



Наименование дисциплины и код: **Ecology**

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| Лектор | Tiimonbaev Shaazadan |
| Контактная информация: | shaazaada08@mail.ru; phone number: 0557700041; |
| Количество кредитов: | 2 |
| Дата: | <u>1,2 semestr 2021-2022</u> |
| Цель и задачи курса | Learning Goals The overarching learning goal is to be able to identify, investigate, and understand the interactions between organisms and the natural world. More specific goals include the following: Recognize the components and interactions of ecological systems at different scales. Explain how organisms are adapted to their physical and biological environment. Describe patterns of population growth and geographical spread, both qualitatively and quantitatively. Identify different classes of community-level interactions among organisms, and explain how these interactions might influence species coexistence. Calculate basic biodiversity metrics and interpret differences in biodiversity patterns among locations. Understand how local ecological interactions integrate with ecosystem-level and global planet. |
| Описание курса | This course covers, with a focus on both theory and empirics, advanced topics in basics of Ecology. Ecology as a scientific study is about acquiring knowledge and developing understanding, collecting facts and interpreting them to build up a picture of the world around us, and even within us. It is fairly obvious then, that we should hold a view on what biotic and abiotic factors interact with each other and how we can make sense of our surroundings. These views will be based on the philosophical stance that we take. |
| Пре реkwизиты | Prerequisites: for a deeper understanding of the problems of the Ecology is necessary to have knowledge in the field of science theory. |
| Пост реkwизиты | Postrequisites: the acquired knowledge of the subject can be used to write academic thesis. |

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| Компетенции | <ul style="list-style-type: none"> • analyze the data obtained during analysis; • take organizational and administrative decisions on received; • compile and synthesize scientific information; • apply basics Ecological studies; |
| Политика курса | |
| Методы преподавания: | Lecture Visual aids Technical training facilities |
| Форма контроля знаний | Modul, Exam |
| Литература: Основная | Worster, Donald. 1994. <i>Nature's economy: A history of ecological ideas</i> . 2d ed. Cambridge, UK: Cambridge Univ. Press. |
| Дополнительная | Glotfelty, Cheryll, and Harold Fromm, eds. 1996. <i>The ecocriticism reader: Landmarks in literary ecology</i> . Athens, GA: Univ. of Georgia Press. |
| СРС | Exam |
| Примечание. | |

**Календарно-тематический план распределения часов с указанием
недели, темы**

| No. | Name of sections and topics | Number of hours | |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--|
| | | Total | |
| 1. | Basics of Ecology | 2 | |
| 1.1. | The concept, stages of formation, Ecology. Classification of modern Ecology. | | |
| 2. | Theory of Ecology | 2 | |
| 2.1. | Increased interest in ecological questions across many academic disciplines has given rise to ecocriticism, a thriving and contentious academic field within literary studies. This subfield, which has produced influential work from medieval studies to postmodern and contemporary literary studies, investigates relationships between human beings and the nonhuman environment. | | |

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| | Ecology is the scientific study of the relationships that living organisms have with each other and with their natural environment. The word ecology was coined in 1866 by the German scientist Ernst Haeckel. Besides, there are many practical applications of ecology in natural resource management, city planning, community health, economics, and human social interaction. | |
| 3. | The basic concepts of ecology include the following: | 2 |
| 3.1. | All living organisms and the environment they live in are mutually reactive, affecting each other in various ways. | |
| 4. | Environment | 2 |
| 4.1. | Environment plays a major role in the critical stages of the life cycle of the species. | |
| 5. | The species | 2 |
| 5.1. | The species reacts to the environmental changes and adjusts itself structurally and physiologically. | |
| 6. | Species- specific activities | 2 |
| 6.1. | The environment also changes according to certain species-specific activities like growth, dispersal, reproduction, death, decay, etc. | |
| 7. | Plants and animals | 2 |
| 7.1. | All plants and animals are related to each other by their coaction and reaction on the environment.suggest improvements to the method | |
| 8. | Climatic conditions | 2 |
| 8.1. | Under similar climatic conditions, there may simultaneously develop more than one community, some reaching the climax stage, and others under different stages of succession. | |
| 9. | Ecosystem Ecology: | 2 |

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| 9.1 | A group of individual organisms of the same species in a given area is called a population. While, a group of populations of different species in a given area is called a community. | |
| 10. | Concepts of an Ecosystem: Following are the basic concepts of an ecosystem: | 2 |
| 10.1 | When both biotic and abiotic components are considered, the basic structural and functional units of nature are ecosystems. | |
| 11. | Interactions among organisms | 2 |
| 11.1 | There exist varying degrees of positive, negative and even neutral interactions among organisms at both inter- and intra-specific levels. | |
| 12. | Energy | 2 |
| 12.1 | Energy is the driving force of an ecosystem which is unidirectional or non-cyclic. | |
| 13. | The chemical components | 2 |
| 13.1 | The chemical components of the ecosystem move in a defined path called biogeochemical cycles. | |
| 14. | Growth of the organism | 2 |
| 14.1 | Successful growth of the organism is governed by limiting factors. The minimal and maximum levels of tolerance for all species vary seasonally, geographically and according to the population. | |
| 15. | Natural conditions | 2 |
| 15.1 | Under natural conditions, different kinds of population undergo succession. | |

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| | | | Литература | Подготовительные вопросы по модулям |
| | | | Литература: | |
| | | | Основная | Worster, Donald. 1994. <i>Nature's economy: A history of ecological ideas</i> . 2d ed. Cambridge, UK: Cambridge Univ. Press. |
| | | | Дополнительная | Glotfelty, Cheryl, and Harold Fromm, eds. 1996. <i>The ecocriticism reader: Landmarks in literary ecology</i> . Athens, GA: Univ. of Georgia Press. |
| | | | | Ecotheory and the Environmental Imagination Heide Estes <i>Amsterdam University Press, 2017</i> Library of Congress PN1065.E85 2017 |
| | ИТОГО: 30 | часов | | |

График самостоятельной работы студентов

| № | Недели Месяцы | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | Сумма баллов |
|---|------------------|---------|---|---|---|----------|---|---|---|---|-------|----|----|----|----|----|--------------|-----------------|
| | | January | | | | February | | | | | March | | | | | | | |
| 1 | Текущий контроль | 15 | | | | 15 | | | | | 10 | | | | | | 40 баллов | |
| 2 | Срок сдачи СРС*. | | | | | | | | | | | | | | | | | |

*СРС – самостоятельная работа студентов.

Примечание: График проведения рубежного и итогового контроля устанавливается Учебным отделом.