



UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Biomedicina, Neuroscienze e Diagnostica avanzata		
ACADEMIC YEAR	2017/2018		
BACHELOR'S DEGREE (BSC)	BIOMEDICAL LABORATORY TECHNIQUES		
SUBJECT	GENERAL PATHOLOGY AND PATHOPHYSIOLOGY		
TYPE OF EDUCATIONAL ACTIVITY	B		
AMBIT	10341-Scienze e tecniche di laboratorio biomedico		
CODE	11749		
SCIENTIFIC SECTOR(S)	MED/04		
HEAD PROFESSOR(S)	MISIANO GABRIELLA	Ricercatore	Univ. di PALERMO
OTHER PROFESSOR(S)			
CREDITS	6		
INDIVIDUAL STUDY (Hrs)	90		
COURSE ACTIVITY (Hrs)	60		
PROPAEDEUTICAL SUBJECTS			
MUTUALIZATION			
YEAR	2		
TERM (SEMESTER)	1° semester		
ATTENDANCE	Mandatory		
EVALUATION	Out of 30		
TEACHER OFFICE HOURS	MISIANO GABRIELLA Monday 14:00 16:00 Dipartimento di Biomedicina, Neuroscienze e Diagnostica avanzata Bi.N.D - Sezione di Patologia Generale - Corso Tukory, 211 - 90134 Palermo Tuesday 14:00 16:00 Dipartimento di Biomedicina, Neuroscienze e Diagnostica avanzata Bi.N.D - Sezione di Patologia Generale - Corso Tukory, 211 - 90134 Palermo Wednesday 14:00 16:00 Dipartimento di Biomedicina, Neuroscienze e Diagnostica avanzata Bi.N.D - Sezione di Patologia Generale - Corso Tukory, 211 - 90134 Palermo		

DOCENTE: Prof.ssa GABRIELLA MISIANO

PREREQUISITES	The student will have a basic knowledge of biology and biochemistry to fully understand the pathogenic mechanisms which alter the natural homeostasis and lead to diseases and tumors
LEARNING OUTCOMES	Knowledge and understanding: Acquiring knowledge on the pathogenic mechanisms leading to disease Applying Knowledge and understanding: Being able to apply the correct diagnostic strategies in relation to the studied topics concerning the etiology and pathogenesis of the diseases. Making judgement: Demonstrate a critical approach with an oriented attitude to the correct application of laboratory techniques useful for the definition of the diagnostic processes. Communication: Acquiring the ability to correctly describe the disease conditions by means of an appropriate terminology. Ability to interact with other professionals involved in diagnostic and therapeutic processes in an efficient work group Lifelong learning skills: Ability to correctly integrate the acquired knowledges, aimed at fully understand the overall functioning of the human body and the onset of the disease state. Understanding applications and limitations of the biotechnology techniques in the biomedical field.
ASSESSMENT METHODS	The student will have to answer at least 2/3 questions posed orally by the examiner and these will be related to all the topics dealt with during the course, with reference to recommended textbooks. The examination evaluation will be scored in thirties along the following scheme: 30-30 cum laude: Excellent knowledge of the topics and correct use of language, analytical skills, ability to apply the knowledge to solve the proposed problems. 26-29: Good command of the subjects and correct use of language, ability to apply the knowledge to solve the proposed problems. 24-25: Basic knowledge of the main topics, proper language skills, limited ability to apply the knowledge to solve the proposed problems. 21-23: Lack of competence in the main topics dealt with during the course although getting the basic knowledge, satisfactory language skills, but limited ability to apply the knowledge to solve the proposed problems. 18-20: minimal basic knowledge of the main topics dealt with during the course and of the technical language, very low ability to apply the knowledge to solve the proposed problems. Failure: lack of an acceptable knowledge of the topics dealt with during the course.
EDUCATIONAL OBJECTIVES	Knowing the immune system and the defence strategies, the overall characteristics of innate and adaptive immunity. Acquiring knowledge on the strategies maintaining the natural homeostasis and understanding the molecular mechanisms generating disease Knowing the physiopathology of local and systemic inflammatory response, through the action of involved cells and mediators. Knowing the general characteristics of neoplasm and the host defence strategies against tumors in light also of the development of advanced anti cancer therapies. Knowing systemic pathology and disease of organ systems and the main diagnostic methodologies in the laboratory field.
TEACHING METHODS	Lessons
SUGGESTED BIBLIOGRAPHY	G.M. Pontieri - Patologia Generale e Fisiopatologia Generale per i corsi di Laurea in professioni sanitarie - III Edizione Piccin Editore Robbins – Fondamenti di Patologia e Fisiopatologia Autori: V. Kumar, A.K. Abbas, J.C. Aster MASSON 2013 9° edizione Sono inoltre a disposizione degli studenti le diapositive delle lezioni e articoli da riviste scientifiche

SYLLABUS

Hrs	Frontal teaching
3	Innate immunity, receptors and defence strategy. The complement system. The phagocyte system.
3	The adapted immunity: antigens and antibodies. T and B lymphocytes
3	The Major histocompatibility complex and the antigen presentation.
3	Receptors and accessory molecules of lymphocytes. Activation and effector mechanisms of lymphocytes. Cytokines as soluble mediators of immune system, cytokine receptors
3	The inflammatory response, acute inflammation, vascular reactions, edema, exudate and transudate, plasma protein- and cell-derived inflammatory mediators. Morphologic patterns of acute inflammation.
3	Chronic inflammation, leukocyte recruitment to sites of inflammation, adhesion molecules and cellular infiltration, Outcome of inflammation and repair mechanisms
3	Systemic effects of inflammation, fever and acute phase reaction.

SYLLABUS

Hrs	Frontal teaching
3	Hypersensitivity reactions: classification, description of activation and effector mechanisms. Hypersensitivity of I and II type.
3	Type III and IV hypersensitivity
3	Adaptation of cellular growth and differentiation: hyperthrophy, huperplasia, athrophy, metaplasia and dysplasia.
3	Neoplasia, nomenclature, classification and characteristics of benign and malignant neoplsms, anaplasia, tumor progression, metastasis, the TNM system.
3	Oncogenes and tumor suppressor genes, molecular pathogenesis of cancer, carcinogenesis, microorganism-induced carcinogenesis
3	Cancer and inflammation: stromal microenvironment and cancer. Tumor angiogenesis
3	The blood, composition, leukocytic formula, morphologic and functional characteristics of leukocytes. Hematopoyesis
3	Anemias, classification of anemia according to underlying mechanism, hemolytic anemias, thalassemia syndromes, extracorpuseular anemias, iron metabolism and related defects
3	Physiology of hemostasis, platelet activation, the coagulation cascade, the fibrinolytic system, hemostasis disorders, thrombosis and shock
3	The blood vessels, atherosclerosis, aneurismas, the hearth, the blood pressure and its regulation, the arterial hypertension, the cardiac hyperthrophy and the ischemic cardiopathies, angina, myocardial infarction
3	The lung, respiratory phisiology, the lung disease, ARDS, emphysema, chronic bronchitis, asthma
3	The gastrointestinal tract, Helicobacter pylori gastritis, malabsorption syndromes and inflammatory bowel diseases. Pathophysiology of liver inflammation. hepatitis and viral hepatitis.
3	The pancreas: endocrine and exocrine functions. The pathogenesis of the acute and chronic pancreatitis. Type I and II diabetes. The endocrine system, the hypophysis, the thyroid gland: hypo- and hyper-thyroiditis