

## COURSE OUTLINE

### (1) GENERAL

<b>SCHOOL</b>	NATURAL SCIENCES		
<b>ACADEMIC UNIT</b>	BIOLOGY		
<b>LEVEL OF STUDIES</b>	UNDERGRADUATE		
<b>COURSE CODE</b>	BIO_HB2	<b>SEMESTER</b>	6/8
<b>COURSE TITLE</b>	HUMAN AND MEDICAL GENETICS		
<b>INDEPENDENT TEACHING ACTIVITIES</b> <i>if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits</i>		<b>WEEKLY TEACHING HOURS</b>	<b>CREDITS</b>
Theory		2	3
<i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).</i>			
<b>COURSE TYPE</b> <i>general background, special background, specialised general knowledge, skills development</i>	Scientific		
<b>PREREQUISITE COURSES:</b>	There is no prerequisite course, but good knowledge of Genetics I and II is desirable.		
<b>LANGUAGE OF INSTRUCTION and EXAMINATIONS:</b>	Greek language		
<b>IS THE COURSE OFFERED TO ERASMUS STUDENTS</b>	Yes, in English language		
<b>COURSE WEBSITE (URL)</b>	www.biology.upatras.gr		

### (2) LEARNING OUTCOMES

#### Learning outcomes

*The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.*

*Consult Appendix A*

- *Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area*
- *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B*
- *Guidelines for writing Learning Outcomes*

At the end of the semester, the students will have gain of issues relative to genetic diseases and understand:

1. The contribution of Genetics in Modern Medicine.
2. The role of mutation on genetic diseases.
3. The use of molecular methodology to understand genetic diseases.
4. The importance of genetic counselling to avoid birth of humans with genetic diseases.

### General Competences

Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?

Search for, analysis and synthesis of data and information, with the use of the necessary technology	Project planning and management
Adapting to new situations	Respect for difference and multiculturalism
Decision-making	Respect for the natural environment
Working independently	Showing social, professional and ethical responsibility and sensitivity to gender issues
Team work	Criticism and self-criticism
Working in an international environment	Production of free, creative and inductive thinking
Working in an interdisciplinary environment	.....
Production of new research ideas	Others...
	.....

- Autonomous work
- Teamwork
- Search, analyze and synthesize data and information, using the necessary technologies
- Promote free, creative and inductive thinking

### (3) SYLLABUS

1. Genetic pedigrees and genetic diseases.
2. Using molecular methodology in Medical Genetics.
3. Cytogenetics, Human chromosomes,-structural and numerical chromosome aberrations.
4. Sex determination and differentiation. Abnormalities on sex determination.
5. Developmental genetics.
6. Genetics of blood groups.
7. Hemoglobin genes. Hemoglobin diseases-thalassemia.
8. Inborn error of metabolism.
9. Genetics of the immune system disorders.
10. Cancer genetics.
11. Pharmacogenetics-Pharmacogenomics.
12. Behavioral Genetics.
13. Human genome project.
14. Gene therapy.
15. Prenatal analysis and genetic counselling.  
\*Παρουσίαση με χρήση πολυμέσων: Επιλεγμένη ύλη σχετική με γενετικά νοσήματα.

#### (4) TEACHING and LEARNING METHODS - EVALUATION

<p style="text-align: center;"><b>DELIVERY</b> <i>Face-to-face, Distance learning, etc.</i></p>	Face to face	
<p style="text-align: center;"><b>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</b> <i>Use of ICT in teaching, laboratory education, communication with students</i></p>	Lectures using slides and Power-Point presentations and support of learning through the e-class platform.	
<p style="text-align: center;"><b>TEACHING METHODS</b> <i>The manner and methods of teaching are described in detail.</i> <i>Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc.</i></p> <p><i>The student's study hours for each learning activity are given as well as the hours of non-directed study according to the principles of the ECTS</i></p>	<b>Activity</b>	<b>Semester workload</b>
	Lectures	26
	Writing and oral presenting of a scientific project	25
	Independent study	40
	<b>91</b>	
<p style="text-align: center;"><b>STUDENT PERFORMANCE EVALUATION</b> <i>Description of the evaluation procedure</i></p> <p><i>Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short-answer questions, open-ended questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other</i></p> <p><i>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</i></p>	<p>Theoretical written examinations at the end of the semester which evaluates student's acquired knowledge and critical and creating thinking. Greek grading scale: 1 to 10. Minimum passing 5.</p>	

#### (5) ATTACHED BIBLIOGRAPHY

<p>- Suggested bibliography: R. L. Nussbaum et al.: Thomson &amp; Thomson. «Genetics in Medicine» (Greek translation, 7<sup>th</sup> ed., Paschalidis Ed.)</p> <p>- Related academic journals:</p>
--