COURSE OUTLINE

"LABORATOR COURSE I: LABORATORY INTRODUCTION"

1. GENERAL

SCHOOL	HEALTH SCIENCES		
DEPARTMENT	MOLECULAR BIOLOGY AND GENETICS		
LEVEL OF STUDIES	ISCED LEVEL 6		
COURSE CODE	**MBG120**	**SEMESTER**	1st
COURSE TITLE	LABORATORY COURSE I: LABORATORY INTRODUCTION		

TEACHING ACTIVITIES *If the ECTS Credits are distributed in distinct parts of the course e.g. lectures, labs etc. If the ECTS Credits are awarded to the whole course, then please indicate the teaching hours per week and the corresponding ECTS Credits.*	**HOURS/WEEK**	**ECTS CREDITS**
	4	6

COURSE TYPE *Background, General Knowledge, Scientific Area, Skill Development*	SKILLS DEVELOPMENT
PREREQUISITES:	NO
TEACHING & EXAMINATION LANGUAGE:	GREEK
COURSE OFFERED TO ERASMUS STUDENTS:	NO
COURSE URL:	https://eclass.duth.gr/courses/HEALTH111/

2. LEARNING OUTCOMES

Learning Outcomes

Please describe the learning outcomes of the course: Knowledge, skills and abilities acquired after the successful completion of the course.

Via the procedures of teaching (the formulation of questions, the discussion within the lab, the laboratory practice) and home study, the students will accomplish:

At the level of knowledge / understanding:

- To become familiar with the laboratory and the safety principals
- To become familiar with the basic laboratory equipment and the experimental manipulations of a biologist researcher
- To perform experiments and analyses that are related to the common laboratory techniques (e.g. the use of the optical microscope, the tissue stains, the preparation of solutions and their basic measurements, spectrophotometry e.t.c.)

General Skills

Name the desirable general skills upon successful completion of the module

Search, analysis and synthesis of data and information,
ICT Use
Adaptation to new situations
Decision making
Autonomous work
Teamwork
Working in an international environment
Working in an interdisciplinary environment
Production of new research ideas
Project design and management
Equity and Inclusion
Respect for the natural environment
Sustainability
Demonstration of social, professional and moral responsibility and sensitivity to gender issues
Critical thinking
Promoting free, creative and inductive reasoning

Searching, data and information analysis and composition with the use of necessary technologies
Autonomous and teamwork
Generation of new research ideas
Awareness for the natural environment
Promoting free, creative and inductive thinking

3. COURSE CONTENT

1. INTRODUCTION TO THE LABORATORY: SAFETY, LABORATORY INSTRUMENTS, USE OF LABORATORY PIPETTE
2. OPTICAL MICROSCOPY: INTRODUCTION
3. OPTICAL MICROSCOPY: STAINING TECHNIQUES
4. OPTICAL MICROSCOPY: PROKARYOTIC AND EUKARYOTIC STRUCTURES AND CELLS
5. EUKARYOTIC CELLS: PLASMOLYSIS/HEMOLYSIS
6. PREPARATION OF LABORATORY SOLUTIONS - TITRATIONS
7. SPECTROSCOPY/QUALITATIVE AND QUANTITATIVE ANALYSIS
8. WEAK ELECTROLYTES/HYDROLYSIS/PH MEASUREMENTS - BUFFER SOLUTIONS
9. ANIMAL DIVERSITY (STEREOSCOPE APPLICATIONS)

4. LEARNING & TEACHING METHODS - EVALUATION

TEACHING METHOD *Face to face, Distance learning, etc.*	Face to face
USE OF INFORMATION & COMMUNICATIONS TECHNOLOGY (ICT) *Use of ICT in Teaching, in Laboratory Education, in Communication with students*	Use of ICT technology for teaching and communication with the students
TEACHING ORGANIZATION *The ways and methods of teaching are described in detail.* *Lectures, Seminars, Laboratory Exercise, Field Exercise, Bibliographic research & analysis, Tutoring, Internship (Placement), Clinical Exercise, Art Workshop, Interactive learning, Study visits, Study / creation, project, creation, project. Etc.* *The supervised and unsupervised workload per activity is indicated here, so that total workload per semester complies to ECTS standards.*	
STUDENT EVALUATION *Description of the evaluation process* *Assessment Language, Assessment Methods, Formative or Concluding, Multiple Choice Test, Short Answer Questions, Essay Development Questions, Problem Solving, Written Assignment, Essay / Report, Oral Exam, Presentation in audience, Laboratory Report, Clinical examination of a patient, Artistic interpretation, Other/Others* *Please indicate all relevant information about the course assessment and how students are informed*	**Assessment language:** Greek **Assessment methods:** Written Examination with Multiple Choice Questions and short answer questions (100%)

Activity	***Workload/semester***
Tutoring	15
Perform experiments and analyses	107
Home study	58
Course Total	**180**

5. SUGGESTED BIBLIOGRAPHY

Title: Laboratory Course I – Section: “Security, theory and practice of laboratory exercises in General Cemistry”, K. Fylaktakidou

Title: Laboratory Course I – Section: “Introduction to Biology”, M. Alexiou Chatzaki

Course Notes
The course notes are available through the e-class platform.