UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Scienze e Tecnologie Biologiche, Chimiche e Farmaceutiche
ACADEMIC YEAR	2021/2022
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 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 tools ognitive and methodological rigor of General Pathology for the rational exercise of any activity directly and indirectly related to the protection of health. -Judgment autonomy Being able to evaluate the implications and results of studies 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 physiology and general pathology to an unknowing public. -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 Physiology and General Pathology
ASSESSMENT METHODS	Valuation and Policies: The evaluation is in thirty-five, as shown in the diagram below. Excellent 30- 30 and praise excellent knowledge of subjects, excellent language skills, good analytic ability, the student is able to apply knowledge to solve the problems proposed; very good 26-29 - Good command of subjects, full language skills, the student is able to apply knowledge to solve the proposed problems. Good 24-25 - Basic Knowledge of Key Arguments, Discrete Language Properties, with limited ability to apply knowledge to the problem solving themselves. Satisfactory 21-23 - He does not fully master the main subjects of the teaching but possesses knowledge, satisfying language skills, poor ability to apply the acquired knowledge independently. Enough 18-20 - Minimum basic knowledge of the main topics of teaching and technical language, little or no ability to apply the acquired knowledge. Insufficient She does not have an acceptable knowledge of the contents of the topics taught in teaching.
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 teaching
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 Materiale didattico (dia e pdf distribuiti a lezione)

SYLLABUS

Hrs	Frontal teaching
2	Etiology, pathogenesis and pathophysiology : the anatomical and functional bases of diseases Homeostasis ,functional reserve and failure, the disease e its evolution.
4	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
2	Complement activation through the classical pathway , activation via the alternative pathway, ,activation via the lectin away, anaphylatoxins ; The control mechanisms of the complement system ; Deficiency of complement molecules

SYLLABUS

Hrs	Frontal teaching
4	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
6	LPS and other types of inflammatory elements : triggering mechanisms of inflammation . Angiophlogosis : vascular changes . The cellular and fluid phase mediators, cell migration ; phagocytosis . Exudates and transudate ; classification of edema . The healing process : tissue repair and wound healing . The chronic inflammation local and systemic . Etiology of granulomas .
4	Lymphocytes: Ontogenesis of lymphocytes, Classes of lymphocytes, T lymphocytes, Natural Killer lymphocytes, B lymphocytes; Phases of primary and secondary immune response, General characteristics of antigens; Antigen recognition; Recognition of antigens by lymphocytes. immunological synapses
6	Type I hypersensitivity: allergens, IgE antibodies, mast cells and basophils, the mediators of the type I hypersensitivity reaction; predisposition to allergies. Type II hypersensitivity. Type III hypersensitivity. Type IV hypersensitivity. Immunological tolerance: mechanisms. Autoimmunity: etiology and pathogenesis; organspecific and non-organ autoimmune diseases. Examples Rheumatoid arthritis and myasthenia gravis. Blood groups: The AB0 system, The Rh system; Maternal-fetal incompatibility; The HLA system. HLA and diseases
8	Serum electrophoresis and pathophysiology of serum proteins . The albumin and globulins . The acute phase proteins . Role in the monitoring of inflammatory processes ; ESR Anemia, Hypertension, CVD, ICC, atherosclerosis
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), malignant ipertermia
4	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 , tumor's epidemiology
6	tumor micro-enviroment, Metastasis, Metastatic diffusion: Dissemination by blood, lymphatic, transcelomatic, subarachnoid, canalicular route. Tumor markers; Elements K-lung, K-breast K-colon K-.prostatic
4	Carcinogens and carcinogenesis, chemical, physical and biological : DNA and RNA Virus tumor viruses. Oncogenes and tumor suppressor genes; Oncogenes: Historical notes, Functions of proto-oncogenes, Growth factors and receptors, cytoplasmic and nuclear components present along the cellular signaling pathway, genes involved in the control of apoptosis and the cell cycle, Mutations that transform proto-oncogenes into oncogenes, Structure of oncogenes. Tumor suppressor genes: The Rb gene, The p53 gene, Other tumor suppressor genes, Importance of tumor suppressor genes in human pathology
2	Endocrine disorders: goiter, hyperthyroidism, hypothyroidism, (Hashimoto, Basedow, Graves) thyroid tumors. Diabetes mellitus: Adrenal: Cushing's disease, Gastric pathologies: ulcer and Helicobacter pylori and celiac disease
2	Genetic disorders: alpha 1 antitrypsin deficiency, hemochromatosis, Cyrrosis, Lung diseases: COPD and asthm
3	Alzheimer's disease
3	Overview of kidney diseases (IRA and IRC)