COURSE OUTLINE "GENETICS OF ACQUIRED DISEASE AND TRANSLATIONAL MEDICINE"

1. GENERAL

SCHOOL	HEALTH SCIENCES		
DEPARTMENT	MOLECULAR BIOLOGY AND GENETICS		
LEVEL OF STUDIES	ISCED LEVEL 6		
COURSE CODE	**MBG514**	**SEMESTER**	7th
COURSE TITLE	GENETICS OF ACQUIRED DISEASE AND TRANSLATIONAL MEDICINE		

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**
	2	3

COURSE TYPE *Background, General Knowledge, Scientific Area, Skill Development*	SCIENTIFIC AREA
PREREQUISITES:	NO
TEACHING & EXAMINATION LANGUAGE:	GREEK
COURSE OFFERED TO ERASMUS STUDENTS:	YES
COURSE URL:	https://eclass.duth.gr/courses/ALEX01166/

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.

Course Objectives:

* To understand the relationship between genetics, molecular biology, developmental biology, bioinformatics, and medicine.
* To develop the connection between basic and clinical research with the aim of applying it to patient care.
* To translate clinical manifestations to the gene and genomic level and analyze modern therapeutic approaches.

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

* Understand the relationship between genetics, molecular biology, developmental biology, bioinformatics, and medicine.
* Comprehend and evaluate the link between basic and clinical research in the context of its application to patients.
* Translate the clinical manifestations to the level of genes and genomics and to analyze modern therapeutic approaches.
* Evaluate the genetic basis and evolution of cancer and understand the biology of the cancer cell.
* Understand the genomic behavior of cancer cells.
* Comprehend and evaluate the genetic basis and evolution of neurodegenerative diseases.
* Read, understand, and interpret contemporary literature in the field.
* Present the key points of modern literature on topics related to acquired diseases and translational medicine.

General Skills

Name the desirable general skills upon successful completion of the module

Search, analysis and synthesis of data and information,	*Project design and management*
ICT Use	*Equity and Inclusion*
Adaptation to new situations	*Respect for the natural environment*
Decision making	*Sustainability*

Autonomous work *Teamwork* *Working in an international environment* *Working in an interdisciplinary environment* *Production of new research ideas*	*Demonstration of social, professional and moral responsibility and sensitivity to gender issues* *Critical thinking* *Promoting free, creative and inductive reasoning*
Search, analysis and synthesis of data and information, ICT Use Teamwork Production of new research ideas Promoting free, creative and inductive reasoning Apply scientific principles, methods and knowledge to medical practice and research	

3. COURSE CONTENT

* Introduction to the Genetics of Acquired Diseases. Translational Medicine.
* The Genetic Basis and Evolution of Cancer.
* The Biology of the Cancer Cell: From Normal to Cancer Cell.
* The Genomic Behavior of Cancer Cells.
* Advances in Understanding Cancer through OMICS.
* Cancer: Biomarkers and Therapeutic Approaches.
* Presentations and Discussions by Student Groups on Contemporary Topics in Translational Medicine and Cancer.
* The Genetic Basis and Evolution of Neurodegenerative Diseases, with an Emphasis on Alzheimer's Disease.
* Alzheimer's Disease: Modern Approaches and the Use of OMICS in Understanding the Neurodegenerative Disease.
* The Genetic Basis and Evolution of Neurodegenerative Diseases, with an Emphasis on Parkinson's Disease.
* Parkinson's Disease: Modern Approaches and the Use of OMICS in Understanding the Neurodegenerative Disease.
* Neurodegenerative Diseases and the Inflammatory Environment.
* Bibliographic Analysis by Student Groups on Topics from the Curriculum.

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 in Communication with 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	13
Interactive teaching	13
Bibliographic research and analysis	27
Project	37
Course Total	**90**

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,*	**Student evaluation languages** Greek **Method (Formative or Concluding)** Summative **Student evaluation methods**

Clinical examination of a patient, Artistic interpretation, Other/Others *Please indicate all relevant information about the course assessment and how students are informed*	Written Assignment (50%) Presentation in audience (50%)

5. SUGGESTED BIBLIOGRAPHY

Contemporary reviews and original publications in the scientific fields taught.