



BSc in Nursing

INTEGRATED TEACHING: NURSING IN CLINICAL MEDICINE, SURGERY AND PHARMACOLOGY

NUMBER OF CFU: 4

SSD: BIO/14, MED/41, MED/18, MED/09

RESPONSIBLE PROFESSOR: MATTEO PIATTOLI

E-MAIL: matteo.piattoli@unicamillus.org

Office hours (by appointment): Tuesday from 3pm to 4 pm

MODULE: PHARMACOLOGY

NUMBER OF CFU: 1

SSD: BIOS-11/A

PROFESSOR: MARZIA DEL RE

e-mail: marzia.delre@unicamillus.org

Office hours (by appointment): Tuesday from 2pm to 3 pm

MODULE: ANESTHESIOLOGY

NUMBER OF CFU: 1

SSD: MEDS-23/A

PROFESSOR: MATTEO PIATTOLI

e-mail: matteo.piattoli@unicamillus.org

Office hours (by appointment): Tuesday from 3pm to 4 pm

MODULE: GENERAL SURGERY

NUMBER OF CFU: 1

SSD: MEDS-06/A

PROFESSOR: MILANETTO ANNA CATERINA

e-mail: annacaterina.milanetto@unicamillus.org

Office hours (by appointment): Tuesday from 3pm to 4 pm

MODULE: INTERNAL MEDICINE

NUMBER OF CFU: 1

SSD: MEDS-05/A

PROFESSOR: VERONICA OJETTI

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Office hours (by appointment): Tuesday from 3pm to 4 pm

PREREQUISITES

- Knowledge of the basic notions of human anatomy, human physiology and human pathology of the main diseases of international interest.
- Basic knowledge of the main definitions of clinical pharmacology

It is strongly recommended that the student should have attended the integrated teaching of General Pathology, and Physiopathology.

LEARNING OBJECTIVES

Aim of the Teaching is to provide students with knowledge on:

- General and peripheral anesthesia
- Monitoring in the intensive care unit
- Organ failure. Physiopathology and treatment
- Oxygen therapy and basics of invasive and non-invasive mechanical ventilation
- Shock
- Stupor and coma
- Basics of pain therapy
- Basics of effective communication
- The main pathologies of surgical interest by ensuring that at the end of the course the student is able to describe the fundamental aspects of the assessment and preparation of the person for surgery
- To identify the main post-operative complications and related prevention measures and to describe the metabolic and functional changes in the post-operative phase
- Describe the epidemiology, prevention measures and early diagnosis; etiopathogenesis and pathophysiology, main diagnostic investigations, signs and symptoms typical of the pathological picture and possible complications, specific monitoring in relation to the type of surgery and describe the follow-up programs and the principles of rehabilitation in relation to the type of pathology and surgical treatment
- Basic principles of clinical pharmacology and in particular, notions of pharmacokinetics, pharmacodynamics and pharmacogenomics
- Classifying the active substances according to their composition and specificity of action
- Physiopathological and diagnostic bases of pathologies of greater interest and internal frequency are essential goals. In this context the teaching of nursing practice and of the best and optimal approach to the patient with multi-factoriality of risk and multi-pathologies will be decisive.
- The nursing ability for the clinical, laboratory and instrumental management of the patient with medical diseases.

LEARNING OUTCOMES

Knowledge and Understanding

At the end of the course the student will be able to:

- Collaborate with the anesthesiologist in the main phases of general and peripheral anesthesia
- Manage a patient in intensive care unit. Monitoring and treatment

- Recognize the main life-threatening conditions, and the required therapeutical approach
- Manage pain therapy
- Perform high-quality cardiopulmonary resuscitation
- Communicate in an effective way with patients and/or family members
- Manage the surgical patient and some of the pathologies related to the surgical field. The course provides the theoretical knowledge useful for the planning of a safe nursing assistance based on scientific evidence through the application of nursing process.
- Knowledge of the basic principles of clinical pharmacology, pharmacokinetics and pharmacodynamics and of the main classes of drugs
- To know the basic notions of clinical pharmacology, the main classes of drugs, and the history of the drug
- Basic knowledge of the history of ancient and western modern pharmacology.
- Describe the mechanisms of action, efficacy and adverse reactions of the main classes of drugs, in particular, anti-inflammatories and analgesics, antibiotics, antiparasitics, antifungals, antivirals.
- To know all the main phases of the pathophysiology of the major and most frequent diseases of internal medicine.
- To know the criteria of clinical diagnosis of the major and most frequent diseases of internal medicine.
- To know the criteria for instrumental diagnosis of the major and most frequent diseases of internal medicine.
- To know the criteria for laboratory diagnosis of the major and most frequent diseases of internal medicine.
- To know the pharmacological and therapeutic applications of the major and most frequent diseases of internal medicine.
- To know the combined nursing and medical management paths in the management of patients suffering from internal pathology.

Applying knowledge and understanding

At the end of the course the student will be able to:

- Describe the fundamental aspects of the pathological conditions envisaged by the program, in relation to the different clinical-assistance pathways.
- Judge the basic efficacy and toxicity of the main drug classes
- Use the knowledge acquired for the in-depth study of aspects relating to the specific field to which the student will dedicate himself in the professional activity.

Communication skills

At the end of the course the student must be able to:

- Communicate with the patient about his / her skills in the field of diseases that require a surgical approach
- Be able to present historical notes on pharmacology, basic principles of pharmacokinetics and pharmacodynamics of the main classes of drugs
- Use specific scientific terminology appropriately.

Making judgements

At the end of the course the student must be able to:

- Assess the condition of a patient admitted to a general surgery department
- Know the difference, efficacy and toxicity between drugs belonging to the same pharmacological classes.
- Carry out general assessments on the topics covered

COURSE SYLLABUS

Syllabus PHARMACOLOGY

- Basic principles of pharmacology
- Pharmacokinetics, pharmacodynamics and pharmacogenomics
- Classification of adverse reactions
- Pharmacological principles of drug-drug and food-drug interactions
- Mechanisms of action and development of adverse reactions of the main classes of drugs, in particular: antihypertensives (alpha/beta-blockers, diuretics, calcium antagonists, angiotensin receptor blockers, ACE-inhibitors), antiarrhythmics, anti-inflammatories and analgesics, antibiotics, antiparasitics, antifungals, antivirals, insulin, oral hypoglycaemic agents, novel antidiabetic drugs, prokinetics, heparin and fibrinolytics

Syllabus ANESTHESIOLOGY

- Drugs in anesthesia: sedatives, analgesics, neuromuscular blockers
- Main anesthesia techniques, preoperative evaluation and preparation. Postoperative monitoring
- Elements of pain therapy
- Cardiopulmonary resuscitation, Basic Life Support (American Heart Association guidelines)
- Clinical deterioration, shock, sepsis
- Oxygen therapy, blood gas analysis
- Effective communication

Syllabus GENERAL SURGERY

- Clinical approach to the surgical patient (history, physical examination, laboratory tests and imaging studies)
- Pathophysiologic response of the body to trauma and surgery
- Preparation for surgery (operative risk assessment, prevention of postoperative complications)
- The operating room
- Laparotomic and minimally invasive surgical accesses
- Instrumentation, surgical devices and suturing techniques
- Hemostasis and perioperative fluid and blood replenishment
- Postoperative pain management
- Nutrition of the surgical patient (enteral and parenteral nutrition)
- Postoperative complications
- Shock (hypovolemic, cardiogenic, obstructive, distributive)

- Infections in general surgery (localized, generalized), gangrene and ulcers
- Elements of trauma (wounds and burns, wound healing, fractures and contusions)

Syllabus INTERNAL MEDICINE

- Medical history and data collection
- Chest pain (angina/heart attack)
- Dyspnea (pneumonia, effusion, pulmonary embolism, COPD, asthma) and cyanosis
- Arterial hypertension
- Arrhythmias and basics of ECG
- Diabetes mellitus and glycemic decompensation
- Fever
- Abdominal pain and vomiting
- Gastrointestinal bleeding (haematemesis melaena rectorrhagia)
- Jaundice and cirrhosis
- Bowel disorders (constipation and diarrhea)
- Diuresis disorders (urinary tract infection, acute kidney failure)
- Anemias
- Introduction to the pathophysiology of the main internal diseases.

The pathophysiological aspects of each condition will be treated with particular interest in the clinical, instrumental and laboratory diagnostic pathways. Finally, the pharmacological and interventional therapeutic process for each pathology treated will be evaluated, and the function of the nurse in the treatment path of the affected patient.

COURSE STRUCTURE

The module of Anesthesiology is structured in frontal interactive lessons for a total of 14 hours

The module of Pharmacology is structured in 14 hours of frontal/interactive lessons.

The General Surgery module is structured in interactive lectures for a total of 14 hours.

The module of Internal Medicine is structured in 14 hours of lectures divided into lessons of 2 to 3 hours based on the academic calendar. Lectures will include theoretical lessons and supplementary seminars on the topics covered.

COURSE GRADE DETERMINATION

The exam of the Teaching of Nursing in Clinical Medicine, Surgery and Pharmacology consists of a written examination of the modules of ANESTHESIOLOGY, PHARMACOLOGY, GENERAL SURGERY and INTERNAL MEDICINE, the grade of which constitutes an integral part of the evaluation of the Teaching. The examination will cover the main topics of the teaching modules and will consist of 15 questions for each module, each graded according to the following method: 1 point per correct answer, 0 points per incorrect or blank answer. The total score will be divided by 2 and the exam will be considered passed if both of the following conditions

are met:

- No less than 7 correct answers out of 15 for each module;
- Minimum final score of 18/30.

Any rounding will be done in excess, to the next higher unit.

The evaluation criteria considered will be: acquired knowledge, independent judgment, communication skills and learning skills. The exams will be assessed according to the following criteria:

< 18 insufficient	The candidate possesses an inadequate knowledge of the topic, makes significant errors in applying theoretical concepts, and shows weak presentation skills.
18 - 20	The candidate possesses a barely adequate and only superficial knowledge of topic, limited presentation skills, and only an inconsistent ability to apply theoretical concepts.
21 – 23	The candidate possesses an adequate, but not in-depth, knowledge of the topic, a partial ability to apply theoretical concepts, and acceptable presentation skills.
24 – 26	The candidate possesses a fair knowledge of the topic, a reasonable ability to apply theoretical concepts correctly and present ideas clearly.
27 - 29	The candidate possesses an in-depth knowledge of the topic, a sound ability to apply theoretical concepts, good analytical skills, clear argumentative clarity and an ability to synthesize
30 - 30L	The candidate possesses an in-depth knowledge of the topic, an outstanding ability to apply theoretical concepts, a high level of argumentative clarity, as well as excellent analytical skills, and a well-developed ability to synthesize and establish interdisciplinary connections.

OPTIONAL ACTIVITIES

- Practical simulation
- Individual study, group work, and home work on particular topics.
- Opportunity to participate in seminars, research internships, department internships and monographic courses.
- The topics of the activities are not subject to examination. Acquisition of the hours allocated occurs only with a mandatory frequency of 100% and suitability is provided.

READING MATERIALS

Reading materials for PHARMACOLOGY

- Goodman, L. S. (2018). Goodman and Gilman's the pharmacological basis of therapeutics. New York: McGraw-Hill
- Bertram G. Katzung. Basic and Clinical Pharmacology. XVI edition, 2021.
- Slides and course materials provided by the professor

Reading materials for ANESTHESIOLOGY

- Professor's notes and slides.
- Stoelting's Pharmacology & Physiology in Anesthetic Practice – Pamela Flood et al., edited by Wolters Kluwer.
- Sitography:
<https://cpr.heart.org/en/resuscitation-science/cpr-and-ecc-guidelines>
<https://www.asahq.org/standards-and-practice-parameters>
<https://www.sccm.org/SurvivingSepsisCampaign/Guidelines>

Reading materials for GENERAL SURGERY

- Lise, M. Chirurgia per infermieri. Ed. Piccin-Nuova Libreria (5^a Ed - 2017)
- Slides and scientific papers

Reading materials for INTERNAL MEDICINE

- Loscalzo, J. (2022). Harrison's Principles of Internal Medicine, McGraw Hill, 22nd Ed.
- Antonelli Incalzi Medicina Interna per scienza infermieristiche