UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Scienze e Tecnologie Biologiche, Chimiche e Farmaceutiche
ACADEMIC YEAR	2019/2020
MASTER'S DEGREE (MSC)	PHARMACY
SUBJECT	GENERAL AND CLINICAL PATHOLOGY AND MEDICAL TERMINOLOGY
TYPE OF EDUCATIONAL ACTIVITY	A
AMBIT	50321-Discipline Mediche
CODE	19170
SCIENTIFIC SECTOR(S)	MED/04
HEAD PROFESSOR(S)	VASTO SONYA Professore Associato Univ. di PALERMO
OTHER PROFESSOR(S)	
CREDITS	8
INDIVIDUAL STUDY (Hrs)	136
COURSE ACTIVITY (Hrs)	64
PROPAEDEUTICAL SUBJECTS	
MUTUALIZATION	
YEAR	3
TERM (SEMESTER)	1° semester
ATTENDANCE	Not mandatory
EVALUATION	Out of 30
TEACHER OFFICE HOURS	**VASTO SONYA** Monday 10:00 11:30 Dipartimento Stebicef, parco d'Orleans, Edificio 16, piano primo Wednesday 10:00 11:30 Dipartimento Stebicef, parco d'Orleans, Edificio 16, piano primo

DOCENTE: Prof.ssa SONYA VASTO

PREREQUISITES	Knowledge of Biochemical subjects as well as Human Physiology matters
LEARNING OUTCOMES	Knowledge and understanding skills Acquire advanced knowledge on the functioning of organs and apparatus, as a target of drug action. Ability to understand the specific language of these disciplines Capacity to apply knowledge and understanding Ability to use the knowledge acquired for the purpose of studying the mechanisms of action of drugs in different organs and apparatus. Ability to recognize and apply the methodological knowledge of General Pathology for the rational exercise of any activity directly and indirectly related to the health protection. Judgment autonomy Being able to evaluate the implications and results of studies and to clarify the functioning of organs and apparatus. To be able to independently evaluate the results of studies aimed at clarifying the etiopathogenetic mechanisms of diseases. Communicative Skills Ability to use the language of these disciplines, necessary to interact with other health professions, but also to illustrate the concepts of general pathology to public with no scientific background. Learning Skills Upgrade skills by consulting the industry's own scientific publications, in order to avoid obsolescence of acquired skills. Ability to follow, using the knowledge gained during the curriculum course, both second-level master's, and seminars and courses in depth in the field of General Pathology.
ASSESSMENT METHODS	Oral examination at the end of the session
EDUCATIONAL OBJECTIVES	Acquiring the skills needed to understand the etiopathogenetic mechanisms of diseases and alterations in structures, functions and control mechanisms at various levels of integration.
TEACHING METHODS	Frontal Lessons
SUGGESTED BIBLIOGRAPHY	ALBI E, AMBESI-IMPIOMBATO FS. Le basi cellulari e molecolari delle malattie. Ed Sorbona 2018 A. K. ABBAS, A.H. LICHTMAN Immunologia cellulare e molecolare, Ed. PICCIN Nuova Libraria S.p.A. – Padova, 2002

SYLLABUS

Hrs	Frontal teaching
4	Etiology, pathogenesis and pathophysiology : the anatomical and functional bases of diseases Homeostasis ,functional reserve and failure . cellular responses to harmful stimuli . Cellular damage ; causes and mechanisms ; subcellular response to injury ; intracellular accumulation and pathological calcification
6	The natural and specific immune response : cells and innate immune tissues . The importance of the barriers . The receptors of the innate immune system . General information on the inflammatory response : the inflammatory cells . Leukocytes : genesis , morphology and pathophysiology of lymphocytes , monocytes , neutrophils , eosinophils and basophils . The preparation of blood smears on slides . The differential count and its variations : normal values of individual populations , pathogenetic mechanisms of changes and pathophysiological significance . Structure and classes of antibodies
6	LPS and other types of noxae flogogene : the triggering mechanisms of inflammation . The Angiophlogosis : vascular changes . The cellular mediators and fluid phase The inflammation cells ; the adhesion molecules and cell migration ; phagocytosis . Exudates and transudate ; classification of edema . The healing process : the tissue repair and wound healing . The istoflogosi specific and granulomatous . Etiology of granulomas .
4	Complement activation through the classical pathway , activation via the alternative pathway ,activation via the lectin away , Le anaphylatoxins ; The control mechanisms of the complement system ; Deficiency of complement molecules . The blood groups : The AB0 system , the Rh system; Maternal-fetal incompatibility , HLA and diseases
4	The Lymphocytes : The ontogeny of lymphocytes , lymphocyte classes , T lymphocytes , natural killer lymphocytes , B lymphocytes ; Phases of the immune response, MHC-HLA
4	Serum electrophoresis and pathophysiology of serum proteins . The albumin and globulins . The acute phase proteins . Role in the monitoring of inflammatory processes ; ESR . blood diseases and coagulation
4	Fever and other central effects of acute phase responses : hypothalamic effects of cytokines . Pathophysiology of body temperature and hyperthermia. Pyrogens and cryogenic . Types of fever and meaning, Mediterranean Familiar Fever (FMF)
6	Anatomy and functions of primary and secondary lymphoid organs . General characteristics of the cytokines . Classification of cytokines . Cytokines that regulate innate immunity and inflammatory immune. Cytokines that regulate specific immunity . Hematopoietic cytokines . Cytokines that regulate cell migration (chemokines) . Chemotaxis and adhesion molecules General characteristics of the antigens ; Recognition of antigens ; Recognition of antigens by lymphocytes . Structure and functions of antibodies . Recognition of antigens by T lymphocytes

SYLLABUS

Hrs	Frontal teaching
4	The type I hypersensitivity : allergens , IgE antibodies , mast cells and basophils , the mediators of hypersensitivity reaction type I ; predisposition to allergies, ASMA . Hypersensitivity type II (MEN). The Type III hypersensitivity . The type IV hypersensitivity. immunological tolerance mechanisms, Rheumatoid arthritis.
6	The cell cycle : cell cycle control . cellular responses to harmful stimuli . Atrophy, hyperplasia , hypertrophy and metaplasia . General characteristics of cancer cells . The concept of cancer . benign and malignant tumors . Classification of tumors . Staging of tumors . Epidemiology of human cancers . Metastasis . metastatic diffusion mode : Dissemination through the blood , lymph , transcelomatica , subarachnoid , canalicular . tumor markers ;. protein markers : CEA (carcinoembryonic antigen) , CA 19-9 , Alpha - fetoprotein (AFP) , chorionic gonadotropin , CA 125 263, prostate specific antigen (PSA) , carcinogens and carcinogenesis, chemical carcinogenesis . physical carcinogenesis . biological carcinogenesis : DNA tumor viruses , oncogenes Virus RNA.
4	Oncogenes and tumor suppressor genes ; Oncogenes : History , Functions of proto - oncogenes , growth factors and receptors , cytoplasmic and nuclear components along the way of the signaling cell , genes involved in the control of apoptosis and cell cycle , mutations that convert proto - oncogenes to oncogenes , Structure of oncogenes . Tumor suppressor genes : The Rb gene, p53 gene, other tumor suppressor genes , Importance of tumor suppressor genes in human disease
12	Endocrine disorders: goitre , hyperthyroidism , hypothyroidism (Hashimoto , Basedow-Graves) thyroid cancer , Genetic disorders: alpha 1-antitrypsin deficiency,Hemochromatosis, COPD(Chronic obstructive pulmonary disease) Anemias disease and classification and Pathophysiologic Consequences, Nutritional Anemias and Anemia of Chronic Disease, Hemolytic Anemias, Hemoglobinopathies and Thalassemias Gastric disease: ulcers , celiac disease, Cirrhosis Non- inflammatory Edema ,Kidney diseases, Alzheimer disease