problems of conservation of biological diversity and protection of water and land resources.

*Learning Outcomes in EP (LOP):*



KAZAKH NATIONAL WOMEN'S TEACHER TRAINING UNIVERSITY  
DEPARTMENT OF NATURAL SCIENCES

7M01506-Geography  
Catalog of elective disciplines

LOP 7 – Monitors changes in geosystems using bibliographic and statistical data and compiles their cartographic models.

LOP 9 – Predicts the upcoming geo-ecological situation in the countries of the world, comparing their rates of indicators of the use of natural resources and the economic policy of their development.

LOP 10 – Possesses research and digital skills.

*Learning Outcomes in Course/ Discipline (LOD):*

LOD 1 – Has the ability to reveal the functions and values of natural and natural-anthropogenic systems.

LOD 2 – Knows methods of environmental planning and design of the oil and gas sector.

LOD 3 – Analyzes environmental legislation and possible directions for its improvement.

LOD 4 – Calculates estimates of damage from emissions and environmental pollution during oil production by region.

LOD 5 – Analyzes ways to solve environmental safety in oil and gas fields, taking into account the qualitative composition of Kazakh oil.

LOD 6 – Develops programs for geological protection of oil and gas fields.

LOD 7 – Develops recommendations for the development of a program for restructuring and development of the oil and gas complex of the Republic of Kazakhstan in the context of environmental safety.

*Post requisites:* TMGSE 503 New concepts for the development of geographical education

*Component of choice 7*

**Course: World economy and international relations**

Intensity of the Course: 6 academic credits

*Module Code:* MGGPM-5

*Module Name:* Modern geoeological and geoeconomic problems of mankind

*Prerequisites:* ESGW 2303 Economic, social geography of the world

*Purpose:* To develop in the audience a comprehensive understanding of the laws, trends and contradictions inherent in the modern world economy and international economic relations (IEO).

*Short Description:* Geography of the world economy: basic concepts, subjects, relationships. International division of labor. International economic integration. Structure of international trade. Basic forms of international economic relations. Features of the economy of developed and developing countries. The role of Kazakhstan in the system of international relations. Global problems of the world economy and directions for their joint solution.

*Learning Outcomes in EP (LOP):*

LOP 6 – Defines the current trends in the development of geographical science by analyzing geographical patterns, theories and concepts about the development of the Earth and society.

LOP 9 – Predicts the upcoming geo-ecological situation in the countries of the world, comparing their rates of indicators of the use of natural resources and the economic policy of their development.

*Learning Outcomes in Course/Discipline (LOD):*

LOD 1 – Knows the theory and practice of international trade, investment, currency and migration policies.

LOD 2 – Reasonably reveals the main theoretical principles and categories of the world economy, trends and patterns of its development.



KAZAKH NATIONAL WOMEN'S TEACHER TRAINING UNIVERSITY  
DEPARTMENT OF NATURAL SCIENCES

7M01506-Geography  
Catalog of elective disciplines

LOD 3 – Reveals complex processes and phenomena of the world economy, identifies problems and features of the state and development of the main forms of international economic relations.

LOD 4 – Analyzes the economic potential, industry structure and main directions of integration of the Republic of Kazakhstan into the world economic system.

LOD 5 – Evaluates patterns and trends in the development of international economic relations.

LOD 6 – Predicts the prerequisites for globalization, potential opportunities and current problems of openness of national economies.

*Post requisites:* TMGSE 503 New concepts for the development of geographical education

*Component of choice 7*

**Course: Geography of a water management of RK**

*Intensity of the Course:* 6 academic credits

*Module Code:* MGGPM-5

*Module Name:* Modern geoeological and geoeconomic problems of mankind

*Prerequisites:* Hyd 2211 Hydrology

*Purpose:* To introduce integrated methods and practices of water management and water use efficiency, to prepare a generation of specialists in the field of management skills in the field of rational use and protection of water resources.

*Short Description:* State water cadastre and tasks. Use of water resources, water use catalogues. Annual data and long-term characteristics of water resources use. Water resources of Kazakhstan. Water resources of the main rivers of the Republic of Kazakhstan and their regime characteristics. Main water management regions of Kazakhstan. Groundwater resources of the Republic of Kazakhstan. Water supply of water chemistry in Kazakhstan. Irrigation design. Environmental problems of water resources.

*Learning Outcomes in EP (LOP):*

LOP 7 – Monitors changes in geosystems using bibliographic and statistical data and compiles their cartographic models.

LOP 8 – Projects the effective use of tourist and recreational resources, taking into account the regional fund of natural resources and the development of socio-economic factors.

LOP 9 – Predicts the upcoming geo-ecological situation in the countries of the world, comparing their rates of indicators of the use of natural resources and the economic policy of their development.

*Learning Outcomes in Course/Discipline (LOD):*

LOD 1 – Knows the system of legal norms regulating public relations regarding the use, protection and restoration of water bodies.

LOD 2 – Able to interpret the main factors in the formation of river flow.

LOD 3 – Knows statistical methods for calculating the main characteristics of annual runoff and its intra-annual distribution.

LOD 4 – Evaluates the current state of water resource use, principles of integrated water resources management in world practice.

LOD 5 – Develops an action plan to preserve and improve the condition of water bodies and hydraulic structures.

LOD 6 – Participates in the design of water management facilities and hydraulic structures that ensure durable and reliable operation of systems.

*Post requisites:* TMGSE 503 New concepts for the development of geographical education