Наименование дисциплины и код: Б.2.3 Экология

Лектор	**Tiumonbaev Shaazadan Akylbekovich**
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Количество кредитов:	2 credits
Дата:	1st semester 2020-2021 Academic year
Цель и задачи курса	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. Course objectives: To give students systematic knowledge about interaction between nature and social environment; To teach them how to identify optimal requirements and needs in technology development in order to keep a balance of nature and environment; To teach students to analyze interactions between structural components of society and nature, as well to correlate society development goals with the environmental regularity; To teach students ability to help to make changes in the nature which will keep and develop biosphere in the future.
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 реквизиты	Without knowledge in math, chemistry and physics understanding of the course is impossible. It all makes necessary to study biological and other natural, humanitarian science and math.
Пост реквизиты	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	Student should know (professional competencies): - 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 engineering environmental protection;

	- 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 assessement, modules, student-self work, examination.
Литература: **Основная** **Дополнительная**	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	10.10.2020 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». 21.11.2020 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» 12.12.2020 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».
Примечание.	

Theme plan of the course in calendar

№	Date	Lessons topics	Num of hours	Literature	Control form
1	02.09.2020	Module 1. General ecology.		1. Korobkin	Quiz

		Introduction. The subject of environment, structure and objectives. Main environmental terms. Consistency.	2	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 4. Tihonov A.I., Environmental problems: Lectures. – Ivanovo, 2002.	
2	09.09.2020	Organism as a holistic system. The levels of biological organization. Organisms system and Earth biota.	2		Quiz
3	16.09.2020	Organism and environment interaction. Environment. Environment factors. General regularity of abiotic factors. General regularity of biotic factors. Limiting factors. The biomass resources as environmental factors.	2		Quiz
4	23.09.2020	Population. Static and dynamic parameters of population. Life expectancy. Dynamic of population growth. Environmental strategy of survival.	2		Quiz
5	30.09.2020	Biotic community. The specific structure of biocenosis. Spatial structure of biocenosis. Ecological niche.	2		Quiz
6	30.09.2020	Ecosystem lifestyle. Organization (structure) of ecosystems. Ecosystem energy. Productivity of ecosystems and biomass.	2		Quiz
7	07.10.2020	Dynamic and development of ecosystems. Successions. Sustainability of ecosystems.	2		Question
8	14.10.2020	Biosphere doctrine. Biosphere as a global ecosystem of the Earth. Biosphere extension and borders. The lifecycle in nature.	2		Question -answer
9	21.09.2020	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	28.10.2020	The main directions of the biosphere evolution. No sphere as a new stage of biosphere's development.			Quiz
11	04.11.2020	Human ecology. Biosocial nature of human and environment. Human and population. Nature resources as a limiting factors of human survival.	2		Question -answer
12	11.11.2020	Anthropogenic ecosystems. Man and ecosystems. Agricultural ecosystems. Industrial and urban ecosystems.	2		Quiz

13	18.11.2020	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	25.11.2020	Module 2. Applied ecology. Environmental crisis. Indicators of environmental crisis. Global environmental problems.	2		Quiz
15	02.12.2020	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.	Quiz
16	09.12.2020	Anthropogenic impacts on hydrosphere. Hydrosphere pollution. Environmental influence on hydrosphere pollution.	2		Quiz
17	16.12.2020	Anthropogenic influence on lithosphere. Soil degeneration and consequences.	2		Lecture
18	23.12.2020	Anthropogenic influence on biotic communities. Environmental functions of forests. Anthropogenic influence on forests.			Quiz
19	30.12.2020	Importance of wildlife in biosphere. The reasons of wildlife depopulation.	2		Quiz
		Total hours:	30 hours		

Student's individual work

№	Weeks	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Points
	Months	October				November						December						
1	Current control	15				15						10						40 points
2	SIW deadlines.	22.10 - 26.10. 2020.				26.12 – 30.12. 2020						10.12 – 14.12 2020						