MODULE DESCRIPTION

General

School	Geotechnical Sciences
Department	Forest and Natural Environment Sciences

Module Information

Title	Molecular biology
Course Code	OPT.27
Level of Studies	Bachelor
Teaching Period	Spring semester
Attendance Type	Optional
Prerequisites	No

Orientation	Weekly Hours		Year	Semester	ECTS
	Lectures	Laboratory work			
Ecosystem Ecology & Landscape Rehabilitation Section	2	1	4th	8th	3

Faculty Instructor

Prof. Dr. Theodora Merou

Type of Module

- [x] General Foundation
- [ ] Specific Foundation / Core
- [ ] Knowledge Deepening / Consolidation

Mode of Delivery

- [x] Face to face
- [x] Distance learning

Digital Module availability

- [ ] E-Study Guide
- [ ] Departments Website
- [x] E-Learning

Language

	Teaching	Examination
Greek	☑	☑
English	☐	☐

Erasmus

☐ The course is offered to exchange programme students

Learning Outcomes

Students will understand the basic concepts of molecular biology that shape the organization of life, the gene flow and the nature of the genetic material.

List of General Competences

☑ Apply knowledge in practice

☑ Work autonomously

☐ Work in teams

☐ Work in an international context

☑ Work in an interdisciplinary team

☑ Respect natural environment

☐ Advance free, creative and causative thinking

Module Content (Syllabus)

The teaching course of molecular biology covers the following subjects:

- Genome content
- Genetic microarrays
- Basic aspects of molecular genetic
- Chromosome study
- Nucleosome study
- Basic aspects of heredity
- The role of RNA molecule in the biological systems and gene expression
- Epigenetic phenomena in phenotypic trait expression
- Getting acquaintance with the genes function, the regulation of genes expression, the transcription and translation of the genetic information, the evolutionary importance of the intermittent gene, recombinant DNA technology
- Getting acquaintance of the basic molecular biology and genetic engineering techniques

Educational Material Types

☑ Book

☑ Notes

☑ Slide presentations

☐ Video lectures

☑ Multimedia

☐ Interactive exercises

☐ Other:

Use of Information and Communication Technologies

- [x] Use of ICT in Course Teaching
- [ ] Use of ICT in Laboratory Teaching
- [x] Use of ICT in Communication with Students
- [ ] Use of ICT in Student Assessment

Module Organization

Please fill in the workload of each course activity

Course Activity	Workload (hours)
Lectures	50
Laboratory work	5
Field Trip/Short Individual Assignments	10
Independent Study	10
Total	75

* 1 ECTS unit corresponds to 25 hours of workload

Student Assessment Methods

- [x] Written Exam with Multiple Choice Questions
- [x] Written Exam with Short Answer Questions
- [ ] Written Exam with Extended Answer Questions
- [x] Written Assignment
- [x] Report
- [ ] Oral Exams
- [ ] Laboratory Assignment

Suggested Bibliography (Eudoxus and additional bibliography)

1. Tropp, B. (2015). Principles of Molecular Biology. Publisher: Jones & Bartlett Publishers.
2. Solomon, E.P., Berg, L.R., Martin, D.W. & Villee, C. (1996). Biology. Fourth Edition. Εκδότης: Saunders College Publishing.
3. Lewin, B. (2004). Genes VIII. Publisher: Benjamin Cummings; United States Ed edition.