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| **STUDY PROGRAMME:** | **Professional Undergraduate Study Programme *Agriculture***  Specific field of study: Course foundations | |
| **Course:** | **PRINCIPLES OF ECOLOGY** | |
| **Course code:** 241275  **Course status:** compulsory | **Semester: I** | **ECTS credits: 2** |
| **Course holder:** | **Zvjezdana Augustinović,** Ph. D.,professor of professional studies | |
| **Modes of delivery:** | **Number of hours** | |
| Lectures | 15 | |
| Seminars | 15 | |

**Course objectives:** Introduce students to the basic ecological principles and laws, as well as the interactions between organisms and their environment. The goal is also to develop awareness of the necessity of environmental conservation.

**Course content**

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|  | **Course units** | **Modes of delivery:** | | | **Places of delivery** |
| **L** | **E** | **S** |
| 1. | Introduction to the Course: Course objectives and tasks, course content, literature, methods of knowledge assessment. | 1 |  |  | Lecture hall |
| 2. | Ecology: Definition, significance, basic concepts, classifications. | 1 |  |  | Lecture hall |
| 3. | Ecological Factors: Definition, classification. | 1 |  |  | Lecture hall |
| 3.1. | Abiotic Ecological Factors: Characteristics of relief, edaphic and climatic factors. | 1 |  |  | Lecture hall |
| 3.2. | Biotic Ecological Factors: Intraspecific and interspecific relationships (symbiosis, amensalism, commensalism, competition, parasitism, predation). | 2 |  |  | Lecture hall |
| 4. | Ecological Organizational Units: Individual, population, biocenosis, ecosystem, biome, biosphere. | 1 |  | 2 | Lecture hall |
| 4.1. | Population: Size, density, methods for assessing population density, spatial distribution, population movement, age structures, population fluctuation. | 2 |  | 1 | Lecture hall |
| 4.2. | Biocenosis: Qualitative and quantitative characteristics. | 1 |  | 1 | Lecture hall |
| 4.2.1. | Biodiversity: Importance of biological diversity, human impact on biological diversity. | 1 |  | 4 | Lecture hall |
| 4.3. | Ecosystem: Definition, types of ecosystems, trophic relationships, food chains, food webs, food pyramids, succession. | 1 |  | 3 | Lecture hall |
| 4.4. | Biosphere: Degradation of the biosphere, the role of humans in maintaining balance in the biosphere. | 1 |  | 4 | Lecture hall |
| 5. | Biogeochemical Cycles: Nitrogen, phosphorus, sulfur, carbon, oxygen, and hydrogen cycles. | 2 |  |  | Lecture hall |
|  | **In total** | **15** |  | **15** |  |

**L=Lectures, E=Excersises, S=Seminars**

**Learning outcomes (LO)**

LO 1. Present basic ecological concepts.

LO 2. Interpret the interdependence of living beings and their environment.

LO 3. Compare the adaptations of organisms to abiotic and biotic environmental conditions.

LO 4. Compare trophic relationships in an ecosystem.

LO 5. Present the cycling of matter in the biosphere.

LO 6. Critically evaluate the impact of humans on the ecosystem.

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Course holder:

Zvjezdana Augustinović, Ph.D., professor of professional studies

Križevci, July 2024