COURSE OUTLINE

"LABORATORY COURSE II: BIOCHEMISTRY & GENETICS"

1. GENERAL

SCHOOL	HEALTH SCIENCES		
DEPARTMENT	MOLECULAR BIOLOGY AND GENETICS		
LEVEL OF STUDIES	ISCED LEVEL 6		
COURSE CODE	**MBG222**	**SEMESTER**	2nd
COURSE TITLE	LABORATORY COURSE II: BIOCHEMISTRY & GENETICS		
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/HEALTH113/		

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.

Upon successful completion of the course, students will be able to:

- become familiar with the use of basic laboratory equipment
- perform experiments that are related to Organic Chemistry, Biochemistry and Genetics interpret and analyzes them
- critically evaluate how to select the appropriate methods for resolving a scientific question

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. Protein Level Determination by the Bradford Method
2. Isolation of Milk Proteins. Isoelectric Precipitation - Heat Precipitation - Salting out
3. Determination of Phosphatase Enzyme Activity
4. Blood Groups: ABO & Rhesus (D) typing

5. Dosage Compensation: Observing Barr Bodies
6. Mendelian inheritance: the perception of the taste of bitterness
7. PCR – Electrophoresis of Nucleic Acids in Agarose Gel
8. Anatomy of Drosophila
9. Extraction: Separation of an Acidic and a Neutral Compound
10. Purification - Recrystallization of Benzoic Acid

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 Use of ICT in 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.*	

Activity	***Workload/semester***
Lectures	15
Laboratory exercises and analyses	150
Bibliographic research & analysis	15
Course Total	**180**

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*	**Student evaluation languages** Greek **Method (Formative or Concluding)** Summative **Student evaluation methods** Laboratory reports and written examination with multiple choice questions and short answer questions (100%)

5. SUGGESTED BIBLIOGRAPHY

Title: “Security, theory and practice of laboratory exercises in General Chemistry”, K. Fylaktakidou

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