



UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Scienze e Tecnologie Biologiche, Chimiche e Farmaceutiche		
ACADEMIC YEAR	2022/2023		
MASTER'S DEGREE (MSC)	CHEMISTRY AND PHARMACEUTICAL TECHNOLOGIES		
SUBJECT	PHARMACOLOGY AND PHARMACOGNOSIS		
TYPE OF EDUCATIONAL ACTIVITY	B		
AMBIT	50322-Discipline Biologiche e Farmacologiche		
CODE	03148		
SCIENTIFIC SECTOR(S)	BIO/14		
HEAD PROFESSOR(S)	LABBOZZETTA MANUELA	Ricercatore	Univ. di PALERMO
OTHER PROFESSOR(S)			
CREDITS	6		
INDIVIDUAL STUDY (Hrs)	102		
COURSE ACTIVITY (Hrs)	48		
PROPAEDEUTICAL SUBJECTS			
MUTUALIZATION			
YEAR	1		
TERM (SEMESTER)	2° semester		
ATTENDANCE	Not mandatory		
EVALUATION	Out of 30		
TEACHER OFFICE HOURS	LABBOZZETTA MANUELA Wednesday 09:00 11:00 Viale delle Scienze. Edificio 16.		

DOCENTE: Prof.ssa MANUELA LABBOZZETTA

PREREQUISITES	Knowledge of plant and animal Biology, General Chemistry, human anatomy and human physiology notes
LEARNING OUTCOMES	Knowledge and understanding: Morphological Identification of drugs and description of its origin, chemical structures and mechanism of action of the active ingredients. Ability to apply knowledge and understanding: Knowledge applied in farmacognostiche and therapy, know food and drug-drug interactions, assess natural synthetic medications. Autonomy of judgement: To be able to evaluate the answers to practical or theoretical problems mainly in the field of pharmaceutical technology and a pharmacist also based on limited information or incomplete. Communication skills: Ability to communicate clearly and with appropriate language with interlocutors and non-specialists. Be able to act as health professionals and experts in the prevention of and information Farmacognostico field An ability to learn: Ability to update with consultation of scientific publications BIO\14. Ability to participate, using the knowledge gained, both in training, both specialized seminars in the field of Pharmacology and modern phytotherapy
ASSESSMENT METHODS	Oral examination The examinee must respond to at least two/three questions posed orally, on all parts of the object program, with reference to the recommended texts. Final assessment aims to assess whether the student has knowledge and understanding of the topics, have acquired interpretative jurisdiction and autonomy of judgement of specific cases. The threshold of sufficiency will be achieved when the student knowledge and understanding of monsters topics at least in general outline and application expertise as regards minimum resolution of specific cases; must also possess such ability and argumentative enable the transmission of his knowledge to the examiner. Below that threshold, the exam will be insufficient. As, however, the examinee with argumentative and display capabilities can interact with the examiner, and the more his knowledge and application capabilities ranging in detail discipline subject to audit, the more the assessment will be positive. The evaluation takes place out of thirty according to the following scheme: 30-30 and honors. Excellent Excellent knowledge of the contents of teaching. The student demonstrates analytical-synthetic capacity and is able to apply the knowledge to solve problems of high complexity A – A+ Excellent 27-29 Great Excellent knowledge of the contents of teaching and great language properties. The student demonstrates analytic-synthetic capacity and able to apply the knowledge to solve problems of average complexity and, in some cases, even high B Very good 24-26 Good Good knowledge of the content of teaching and good property of language. The student is able to apply knowledge to solve problems of media complexity C Good 21-23 Discrete Good knowledge of the content of teaching, certain cases limited to the main topics. Acceptable ability to use the specific language of the discipline and to apply their acquired knowledge D Satisfactory 18-20 Sufficient Minimal knowledge of the contents of teaching, often limited to major topics. Modest capacity to use the specific language of the discipline and of apply the

	knowledge gained E Sufficient 1-Low 17 * Does not have acceptable knowledge of the content main teaching. Very little or no capacity to use the specific language of the discipline and of apply the knowledge gained F Fail * Exam failed
EDUCATIONAL OBJECTIVES	The goal is to acquire training provided students with the skills necessary to understand the general pharmacology, pharmacokinetics and pharmacodynamics of the most important herbal drugs. Form the student by providing adequate knowledge that will make it able to know to evaluate the mechanisms, interactions and toxic effects of natural drugs. At the end of the course the student will have developed the ability to communicate clearly and with appropriate language with specialists and be able to present itself as a practitioner and expert in the prevention of and information field Farmacognostico.
TEACHING METHODS	Lectures
SUGGESTED BIBLIOGRAPHY	M. Heinrich, G. Barnes Fondamenti di Farmacognosia e Fitoterapia Clementi, Fumagalli Farmacologia Generale (UTET) Farmacologia. A cura di H.P. Rang, M.M. Dale, J.M. Ritter, R.J. Flower. Ottava edizione. Elsevier Masson, Milano Farmacologia Principi di base e applicazioni terapeutiche. F. Rossi- V. Cuomo- C. Riccardi edizione Minerva Medica

SYLLABUS

Hrs	Frontal teaching
8	General Pharmacology. Objectives of discipline and organisation. Definition of medication Pharmacokinetics: primary mechanisms of absorption of drugs and Xenobiotics. Ionization and absorption: Henderson-Hasselbach equation and its applications. Pharmaceutical forms and absorption. Routes of administration of drugs. Distribution of medicines. Apparent volume of distribution. Kinetics of order I and 0. Half-life. Clearance. Drug metabolism. Cytochromes P-450 (mixed function oxygenase). Metabolic phase I transformations (Functionalization) and phase II (conjugation). Renal excretion, biliary and other routes of elimination.
4	Pharmacodynamics: types of receptors. Drug-receptor complex and biological activity. Affinity and intrinsic activity and power. Agonists, partial agonists and antagonists, allosteric modulators. Functional antagonism and antidotismo. Dose-response curves: gradual curves and quantal.
2	Adverse drug reaction. Drug-drug interactions
4	Pharmacognosy General Definition of Pharmacognosy. Concept of drugs in Pharmacognosy. Plant and animal drugs: origins, evolution and relevance of their jobs. Factors of variability of herbal drugs. Collection, preparation and storage of drugs. Factors influencing the content in active principles of drugs: cultivation, climate, soil, selection, hybridization, polyploidy, etc; collection (harvesting techniques, balsamic time); reservation (drying, freeze drying, pulverization, stabilization of drugs). Quality control according to the Italian official pharmacopoeia and Toxicological analysis. Bioassay. Transgenic plants. The Phytovigilance. Early warning system. Uses the principles of plant origin as the starting material for Hemi-synthesis and how molecular models for new drugs. The main preparations obtained from herbal drugs.
8	Pharmacognosy special Alkaloids: Definition, characteristics Opium Alkaloids : morphine, codeine, Thebaine, Noscapine, Papaverine Alkaloids agonists and antagonists of the parasympathetic system: pilocarpine, Atropine, scopolamine, Physostigmine, Curare Alkaloids Sympathomimetic action: cocaine, Ephedrine Alkaloids, Synephrine, Purine alkaloids: Caffeine, theobromine, Theophylline core Nicotine Hallucinogenic acting drugs: Psilocybe, Amanita muscaria, Peyote, Ergot alkaloids, Hawaiian baby woodrose, Dimetiltriptamine, Salvia Divinorum, Bufotenine, Kratom Cannabinoids: endogenous cannabinoids, THC System
8	GLYCOSIDES: definition, features Drugs containing glycosides miocardiocinetici: digital, Strophanthus, Scilla, Hawthorn Drugs containing Anthraquinone compounds glycosides: Aloes, Cascara, Frangula, rhubarb, Senna Urinary tract disinfectant: bearberry. Cranberry Hibiscus

SYLLABUS

Hrs	Frontal teaching
10	HERBAL MEDICINE: Defining Phytocomplex Sedative and anxiolytic action phytocomplexes: Valerian, Passiflora, red poppy, apigenin, lemon balm, Linden Phytocomplexes to antidepressant action: Hypericum extract, Griffonia, Rhodiola Phytocomplexes and flavonoids with antioxidant, protective and venotropa: Resveratrol, milk thistle, Anthocyanosides (Blueberry), garlic, pineapple, grapefruit, milk thistle, artichoke, black currant. ANTI-INFLAMMATORY PHYTOCOMPLEXES salicin, Devil's claw, Arnica, feverfew NATURAL STATINS: Monacolin K (Red Rice)
2	Antitumor drugs of plant origin
2	ANIMAL DRUG Ancrod, Conotoxin, Exenatide, Hirudin, Imcporina, Pseudina, Mellitin