

COURSE OUTLINE “VIROLOGY”

1. GENERAL

SCHOOL	HEALTH SCIENCES		
DEPARTMENT	MOLECULAR BIOLOGY AND GENETICS		
STUDY LEVEL	ISCED LEVEL 6		
COURSE CODE	MBG502	SEMESTER	7 th
COURSE TITLE	VIROLOGY		
TEACHING ACTIVITIES <i>In case credits are awarded to individual components of the course eg. Lectures, laboratory practicals, etc. If credit units are awarded for the whole course, indicate the weekly teaching hours and total credits</i>	HOURS/WEEK	ECTS CREDITS	
	2	3	
COURSE TYPE <i>General, Background, Scientific field course, Expertise Course, Skills Development etc</i>	SCIENTIFIC FIELD		
PREREQUISITE COURSES:	NO		
LANGUAGE OF TEACHING AND EXAMINATIONS:	GREEK		
THE COURSE IS OFFERED TO ERASMUS STUDENTS	NO		
COURSE WEBSITE (URL)	https://eclass.duth.gr/courses/ALEX01126/		

2. LEARNING OUTCOMES

<p>Learning outcomes</p> <p><i>Describe the learning outcomes of the course, the specific knowledge, skills and competencies that students will acquire after successfully completing the course. Refer to Appendix A.</i></p> <ul style="list-style-type: none"> • Description of learning outcomes for the course according to the level of study - refer to the European Higher Education Area Qualifications Framework • Descriptive Indicators of Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Annex B Curriculum Vitae Summary Guide
<p>The objectives of the course are:</p> <ul style="list-style-type: none"> • To acquire knowledge about the basic principles in Virology and to get familiar with the Biology of selected families of viruses • To gain knowledge about the basic molecular mechanisms underlying the virus-host interactions and to get familiar with the molecular basis of pathogenicity mediated by viral infections • To get acquainted with the utilization of viruses in Translational Medicine (gene therapy – development of vaccines) <p>LEARNING OUTCOMES:</p> <p>After successfully completing the course, students will acquire the following Knowledge, skills and competencies:</p> <ul style="list-style-type: none"> • They should know the main characteristics of viruses: Main properties of viruses – Structure of viruses – Nature and Transcription of viral genomes – Classification – Life cycle • They should know about the basic virus-host interactions, with emphasis in the host antiviral immune responses and the basic strategies of viral immune evasion – To understand the link to pathogenicity of viral infections • They should know about the Biology of selected viral families, Clinical manifestations, ways of viral spread, and about the prevention, diagnosis and treatment of viral infections, and molecular basis of pathogenicity • They should know and understand the strategies used in the design and construction of recombinant viruses as well as their importance for Translational Medicine (gene therapy, development of vaccines)

They should be able to combine and utilize the acquired knowledge, in order to be able to solve virology-related problem-based questions and to analyze experimental results in Virology.

General Skills

Which of the general competencies that the student will have acquired on the completion of the studies (see also the Diploma Supplement and below) are relevant to this course?

Research, analysis and synthesize of data and information, using the necessary technologies

Adaptation to new situations

Decision making

Autonomous work

Team work

Work in an international environment

Work in an interdisciplinary environment

Production of new research ideas

Project design and management

Respect for diversity and multiculturalism

Respect for the natural environment

Development of social, professional and moral responsibility and gender sensitivity

Promotion of free, creative and inductive thinking

- Research, analysis and synthesis of data and information, using the necessary technologies
- Production of new research ideas
- Promotion of free, creative and inductive thinking
- Decision making
- Autonomous work
- Adaptation to new situations
- Project design and management

3. COURSE CONTENT

1. Introduction – General properties of viruses: structure, classification, proliferation, life-cycle
2. Mechanisms of pathogenicity – host-virus interactions – antiviral actions
3. Positive-sense RNA viruses: family of picornaviruses (Picornaviridae)
4. Positive-sense RNA viruses: family of flaviviruses (Flaviviridae)
5. Negative-sense RNA viruses: Influenza virus
6. Positive-sense RNA viruses: family of retroviruses (Retroviridae)
7. DNA viruses: family of papillomaviruses (Papillomaviridae)
8. DNA viruses: family of herpesviruses (Herpesviridae)
9. Hepatitis viruses (HAV, HBV, HCV, HDV)
10. Vectorology – DNA recombinant viruses for gene transfer in gene therapy and immunotherapy
11. Special topics – Tumor viruses – Presentation of assignments/reports
12. Special topics - Virome– Presentation of assignments/reports
13. Special topics – Vaccines – Oncolytic viruses – Presentation of assignments/reports

4. TEACHING and LEARNING METHODS - EVALUATION

TYPE OF TRAINING <i>Face-to-face, Distance learning, etc..</i>	Face to face
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY <i>Use of ICT in teaching, laboratory education, and in communication with the students</i>	Use of ICT in teaching Use of ICT in communication with students
MODES OF DELIVERY <i>Describe the teaching methods in detail. Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, practicum, placements, clinical practice, art workshop, interactive teaching,</i>	Instructional teaching in conjunction with collaborative and interactive teaching strategies

<p><i>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	Workload/semester
	Lectures	26
	Essay writing	30
	Study and analysis of bibliography	30
	Seminars	4
	Course Total	90
<p>STUDENT PERFORMANCE EVALUATION</p> <p><i>Describe of the methods of evaluation language, methods of evaluation, types of exams, 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>Are evaluation criteria known to the students?</i></p>	<p>Student evaluation languages Greek</p> <p>Method (Formative or Concluding) Formative</p> <p>Student evaluation methods Written exam with multiple choice test (40%) Written Exam with Short Answer Questions (10%) Written Assignment (40%) Presentation in audience (10%)</p>	

5. SUGGESTED BIBLIOGRAPHY

in Greek language:

«**Εισαγωγή στη σύγχρονη Ιολογία**», μετάφραση των συγγραφέων Dimmock JN, Andrew EJ, Keith LN, Επιστ. επιμέλεια. Μήτκα Σ, Μπελούκας Α. Εκδόσεις University Studio Press Α.Ε., ISBN: 978-960-12-2481-7, Κωδικός βιβλίου στον Εύδοξο: 94644560.

«**ΙΟΛΟΓΙΑ-Εξερευνώντας τους Ιούς**», μετάφραση του συγγραφέα: Shors Teri, 1^η έκδοση/2020, Εκδόσεις Broken Hill Publishers Ltd., ISBN: 978-992-5575-176, Κωδικός βιβλίου στον Εύδοξο: 86053314.

«**ΙΟΛΟΓΙΑ: έγχρωμο εικονογραφημένο εγχειρίδιο**», μετάφραση των συγγραφέων: Korsman SNJ, Van Zyl GU, Nutt L, Andersson MI, Preiser AW, 1^η έκδοση/2017, Εκδόσεις ΠΑΡΙΣΙΑΝΟΥ Α.Ε., ISBN: 978-960-5832001, Κωδικός βιβλίου στον Εύδοξο: 68401258

«**ΙΟΛΟΓΙΑ**» της Καλκάνη-Μπουσιάκου Ε., 1^η έκδοση/2008, Εκδόσεις Γ. ΠΑΡΙΚΟΣ & ΣΙΑ Ε.Ε., ISBN: 978-960-286-977-2, Κωδικός βιβλίου στον Εύδοξο: 16445

Course notes:

Course lecture notes and lecture presentations are available through the *e-class* platform.