

ΔΙΠΑΕ ΦΟΡΕΑΣ ΔΙΑΣΦΑΛΙΣΗΣ ΚΑΙ ΠΙΣΤΟΠΟΙΗΣΗΣ ΤΗΣ ΠΟΙΟΤΗΤΑΣ ΤΗΣ ΑΝΩΤΕΡΗΣ ΕΚΠΑΙΔΕΥΣΗΣ CYQAA THE CYPRUS AGENCY OF QUALITY ASSURANCE AND ACCREDITATION IN HIGHER EDUCATION



Course Title	Pharmaceutical Immunology and Immunochemistry	
Course Code	PHA310	
Course Type	Compulsory	
Level	BSc (Level 1)/ MPharm (Level 2)	
Year	3 rd year/6 th semester	
Teacher's Name	Dr Gourni Maritsa	
ECTS	6 Lectures / week 3 Laboratories / 2	
Course Objectives	The main objective of the course is to help students to gain the theoretic knowledge needed in Pharmaceutical Immunology and Immunochemist enabling students to understand the latest trends in diagnosis, treatme and research related to Pharmacutical Immunology and Immunochemistry	xal ry, ent y.
Learning Outcomes	 At the completion of the course the student will be able to: Describe the evolution of pharmaceutical Immunology Immunochemistry over time and recognize their contribution to the advancement of pharmaceuticals and society in general. Become familiar with the terminology and the basic concepts pharmaceutical Immunology - Immunochemistry. Explain the association of innate and adaptive immunity and the role in the immune response. Describe the antigen-antibody interaction and how this interaction applies to immunodiagnosis. Identify the cells, the tissues and the organs of the immune system, their function, molecular biology, and their chemistry. Analyze the disorders of the immune system. Distinguish the role of various cells of the immune system, and the anti-inflammatory and inflammatory factors. Describe the use of antibodies in the treatment and the development of drugs that target specific cells or tissues. 	- of eir on ne he
Prerequisites	PHA203, PHA207 Required None	
Course Content	 Theory Introduction to Pharmaceutical Immunology and Immunochemistry Elements of the immune system. Functioning of organs and cells of the immune system. Antibodies and Adjunct Antibody Administration. 	<i> </i> .

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	Cellular responses in immunity.	
	 Antibodies as drugs and carriers of drugs. 	
	 Commercial antibodies used as drugs. 	
	Chemotherapy, radioimmunotherapy.	
	 Hypersensitivity and allergy to medicines. 	
	 Humoral and cellular immune deficiency. Cytokines, e.g. interleukins, interferons and immunotherapy 	
	 Infectious diseases. Vaccines, immune response, immunity duration, types of vaccines, vaccine technology. 	
	 Immunological agents as drugs, antibodies. 	
	 Immunodiagnosis and immunoassays. Inflammation and role of non-steroid anti-inflammatory drugs. Chemistry of antigens, immunoglobulins and antibodies. 	
	• Antibody-antigen interactions, e.g. precipitation, adhesion reactions. Biological - biochemical activities of antibodies, e.g. stabilization of the adjunct antibody. Autoimmune disease. Transplants. Pregnancy, cancer, nutrition and immunity	
	Laboratory experiments/exercises:	
	As part of the course, laboratory exercises are carried out on the course material for a better deepening and consolidation of the theoretical part. Indicative exercises are: blood cells - blood smear - staining – microscopy, measure lymphocyte count and type - measurement using Neubauer, blood group systems, rhesus Blood Group System, direct / indirect Coombs Tests, bacterial immunology using the Widal method.	
Teaching Methodology	The teaching of the course includes lectures for students to get the theoretical background and laboratory exercises in order to get a better understanding and comprehension of the main concepts of Pharmaceutical Immunology and Immunochemistry. Methods such as discussion, questions/answers, and pros/cons, are used to enhance student's participation. Detailed notes with PowerPoint are used for teaching purposes. In addition, image-rich material and short animations are used to better understand the content of Immunology and Immunochemistry.	
	The laboratory exercise is conducted in the biochemistry laboratory with the proper laboratory equipment and under the instructor's supervision. Appropriate preparation and demonstration by the laboratory supervisor is preceded by each laboratory exercise. The assessment of laboratory exercises includes laboratory reports submitted by each student at the end of each lab exercise.	
Bibliography	(a) Textbooks:	
	 Ανοσολογία (2021) 9^η Έκδοση, David Male Stokes Peebles Victoria Male. Εκδόσεις: ΧΑΡΙΤΟΣ ΧΡ. ΠΑΝΑΓΙΩΤΗΣ 	

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ΔΙΠΑΕ ΦΟΡΕΑΣ ΔΙΑΣΦΑΛΙΣΗΣ ΚΑΙ ΠΙΣΤΟΠΟΙΗΣΗΣ ΤΗΣ ΠΟΙΟΤΗΤΑΣ ΤΗΣ ΑΝΩΤΕΡΗΣ ΕΚΠΑΙΔΕΥΣΗΣ THE CYPRUS AGENCY OF QUALITY ASSURANCE AND ACCREDITATION IN HIGHER EDUCATION		
	 Publisher: W. H. Freeman, 8th ed, 2018 Kuby Immunology. J. Punt, S. Stranford, P. Jones, J. Owen. Publisher: W. H. Freeman, 8th ed, 2018 "Ανοσολογία Kuby", (2013), Τ. Kindt, R. Goldsby, B. Osborine. Εκδοτικός Οίκος: Ιατρικές Εκδόσεις Πασχαλίδης. "Ανοσολογία", (2005), 4th ed., Μ. Παυλάτου, Ιατρικές Εκδόσεις Λίτσας (b) <u>References:</u> "Immunology", I. Roitt, J. Brostoff, D. Nale, Mosby; 6th edition, 2001. «Immunobiology». L.Xatziperou-Kourounaki- University Studio Dross Theosoleriki (1987)." 	
Accessment	Course Work, 50%	
Assessment	Mid-term Test 30% Lab reports 20% Final Exam 50%	
	For student evaluation, the overall grade is determined by a written midterm exam (30%), a laboratory grade (20%) and a written final exam (50%).	
	The mid-term exam is carried out between the 6 th and 8 th week and it mainly includes short answer questions and problem- solving questions and examines specific modules of the course.	
	As far as the laboratory grade is concerned, it comprises of the evaluation of the laboratory reports (60% of the laboratory grade) provided by the students for every experiment and a final laboratory examination (40% of the laboratory grade) which mainly includes short answer questions and problem-solving questions. In the laboratory reports, students are asked to describe the experiment procedure, to evaluate and analyse their results and to answer specific questions. The following criteria are taken into account when evaluating laboratory reports: (a) experimental data collection (30%), (b) data analysis (40%), and application of theory to draw conclusions (30%).	
	The final exam of the course is carried out during the 14 th -16 th week of each semester and includes short answer questions, decision questions, and problem-solving questions regarding all course modules.	
	The final assessment of the students is formative and summative and is assured to comply with the subject's expected learning outcomes and the quality of the course.	
Language	Greek, English	