

COURSE OUTLINE

(1) GENERAL

SCHOOL	School of Applied Biology and Biotechnology		
ACADEMIC UNIT	Biotechnology		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	278	SEMESTER	6th
COURSE TITLE	VIRAL GENETICS		
INDEPENDENT TEACHING ACTIVITIES <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>	WEEKLY TEACHING HOURS	CREDITS	
Lectures	2,3	0,16	
Laboratory Exercises	2,3	0,09	
Assignments	1,5	0,06	
Total		5,00	
<i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).</i>			
COURSE TYPE <i>general background, special background, specialised general knowledge, skills development</i>	General background		
PREREQUISITE COURSES:	None Required		
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	Yes (in Greek)		
COURSE WEBSITE (URL)	https://mediasrv.aua.gr/eclass/courses/453/		

(2) LEARNING OUTCOMES

<p>Learning outcomes</p> <p><i>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.</i></p> <p><i>Consult Appendix A</i></p> <ul style="list-style-type: none"> <i>· Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area</i> <i>· Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B</i> <i>· Guidelines for writing Learning Outcomes</i>
<p>The course aims to the understanding of function of viral genetic material and the ways in which viruses and viral proteins interact with host cells in order to integrate, express their genetic material and reproduce them.</p> <p>The course focuses on the study of viral genome and viral proteome, explains the mechanisms and rates of viral mutations and viral drug resistance, and analyses viral evolution but also the virocentric evolution of species.</p> <p>By attending the course, the student will become familiar with basic concepts on viral infections and epidemiological patterns, a system's antiviral response, and the differences between the clinical outcomes and the research methods used for antiviral drug design and antiviral therapies in terms of their genetic material.</p> <p>Finally, the student learns about the current developments on gene therapy with viral delivery systems and understands the obstacles and ethical issues that need</p>

to be addresses concerning gene editing.

Upon successful completion of the course, the student will be able to understand the function and structure of the genetic material of the viruses and monitor the continuous developments of this scientific field that aims to find answers about the function and the reason / purpose of viruses.

Upon successful completion of the laboratory exercises, the student will be able to use online platforms (Vipr) for the application of the following analysis methods: multiple alignment of viral genomes, phylogenetic analysis of viral genomes, analysis of SNPs in viral sequences, metanalysis of viral genomes and sequence feature variants in viral proteins.

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

Adapting to new situations

Decision-making

Working independently

Team work

Working in an international environment

Working in an interdisciplinary environment

Production of new research ideas

Project planning and management

Respect for difference and multiculturalism

Respect for the natural environment

Showing social, professional and ethical responsibility and sensitivity to gender issues

Criticism and self-criticism

Production of free, creative and inductive thinking

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Others...

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- Retrieve, analyze and synthesize data and information, with the use of necessary technologies.
- Adaptation to new situations.
- Decision making.
- Work autonomously.
- Work in teams.
- Creation of novel research ideas.
- Design and implementation of research projects.

(3) SYLLABUS

- Viruses
- Viral genome
- Viral proteome
- Viral mutagenesis – Drug resistance
- Viruses and evolution
- Virus Infection and Viral Disease
- Principles of viral diagnosis
- Prevention and treatment of viral infections
- Specific Viruses
- Gene therapy
- Viral diseases and clinical scenarios

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY

Face-to-face, Distance learning, etc.

Face-to-face & synchronous and asynchronous learning online

<p>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY <i>Use of ICT in teaching, laboratory education, communication with students</i></p>	<p>Use of the e-learning Moodle system, with uploaded notes, lectures in videos, exercises for practice and communication with students.</p>	
<p>TEACHING METHODS <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>	Activity	Semester workload
	Lectures	30
	Laboratory Exercises	30
	Assignment	20
	Homework	45
	Course total	125
<p>STUDENT PERFORMANCE EVALUATION <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>I. Theory: Written final exam (50%) including:</p> <ul style="list-style-type: none"> - Multiple choice questions - Judgement Questions <p>II. Laboratory: Written final exam (30%) including:</p> <ul style="list-style-type: none"> - Multiple choice questions - Judgement Questions - Problem Solving <p>Assignment Presentation (20%)</p>	

(5) ATTACHED BIBLIOGRAPHY

Title	Virology, An Illustrated Colour Text (1 st edition)
Series	Illustrated Colour Text (ICT)
Authors	STEPHEN N.J. KORSMAN, GERT U. VAN ZYL, LOUISE NUTT, MONIQUE I.
	ANDERSSON, WOLFGANG PREISER
ISBN	9789605832001
Year	2018