



"ISMAIL QEMALI" UNIVERSITY, VLORE
FACULTY OF TECHNICAL AND NATURAL SCIENCES
DEPARTMENT OF BIOLOGY

APPROVED
Head of the Biology Department
Dr. Aurora BAKAJ

COURSE PROGRAM BIO 361 Basics of Ecology

SUBJECT:	<u>Basics of Ecology</u>
Head/Teacher of the course:	Prof. Assoc. Hajdar Kicaj
Charge:	Lecture 3 hours, Seminar 1 hour, Laboratory 1 hour
Subject typology:	Disciplines of the characteristic formation of the program
Academic year/semester when it takes place:	Fall 2022
Subject type:	Forced
Study program:	Bachelor in Biology
Credits:	BIO 361
Subject code:	hajdarkicaj@yahoo.com
E-mail address of the holder/pedagogue:	

summary AND LEARNING OUTCOMES:

The subject of Ecology has as its main objective to acquaint the student with some of the basic concepts on the ecosphere. The student in the subject of ecology will gain knowledge on study methods in ecology, biotic and abiotic ecological factors, the flow or circulation of energy and matter in the ecosystem, etc. The objective of this course is to enable the student to correctly solve ecological problems, to be able to distinguish all the ecological factors that can affect a certain situation.

BASIC CONCEPTS:

- 1 Basic elements of ecology, ecological factor
- 2 Ecosystem, niche, habitat
- 3 Population dynamics

COURSE TOPICS:

Topics to be covered in the lectures:

- Topic 1** Ecological factors. Ecological adaptation, classification of ecological factors. Climate.
- Topic 2** Climate indicators, climatograms. The climate of some environments. The microclimate of the earth and its
- Topic 3** Temperature and light in the aquatic environment. The ecological role of temperatures.
- Topic 4** The action of temperature. Adaptation to extreme temperatures. The ecological role of moisture.
- Topic 5** The ecological role of light and moisture. Photoperiod. Effect of light intensity and wavelength.
- Topic 6** Secondary ecological factors. Climatic factors. The influence of the moon, other cosmic actions. Abiotic

- Topic 7** Mineral salts, osmotic adjustments. Edaphic factors.
- Topic 8** Food as an ecological factor. Quality, quantity and variations of the food regime. Demo - Ecological factors
- Topic 9** Population density. Intraspecies and interspecies biotic factors. Interspecies competition.
- Topic 10** Ecological niche, its dimensions. Predation, Parasitism, amensalism, commensalism, symbiosis, cooperation.
- Topic 11** Demographic strategies. The notion of adaptive strategy. Population changes.
- Topic 12** Sustainability of populations. Ecosystem and biocenosis. Successions.
- Topic 13** Structure and organization of biocenoses, definition of biocenoses. The notion of ecotone. Causes of the
- Topic 14** Energy flow and matter cycling in ecosystems. Ecological pyramids. Primary and secondary production.
- Topic 15** Biosphere. Pollution of nature. Water pollution and eutrophication. Natural balance. Biological warfare.

Topics to be covered in the seminars:

- Topic 1** Ecological factors. Climate
- Topic 2** Climatic indicators. Climate of some environments
- Topic 3** The ecological role of temperature in aquatic environments. Classification of lakes according to thermal
- Topic 4** The ecological role of temperature; Optimum and external temperatures.
- Topic 5** Effect of temperature on longevity. .The influence of temp on fecundity, larval development.
- Topic 6** The ecological role of wetlands. The influence of humidity on the development of animals.
- Topic 7** The ecological role of light. Secondary ecological factors.
- Topic 8** Variations in food regime and food chains.
- Topic 9** Intraspecific biotic factors. Interspecies biotic factors.
- Topic 10** Intraspecific biotic factors. Predation, parasitism.
- Topic 11** Populations, population changes.
- Topic 12** Ecosystems and biocenosis.
- Topic 13** The structure, organization and characteristics of the component species of a biocenosis.
- Topic 14** Energy flow within a food chain and primary and secondary production.
- Topic 15** Energy flow. Biosphere.

Topics that will be covered in other obligations related to the course: laboratory work, practices, course

- Topic 1** Building climate dramas. Determining the optimal area of a type. Climate indicators.
- Topic 2** Defense of the laboratory with the theme - Construction of climate dramas. Climate indicators.
- Topic 3** Calculation of the sum of the effective temperatures and the hatching date of the insect eggs.
- Topic 4** Defense of the laboratory on the topic - Calculation of the sum of effective temperatures and the date of
- Topic 5** Calculation of the number of generations a species can have in a year.
- Topic 6** Defense of the theme laboratory - Calculation of the number of generations that a species can have in a year.
- Topic 7** Characteristics of the population. Construction of life expectancy curves for women and men in the city of
- Topic 8** Defense of the laboratory on the topic - Construction of life expectancy curves for women and men in the city
- Topic 9** Construction of age pyramids for the city of Vlora and determination of the sex ratio.
- Topic 10** Defense of the laboratory with the theme - Construction of age pyramids for the city of Vlora and
- Topic 11** The law of population growth in the presence or absence of the limiting factor (curves).
- Topic 12** Calculation of frequency, constant, variety and equity in a biocenosis.
- Topic 13** Defense of the laboratory with the topic - Calculation of frequency, constant, variety and equity.
- Topic 14** Ecological pyramids. Pyramids of the number of individuals, biomass, energy and an ideal ecosystem.
- Topic 15** Defense of the laboratory with the theme - Ecological pyramids. Pyramids of the number of individuals.

FORM OF KNOWLEDGE CONTROL

control	Percentage assessment
Control I	20%
Annual assessment Seminars, laboratories, and	20%

Final check	60%
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ATTENDANCE:

The student, who results in less than 75% attendance for the period that belongs to each partial exam, the period for which he will be tested, will not be included in the corresponding exam, will be evaluated with M. If the student attended

COURSE FORMAT:

The subject will be evaluated on the basis of two partial exams, assignments and the final exam. Points earned will be cumulative. The exams will not be repeated, for any reason. If you miss an exam without any major reason, then you will

COMMUNICATION:

Homework exercises, course assignments and any other announcements will be given in class or at the official address of the "Ismail Qemali" University of Vlora on the Internet:www.univlora.edu.al or to the teacher's e-mail

Email: It is the duty of every student to check e-mail regularly. There will be tasks and notifications will be given only via e-mail.

HONESTY CODE:

Students are encouraged to work in groups for the exercises and tasks that are given to them. Copying from one another in exams, course assignments, homework, etc. is not allowed. Violation of this rule will be accompanied by punitive

LITERATURE**a)Mandatory basic literature:**

1. Peja N., 1999: Ecology. FSHN, UT. Tirana. ISBN 99927-

b) Recommended literature:

Thomas M. Smith, Robert Leo Smith, 2012: Elements of
Begon M., Harper I. (other) - 1992 Ecology (individual,
Barbault R. -1983 General ecology, Masson
Ramade F. -1984 Elements of ecology, fundamental
Ecology. Luan Hasani; Sazan Guri 2013

FINAL REMARKS FROM THE SUBJECT TEACHER

Homework exercises, coursework and any other notices will be given in class.

Students are also encouraged to work in groups for the homework exercises. Copying from one another in exams, coursework, homework, etc. is not allowed. Violation of this rule will be accompanied by punitive measures up to expulsion from the university.

The use of mobile phones and smoking in the auditorium is not allowed.

SUBJECT TEACHER

Prof. Assoc. Hajdar Kicaj

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