



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

Subject: Evolution theory (BIO 482)

Subject	Evolution theory
Lecturer	Dr. Blerta Laze
Hours per week	Lessons 3 hours, Seminars 2 hours
Tipologjia e lëndës	Formative disciplines chosen by students
Course/ semester	I/II
Program	Master of Science in Environmental Biology
Credites	8
Code of the subject	BIO 482
Lecturer email	blerta.laze@univlora.edu.al

Description:

The content of Evolution theory intend to give students an insight into pre Darwinian and Darwinian evolutionary viewpoints and further development of the evolution theory. In this course students will acquire knowledge on the genetic structure of the population, the evolution factors, selection against recessive homozygotes, lethal recessive, dominant alleles and heterozygotes. Phenomenas as genetic burden, sexual selection, genetic co-adaptation, concepts, models and ways of species forming. Finally we will treat issues related to the emergence of life, evolution of the first cells, evidence of evolution, species and macroevolution, human origins and human diversity.

BASIC CONCEPTS:

- 1 To study the evolutionary viewpoints
- 2 To study and classify the evolution factors
- 3 To study the types of selection
- 4 To study isolation mechanisms and types of speciation
- 5 To study the origin of life
- 4 To study human evolution

COURSE TOPICS:

Lessons course topics:

- Topic 1** Pre Darwinian evolutionary viewpoints. Darwinian Theory of Evolution
- Topic 2** Further development of the evolution theory
- Topic 3** Mendel and genes
- Topic 4** Chromosomal basis of inheritance
- Topic 5** The genetic structure of the population

- Topic 6** Classification of evolution factors. Mutational process. Migrations.
- Topic 7** Recombination and its disorders. Gene drift. The speed of evolution. Intensity of selection. Population fitness.
Selection against recessive homozygotes and lethal recessives. Action of selection against dominant alleles and heterozygotes. Selection in interaction with other factors of evolution. Genetic load. General data for the selection.
- Topic 8** Sexual selection. Natural selection and behavior. Examples of adaptation of organisms. Genetic adaptation. Organisms and their environment.
- Topic 9** Stages of the cognitive process for the type. Concepts of species. The biological model. Classification of isolation mechanisms. The two basic stages of speciation.
- Topic 10** Speciation methods. Formation of allopatric species. Sympatric and parapatric species. The role of natural selection in creating reproductive isolation. The evolutionary perspective of the species.
- Topic 11** Life origine and its essence. Definition of living. Evolution of the first cells.
- Topic 12** Evidence of evolution. Data of Paleontology and Biogeography. Data of Morphology and Embryology.
- Topic 13** Species and macroevolution. Phylogeny.
- Topic 14** Human origin and diversity.

Seminars course topics:

- Topic 1** Introduction to evolution theory
- Topic 2** Pre Darwinian evolutionary viewpoints. Darwinian Theory of Evolution
- Topic 3** Further development of the evolution theory
- Topic 4** Mendel an genes
- Topic 5** Chromosomal basis of inheritance
- Topic 6** The genetic structure of the population
- Topic 7** Classification of evolution factors. Mutational process. Migrations.
- Topic 8** Recombination and its disorders. Gene drift. The speed of evolution. Intensity of selection. Population fitness.
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EVALUATION OF THE SUBJECT

TEST	EVALUATION
Annual assessment: Attendance and Seminars	20%
Final test	80%

Grade evaluation is based on the conversion of the total grade to %, grade 5-10 progressively 41-100%. The student who has less than 75% attendance during the semester will not be included in the final exam, as he will be graded with M (Absence). If the student has attended the course, but does not appear in the next exam, he is assessed NP (Did Not Appear). The course will be evaluated on the basis of the annual evaluation and the final exam. Points earned will be cumulative. Exams will not be repeated for any reason. If you miss the final exam without a valid reason, then you will lose points for the exam you missed.

Grade	4	5	6	7	8	9	10
Vlerësimi	-40	41-50	51-60	61-70	71-80	81-90	91-100

LITERATURE

a) Basic literature:

Cycle of lectures: Dr. Blerta Laze

b) Recommended literature:

1. Teoria e evolucionit: Zyri Bajrami, Mynyr Koni;
2. Campbell Biology / Lisa Urry, Michael Cain, Steven Wasserman, Peter Minorsky, Jane Reece, 2016;

Lecturer

Dr. Blerta Laze

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