



# UNIVERSITÀ DEGLI STUDI DI PALERMO

<b>DEPARTMENT</b>	Biomedicina, Neuroscienze e Diagnostica avanzata		
<b>ACADEMIC YEAR</b>	2023/2024		
<b>BACHELOR'S DEGREE (BSC)</b>	MEDICAL AND IMAGE DIAGNOSTICS AND RADIOTHERAPY TECHNIQUES		
<b>INTEGRATED COURSE</b>	PHARMACOLOGY, CONTRAST MEDIA AND ANAESTHESIOLOGY - INTEGRATED COURSE		
<b>CODE</b>	15287		
<b>MODULES</b>	Yes		
<b>NUMBER OF MODULES</b>	3		
<b>SCIENTIFIC SECTOR(S)</b>	BIO/14, MED/41, MED/36		
<b>HEAD PROFESSOR(S)</b>	GALIA MASSIMO	Professore Ordinario	Univ. di PALERMO
<b>OTHER PROFESSOR(S)</b>	CALASCIBETTA ANNA	Ricercatore	Univ. di PALERMO
	GALIA MASSIMO	Professore Ordinario	Univ. di PALERMO
	RAINERI SANTI	Professore Associato	Univ. di PALERMO
	MAURIZIO		
<b>CREDITS</b>	9		
<b>PROPAEDEUTICAL SUBJECTS</b>			
<b>MUTUALIZATION</b>			
<b>YEAR</b>	2		
<b>TERM (SEMESTER)</b>	1° semester		
<b>ATTENDANCE</b>	Mandatory		
<b>EVALUATION</b>	Out of 30		
<b>TEACHER OFFICE HOURS</b>	<p><b>CALASCIBETTA ANNA</b> Monday 09:00 14:00 edificio 9 policlinico Paolo Giaccone sez Farmacologia</p> <p><b>GALIA MASSIMO</b> Monday 9:00 12:00 Sezione di Scienze Radiologiche, stanza n. 93, primo piano. Dipartimento di Biomedicina, Neuroscienze e Diagnostica avanzata.</p> <p><b>RAINERI SANTI MAURIZIO</b> Wednesday 14:30 18:30 Istituto di Anestesia e Rianimazione Policlinico "P. Giaccone" Palermo. 1° Piano. E' Gradita Mail per Conferma</p>		

<b>PREREQUISITES</b>	Students must have knowledge of the anatomophysiological bases of pathologies and pharmacology.
<b>LEARNING OUTCOMES</b>	<p>Knowledge and ability to understand: the student will demonstrate knowledge and understanding skills regarding the basics of pharmacology, anesthesiology and indications for the use of contrast media with reference to administration, biodistribution, protocols of administration and adverse events.</p> <p>This knowledge will be acquired through lectures and practical sessions. Ability to apply knowledge and understanding: At the end of the course the student will be able to apply knowledge in practice, have understanding abilities and be able to solve problems regarding the main urgent frameworks, causes and therapeutic possibilities as well as have acquired the basic notions of first level resuscitation maneuvers, in order to achieve excellent technical abilities suitable in light of the complexity of the care and the health of the population.</p> <p>Independent reasoning: At the end of the course the student will be able to integrate knowledge and manage complexity, as well as to formulate assessments on the basis of limited or incomplete information, including considerations on the social and ethical responsibilities related to the application of his/her knowledge, and assessments regarding the applications of pharmacology, anesthesiology and indications for the use of contrast media.</p> <p>Communication skills: At the end of the course the student will know how to communicate in a clear and unequivocal way his / her conclusions, as well as the knowledge and underlying reasoning, to specialists and non-specialist interlocutors regarding the applications of pharmacology, anesthesiology and indications for the use of contrast media. These skills will be acquired and verified through meetings by the promotion of active involvement of students.</p> <p>Learning skills: At the end of the course the student will have developed those learning skills that allow to continue to study in an autonomous way. These skills will be developed through the percentage of time dedicated to autonomous learning, encouraging reflection activities and elaboration of issues regarding the applications of pharmacology, anesthesiology and indications for the use of contrast media. Evaluation of learning skills can be carried out through the elaboration of general reports or presentations with the help of the teaching staff.</p>
<b>ASSESSMENT METHODS</b>	<p>Oral exam: the student will be asked some questions on all subjects parts of the program with reference to lessons and recommended texts. The exam is designed to assess whether the student has knowledge and understanding of the topics treated at least in general outline, and have exhibition and argumentative capacity to interact with the examiner. The greater capacity such as more assessment will be positive. The evaluation is carried out of thirty.</p> <p>The sufficiency threshold will be reached if the student shows knowledge and understanding of the issues at least in broad outline, and has application skills sufficient; he must also have presentation and argumentative skills allowing the transmission of his knowledge to the examiner. Below this threshold, the examination will be insufficient. The more the candidate will be able to interact with the examiner with his argumentative and presentation skills, and the more his knowledge and application capabilities will go into detail on the subjects under evaluation, the more the judgement will be positive. The evaluation is expressed using a 30-point scale. ECTS grades: A – A+ Excellent (30-30 cum laude) - Grade descriptors : Excellent knowledge of teaching contents; students should show high analytical and synthetic capabilities and should be able to apply their knowledge to solve highly complex problems. ECTS grade : B Very good (27-29) - Grade descriptors: Good knowledge of the teaching contents and excellent language control; students should show analytical and synthetic skills and be able to apply their knowledge to solve problems of medium and, in some cases, even higher complexity. ECTS grade: C Good (24-26)- Grade descriptors: Good knowledge of teaching contents and good language control; the students should be able to apply their knowledge to solve problems of medium complexity ECTS grade: D Satisfactory (21-23)- Grade descriptors: Average knowledge of the teaching contents, in some cases limited to the main topic; acceptable ability to use the specific discipline language and independently apply the acquired knowledge. ECTS grade: E Sufficient (18-20) - Grade descriptors: Minimum teaching content knowledge, often limited to the main topic; modest ability to use the subject specific language and independently apply the acquired knowledge. ECTS grade: F Fail (1-17) - Grade descriptors: Lack of an acceptable knowledge of the main teaching content knowledge; very little or no ability to use the specific subject language and apply independently the acquired knowledge. Exam failed</p>
<b>TEACHING METHODS</b>	The course includes front lessons and practical exercises during CT and MR sessions and with a simulator.

**MODULE**  
**IMAGE DIAGNOSTICS, CONTRAST RADIOLOGY**

*Prof. MASSIMO GALIA*

**SUGGESTED BIBLIOGRAPHY**

Passariello Roberto  
Radiologia - Elementi di Tecnologia Radiologica  
2012 Quinta Edizione - Volume unico  
Casa Editrice: Idelson - Gnocchi  
ISBN: 978-8879475402

Verranno indicati alcuni argomenti da approfondire mediante lo studio di passi scelti nel testo, da integrare con il materiale didattico fornito dal docente.

<b>AMBIT</b>	10342-Scienze e tecniche di radiologia medica per immagini e radioterapia
<b>INDIVIDUAL STUDY (Hrs)</b>	45
<b>COURSE ACTIVITY (Hrs)</b>	30

**EDUCATIONAL OBJECTIVES OF THE MODULE**

Aims of the Course are to provide to the students the necessary knowledge on contrast mediums, with reference to their characteristics and indications for clinical use. Protocols of contrast medium administration, contraindications and adverse effects will be showed. The characteristics and appropriateness of the use of iodinated contrast mediums, extracellular and hepatobiliary gadolinium chelates and ultrasound contrast agents will be discussed.

**SYLLABUS**

<b>Hrs</b>	<b>Frontal teaching</b>
9	Contrast mediums: classification and characteristics.
9	Clinical applications of contrast mediums.
4	How to recognize and to treat adverse reactions after contrast mediums administration.
4	Guidelines for contrast medium administration.
4	Optimization of contrast medium administration in CT and MRI

  

<b>Hrs</b>	<b>Practice</b>
4	Guidelines for contrast medium administration.

**MODULE**  
**ANAESTHESIOLOGY**

*Prof. SANTI MAURIZIO RAINERI*

**SUGGESTED BIBLIOGRAPHY**

Maurizio Chiaranda - Emergenze ed Urgenze. Istituzioni - Piccin  
Ezio Romano - Anestesia Generale e Clinica - UTET

<b>AMBIT</b>	10339-Primo soccorso
<b>INDIVIDUAL STUDY (Hrs)</b>	45
<b>COURSE ACTIVITY (Hrs)</b>	30

**EDUCATIONAL OBJECTIVES OF THE MODULE**

At the end of the course the students must demonstrate knowledge and capacity of understanding regarding the anesthesia techniques, both general and locoregional, cardiopulmonary resuscitation as well as the use and mechanism of action of emergency drugs.

They should also be able to perform rational choices about drug therapies, anesthesia and intensive care to be applied in various pathological conditions, taking into account the specific characteristics of individual patient and in optics for a proper evaluation of the cost-benefit ratio.

**SYLLABUS**

<b>Hrs</b>	<b>Frontal teaching</b>
8	General Anesthesia
4	Monitoring of vital sign
4	Locoregional Anesthesia
2	anaphylaxis
4	Cardiac Arrest and Cardio-Pulmonary Resuscitation
2	Out-Of-Hospital Emergencies
2	Crisis Resource Management

  

<b>Hrs</b>	<b>Workshops</b>
4	Cardiac Arrest and Cardio-Pulmonary Resuscitation

## MODULE PHARMACOLOGY

*Prof.ssa ANNA CALASCIBETTA*

### SUGGESTED BIBLIOGRAPHY

Goodman & Gilman Le basi farmacologiche della terapia - Il manuale Seconda edizione, Edizioni Zanichelli.

<b>AMBIT</b>	10339-Primo soccorso
<b>INDIVIDUAL STUDY (Hrs)</b>	45
<b>COURSE ACTIVITY (Hrs)</b>	30

### EDUCATIONAL OBJECTIVES OF THE MODULE

The course (Pharmacology I) provides knowledge in the areas of pharmacodynamics, and clinical pharmacology that is essential for the appropriate clinical use of drugs in individual patients. It will also address the characteristics of some of the main drug classes by discussing their mechanisms of action at the molecular and cellular level, the pharmacokinetics, the clinical uses, the main source of variability in drug response due to physiopathological and/or genetic factors, their drug interactions and adverse drug reactions.

## SYLLABUS

Hrs	Frontal teaching
4	Pharmacodynamics. Mechanisms of drug action. Receptors and drug-receptor interactions. Agonists and antagonists: partial and inverse agonists. Dose-response curves. Types of drug antagonism. Therapeutic index. Factors affecting drug response.
2	Types and classifications of adverse drug reactions (ADR). Mechanisms of tolerance to drug effects. Drug dependence and addiction. Pharmacovigilance.
2	Polytherapy and drug-drug interactions. Pharmacodynamic and pharmacokinetic basis of drug interactions.
2	Pharmacogenetics.
2	Monoclonal Antibodies. biological and genetic therapy
4	Mediators of inflammation. Non-steroidal and steroidal anti-inflammatory drugs. Pharmacotherapy of gout.
4	Antihistamines and immunosuppressant drugs. Anti-asthmatic agents. Agents used in the therapy of osteoporosis.
4	Opiates and non-opiate analgesic agents. Local anaesthetics. Anti-migraine agents.
2	Pharmacotherapy of Epilepsies.
3	Drug therapy of Depression. Treatment of Parkinson Disease.
2	Drugs used in the treatment of diabetes. Insulins and oral hypoglycaemic agents. Drug therapy of dyslipidemia.
6	Principles of chemotherapy of infective diseases. Resistance to antimicrobial agents. Bacteriolytic, bactericidal and bacteriostatic agents: mechanisms of action, spectrum of antibacterial activity, pharmacokinetics, clinical uses and drug toxicity. Post-antibiotic effect and PK/PD index. Antimycobacterial agents.
1	Antimycotic agents.
2	Antiviral agents: anti-herpesvirus, anti-influenza, anti-hepatitis virus and anti-HIV agents. HAART and drug combinations in antiviral therapy.