



Наименование дисциплины и код:

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| Лектор | <u>Kadralieva Aisuluu Kanybekovna</u> |
| Контактная информация: | 0777 099 044, k.aisuluu@mail.ru |
| Количество кредитов: | 3 credits |
| Дата: | 2 semester 2020 |
| Цель и задачи курса | <p>The goal of the subject: to encourage students to understand the specific relations between society, nature, human and environment, to give them knowledge about global environmental problems of humanity with the purpose of not only to save but also to improve it.</p> <p>Course objectives:</p> <p>To give students systematic knowledge about interaction between nature and social environment;</p> <p>To teach them how to identify optimal requirements and needs in technology development in order to keep a balance of nature and environment;</p> <p>To teach students to analyse interactions between structural components of society and nature, as well to correlate society development goals with the environmental regularity;</p> <p>To teach students ability to help to make changes in the nature which will keep and develop biosphere in the future.</p> |
| Описание курса | The main goal of this course is forming and developing environmental thinking of the student, and developing students ability to work on improving quality of environment in their professional and daily life, to provide their own mechanisms on environmental management. |
| Пре реkwизиты | Without knowledge in math, chemistry and physics understanding of the course is impossible. It all makes nessesary to study biological and other natural, humanitarian science and math. |
| Пост реkwизиты | After completing the course student should have information about: methods of modeling and assessing ecosystem condition and be able to predict their own impacts from professional activities on environmental processes. |
| Компетенции | <p>Student should know (professional competencies):</p> <ul style="list-style-type: none">- basic principles about interactions among organisms and their environment, including human and nature;- basic principles of general ecology;- basic principles of environmental management;- legal norms and regulations about environmental protection in KR;- basic elements of social ecology and demography;- basic rules and methods of environmental monitoring;- natural resource allocation system;- basic techniques and methods of engeenering environmental protection; |

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| | <ul style="list-style-type: none"> - basic economic and environmental regulations and payment system for natural resources and environmental protection in KR and abroad; - environmental situation and problems in KR; - basic ways of implementing environmental activities; - to use basic tools of environmental management; - legal norms on protection of flora and fauna; |
| Политика курса | The policy of the course is systematization of knowledge about interactions among organisms and their environment, including human, formation of the general principles of the environmental processes as a key option on optimization of human activities in environment to find better way on sustainable and stable development. |
| Методы преподавания: | Lectures, Work in a small teams, Discussions, Lessons using strategy, Role-playing games of critical thinking, Project works |
| Форма контроля знаний | Current assesement, modules, student-self work, examination. |
| Литература: Основная Дополнительная | <ol style="list-style-type: none"> 1. Korobkin V.N., Predelski L.V., Ecology. 2009 2. Kulmatov T.N., Ecology. Bishkek 2012 3. Akimova T.A., Haskin V.V., Ecology: University textbook. – M.: Unity, 2010 |
| СРС | <p><u>10.10.2018</u> Discovering and description of environmental systems. Interaction between ecosystem elements. To draw a table «Defining interaction between organisms according to the classification». To prepare a project: «Influence of car exhaust on environment and population health in Bishkek».</p> <p><u>21.11.2018</u> To prepare a presentation: «Specially protected natural areas and reserves in Kyrgyzstan» Project: «Environmental problems of the lake Issyk-Kul» Project «International cooperation in the field of environmental protection»</p> <p><u>12.12.2018</u> Project «Principles of solving global environmental problems («ozone holes», «greenhouse effect», «acid rains»)). Perspectives of developing alternative energy sources. (Report) Project «Environmental problems in a big cities and their growing. The problems of vehicles».</p> |
| Примечание. | |

Theme plan of the course in calendar

| № | Date | Lessons topics | Num of hours | Literature | Control form |
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| 1 | 5.09.20 | Module 1. General ecology. Introduction. The subject of | | 1. Korobkin | Quiz |

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| | | environment, structure and objectives. Main environmental terms. Consistency. | 2 | V.N., Predelski L.V., Ecology. 2009 | |
| 2 | 7.09.20 | Organism as a holistic system. The levels of biological organization. Organisms system and Earth biota. | 2 | 2. Kulmatov T.N., Ecology. Bishkek 2012 | Quiz |
| 3 | 12.09.20 | Organism and environment interaction. Environment factors. General regularity of abiotic factors. General regularity of biotic factors. Limiting factors. The biomass resources as environmental factors. | 2 | 3. Akimova T.A., Haskin V.V., Ecology: University textbook. – M.: Unity, 2010 | Quiz |
| 4 | 19.09.20 | Population. Static and dynamic parameters of population. Life expectancy. Dynamic of population growth. Environmental strategy of survival. | 2 | 4. Tihonov A.I., Environmental problems: Lectures. – Ivanovo, 2002. | Quiz |
| 5 | 21.02.20 | Biotic community. The specific structure of biocenosis. Spatial structure of biocenosis. Ecological niche. | 2 | | Question-answer |
| 6 | 26.09.20 | Ecosystem lifestyle. Organization (structure) of ecosystems. Ecosystem energy. Productivity of ecosystems and biomass. | 2 | | Quiz |
| 7 | 3.10.20 | Dynamic and development of ecosystems. Successions. Sustainability of ecosystems. | 2 | | Question-answer |
| 8 | 5.10.20 | Biosphere doctrine. Biosphere as a global ecosystem of the Earth. Biosphere extension and borders. The lifecycle in nature. | 2 | | Quiz |
| 9 | 10.10.20 | Natural ecosystems of the Earth. Classification of natural biosphere on a landscape basis. Ground ecosystems. Fresh-water ecosystems. Sea ecosystems. Whole biosphere as a global ecosystem. | 2 | | Quiz |
| 10 | 17.10.20 | The main directions of the biosphere evolution. Noosphere as a new stage of biosphere's development. | | | Quiz |
| 11 | 19.10.20 | Human ecology. Biosocial nature of human and environment. Human and population. Nature resources as a limiting factors of human survival. | 2 | | Question-answer |
| 12 | 24.10.20 | Anthropogenic ecosystems. Man and ecosystems. Agricultural ecosystems. Industrial and urban ecosystems. | 2 | | Quiz |

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| 13 | 31.10.20 | Environment and man's health. Influence of natural and environmental factors on the man's health. Influence of socio-environmental factors on man's health. Hygiene and man's health. | 2 | | Control writing |
| 14 | 02.11.20 | Module 2. Applied ecology. Environmental crisis. Indicators of environmental crisis. Global environmental problems. | 2 | | Quiz |
| 15 | 07.11.20 | Anthropogenic impacts on biosphere. Anthropogenic impacts on atmosphere. Environmental impacts of atmosphere pollution. | 2 | 5. Voronkov N.A., General, social and applied ecology: Textbook for students. M.: Agar, 2008. 6. Petrov K.M. General ecology. 2008. 7. U.Odum, Ecology. M.: 2007. 8. Stepanovskiy A.S. «General ecology» M.:2009. 9. Mavrishev V.V. «General ecology basics» Minsk, 2008. 10. Vernandskiy V.I. | Quiz |
| 16 | 14.11.20 | Anthropogenic impacts on hydrosphere. Hydrosphere pollution. Environmental influence on hydrosphere pollution. | 2 | | Lecture |
| 17 | 16.11.20 | Anthropogenic influence on lithosphere. Soil degeneration and consequences. | 2 | | Quiz |
| 18 | 21.11.20 | Anthropogenic influence on biotic communities. Environmental functions of forests. Anthropogenic influence on forests. | | | Quiz |
| 19 | 28.11.20 | Importance of wildlife in biosphere. The reasons of wildlife depopulation. | 2 | | Quiz |
| 20 | 30.11.20 | Special and extreme influences on biosphere. Environment pollution by waste production and consumption. Noise impact. Impact of radiation and electromagnetic influence. Extreme influence on biosphere. | 2 | | Quiz |
| 21 | 05.12.20 | Module 3 Environment and environmental protection. Basic principles of environmental protection and rational nature management. Environmental regulation. | 2 | | Interview |
| 22 | 12.12.20 | Engineering environmental protection. Atmosphere, hydrosphere, lithosphere and biomass protection. | 2 | Interview | |
| 23 | 14.12.20 | Special and extreme influences protection. Protection of environment from pollution by waste production and consumption. Protection from noise influence. Protection from | 1 | Interview | |

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| | | radiation and electromagnetic influence. | | Biosphere, different publications. | |
| | | | Total hours: | 45 hours | |

Student's individual work

| № | Weeks Months | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | Points |
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| | | October | | | | November | | | | | | December | | | | | | |
| 1 | Current control | 15 | | | | 15 | | | | | | 10 | | | | | | 40 points |
| 2 | SIW deadlines. | | | | | | | | | | | | | | | | | |