



**MASTERS OF SCIENCE IN NURSING
AND MIDWIFERY
A.A. 2021/2022**

Course: Innovative Methodologies in Diagnosis and Treatment

Year: First

Period available (1°-2° semester – annual): annual

University Credits: 7

Learning objectives

Students will acquire the necessary knowledge to understand:

- The dynamic and multidisciplinary nature of clinical pathways;
- The centrality of the person and his/her health needs;
- The role of technology and innovation in the clinical pathways;
- The concept of innovative-alternative for the improvement of nursing care.

Students will be able to apply their knowledge to:

Develop and apply innovative, alternative, multidisciplinary and highly adaptable clinical pathways with respect to the specific needs of patients

Content

Clinical biochemistry and clinical molecular biology BIO/12 :

- The diagnostic laboratory: the different stages of the process;
- POCT (Point of Care Testing) and patient management;
- COVID 19: molecular diagnosis and evaluation of the serological aspect;
- Diagnostic tests in genetics and new approaches: some examples (NIPT, BRCA, Target Therapy);
- Cardiovascular diagnostics: old and new markers;
- Microbiology: from 'cultural' to 'molecular' diagnosis;

Clinical pathology MED/05



- Leukocyte infiltrate as a new therapeutic target;
- Innovative methods to modulate the immune response;
- Microbiome;
- Next-generation vaccines;
- Single cell sequencing;
- CART cell therapy: a revolution in the treatment of lymphoma.

Internal Medicine MED/09

First semester

- Telemedicine;
- Nurses/midwives leading a telemedicine unit: identification of the pathology, objectives, organisational aspects and possible technical solutions (drafting of a group project and interactive critical discussion in the classroom)
- The Syncope Unit;

Second semester:

- Allurement syndrome: how to identify and prevent it. Interaction with a physiotherapist (interactive lesson).

General Surgery MED/18

The minimally invasive approach in surgery, thanks to technological progress:

- Historical background and development of laparoscopy;
- Risks and benefits;
- Contraindications;
- Robotic surgery, technical innovations, technological characteristics, limitations and future developments;
- Fields of application;
- How the robotic-assisted surgery transformed the surgical approach ;
- Consequences of robotic surgery on the patient, the territory and the national healthcare system.

Endoscopic and interventional radiology techniques for the treatment of diseases previously managed surgically. Interdisciplinary innovation.

- History of digestive endoscopy;
- History of interventional radiology;
- Initial fields of application;



- Modern fields of application;
- Future developments;
- From helping the surgeon to replacing him/her. Changes in the diagnostic algorithm and surgical skills after the advent of these methods.

Neoadjuvant chemotherapy, changing the paradigm:

- Introduction to the concept of neoadjuvant chemotherapy;
- How and why it developed;
- Its expansion and current fields of application;
- Advantages, disadvantages and open debates.

Enhanced recovery after surgery, innovations originating from questioning dogmas and certainties:

- Historical background;
- Recall of evidence-based medicine;
- Definition and description of the main points making up enhanced recovery;
- Early mobilisation and feeding;
- Reduction in the use of drains and catheters;
- Careful management of infusion and analgesic therapy;
- Evaluation of the clinical impact of the mentality change at all professional levels
- Lights and shadows of the process, between extremists and economic interest

General and specialised paediatrics MED/38

- **Breastfeeding** with particular attention to the biological characteristics of breast milk and to the management of the mother/infant dyad aimed at promoting breastfeeding.
- **Clinical risk** in its broadest sense, with attention to the historical evolution of risk management, as well as to international, national, regional and Operating Unit regulations. Reference will be made to clinical risk management in neonatology and to innovative approaches to its management in neonatology and paediatrics.

Pharmacology BIO/14 (II Semester)

Main steps in drug discovery and drug development processes:

- Concept of drug repositioning;
- Examples of old drugs repositioned to treat untreatable diseases;
- General mechanisms of addiction: causes and neuronal mechanisms involved;



- Concepts of pharmacokinetic and pharmacodynamics tolerance;
- Classification of drugs;
- Depressant substances: mechanisms of action, effects, classic and innovative pharmacological treatment;
- Factors underlying anxiety and depression;
- Classical pharmacology and innovative approaches to manage anxiety and depression;
- General concepts of drug interactions;
- Specific examples of drug interactions.;

General Nursing Sciences, General Clinics and Paediatrics MED/45

- "In-novus" and new perspectives for nursing: technological and organisational innovation towards 4.0 nursing. The human component: man governing the processes. Research as the first step towards innovation.
- The contribution of innovation in nursing in achieving health outcomes for the patient.
- Role of nurses in innovation: promoters and creators, not just users. Responsibility of innovation and its integration into nursing care planning.
- Interdisciplinarity in innovation: Nursing competencies and their contribution in the care and diagnosis team.
- Nursing and genomics: nursing perspectives and new skills.
- Nursing and artificial intelligence: development and application to the nursing care process.
- Drafting of a preliminary project of innovation in nursing.

Teaching and learning activities and teaching methods

Lectures, group work, individual and group essays.

Assessment method

The final exam will consist in a written examination with multiple-choice answers.

The written exam is divided into 7 blocks, each consisting of 15 questions, for a total of 105 questions.

In order to pass the written examination, 9 correct answers out of 15 questions in at least 5 modules are required. In the other two modules, a minimum of 7 correct answers out of 15 questions is required.

Should the student fail the examination not having achieved the marks referred to in the previous paragraph, but in case the student has obtained a pass mark in 5 modules, he/she will be entitled to resit the two modules not passed on the next exam date.

-If the student fails to pass the exam within the current academic year (three exam sessions), he/she will have to take the exams for all the modules included in the Integrated Course.



For Internal Medicine MED/08 and General Nursing Sciences, General Clinics and Paediatrics MED/45 students will have 4 hours during the lessons to prepare a project under the supervision of the professor. A positive assessment of the project entitles the student to take a shorter test of 11 questions. The student must answer correctly 5 out of 11 questions, having already scored +4 on the total mark thanks to the project.

The marks for each module (1 point for each correct answer) will contribute to the definition of a single final mark, out of 30.

In order to obtain the "cum laude" the student will have to reach a mark of at least 101/105 (≥ 101 correct answers out of 105 questions). The results will be published within 15 working days.

Recommended readings

Materials provided by the professor.

General Nursing Sciences, General Clinics and Paediatrics MED/45

- Wilkinson J. Processo infermieristico e pensiero critico. CEA. Milano
- Schumpeter, Teoria dello sviluppo economico, 1919
- Unleashing nurse-led Innovation, BDO & Penn Nursing, 2019
- Romanelli et Al. La genomica in medicina: attualità e prospettive per l'assistenza infermieristica. AIR. 2010.