

COURSE OUTLINE FOR “BASIC AND TRANSLATIONAL IMMUNOLOGY”

1. GENERAL

SCHOOL	NATURAL SCIENCES AND HEALTH SCIENCES		
SEPARTMENT	CHEMISTRY AND MEDICINE		
LEVEL OF COURSE	POSTGRADUATE (MSc)		
COURSE CODE	BTI 217	SEMESTER OF STUDIES	SECOND
COURSE TITLE	BASIC AND TRANSLATIONAL IMMUNOLOGY		
INDEPENDENT TEACHING ACTIVITIES		WEEKLY TEACHING HOURS	ECTS CREDITS
	Lectures, seminars, laboratory exercises	2 (Lectures) 1 (Seminar) 1 (Laboratory)	5
COURSE TYPE	Fields of Science (Immunology) and Skills Development (perform and interpret experiments, learning immunological methods, learning to write scientific articles). (Semi Optional)		
PREREQUISITE COURSES:	Basic Cell Biology		
TEACHING AND ASSESSMENT LANGUAGE:	Greek. Teaching may be done in English if foreign students attend the program.		
IS THE COURSE IS OFFERED TO ERASMUS STUDENTS	YES		

2. LEARNING OUTCOMES

Learning outcomes
<i>At the end of the course the students will have:</i>
<ul style="list-style-type: none"> • Knowledge of current topics of basic and translational immunology. • Knowledge of the types of immunotherapies already applied to patients or they're being developed. • Knowledge and ability to plan experiments to solve problems related to immune disease pathogenesis. • Immune experimental methodology such as HLA typing, phenotypic analysis of immune cells, measurement of the concentration of cytokines and other proteins in peripheral blood and bodily fluids, and in cell culture supernatants. • Learn how to write scientific articles in immunology topics.
General Competences
<i>By the end of this course the student will, furthermore, have developed the following skills (abilities):</i>
<ul style="list-style-type: none"> • Ability to solve theoretical and practical problems requiring the application of combined skills. • Skills that will allow him/her to solve simple and complex problems.
<i>Generally by the end of this course the student will have developed the following general abilities:</i>
<ul style="list-style-type: none"> • Search for, analysis and synthesis of data and information, with the use of the necessary technology • Adapting to new situations • Team work • Decision-making • Working independently • Criticism and self-criticism

- Production of free, creative and inductive thinking

3. SYLLABUS

The cells of the immune system - types, functions, communication

Immune tolerance

Antibodies - types, functions

Vaccines

The HLA system

Malfunctions of the immune system:

- Hypersensitivity reactions
- Autoimmune diseases
- Neoplasias

Immunology of transplantation

The immune system and HIV/AIDS

Immunomodulation:

- Interventions at the molecular and cellular level
- Therapies with antibodies, artificial antigens (peptides)
- Transplantation of hematopoietic stem cells

Laboratory

- Learning peripheral blood cell phenotyping using flow cytometry and analysis of the results
- Small laboratory project entailing culture of peripheral blood cells, methods for isolation of cell populations, measurement of cytokine expression and secretion levels in isolated cell populations
- Learning HLA typing by PCR methods
- Learning to write scientific articles on an immunological topic

4. TEACHING and LEARNING METHODS - EVALUATION

DELIVERY	Face-to-face.	
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY	Lectures and tutorials using ICT (powerpoint). Laboratory education.	
TEACHING METHODS	<i>Activity</i>	<i>Semester workload (contact hours)</i>
	Lectures	26
	Seminars	13
	Laboratory	13
	Final examination	3
	Student's study hours for learning activity	70
	Course total (25 work load for each ECTS credit)	125
STUDENT PERFORMANCE EVALUATION	<p>1. The students get a grade at the end of the course with one of the following evaluation methods:</p> <ul style="list-style-type: none"> • The students are given 10 questions of which they have to answer 5 and hand in their answers within 2 weeks. • If the students opt to try and write a paper, they have to hand in their paper within 4 months to be evaluated. • Student attendance is taken into consideration for the final mark. 	

	<p>Greek grading scale: 1 to 10. Minimum passing grade: 5. Grades ≤ 3 correspond to ECTS grade F. Grade 4 corresponds to ECTS grade FX. For the passing grades the following equivalence normally holds with the ECTS passing grades: 5 = E, 6 = D, 7 = C, 8 = B and $\geq 9 = A$</p> <p>2. Greek language is used. For foreign students (e.g. Erasmus students) it can be done in English.</p> <p>3. Students with writing problems can be examined orally at the same day and hour with the written examination.</p>
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5. RECOMMENDED LITERATURE

- *Suggested bibliography:*

Textbook: Lippincott's Illustrated Reviews: Immunology", 2nd Edition by T. Doan, R. Melvold, S. Viselli, C. Waltenbaugh, 2014 (ISBN: 978-960-394-986-2). Responsible for the Greek Edition: Athanasia Mouzaki.

- *Related academic sources and journals:*

All scientific articles used in teaching and, also, all articles the students require if they write a report or paper are made available to them.