UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Biomedical Sciences 2

2627-1-I0105D005

Aims

The course aims to provide students with fundamental knowledge of general pathology, pharmacology, clinical biochemistry, and microbiology, necessary to address the study of physiopathological aspects relevant to the field of nursing sciences. At the end of the course, students will have achieved the following aims:

Knowledge and understanding:
The course will provide a solid foundation for understanding biological phenomena and the functioning mechanisms of organs and systems, as well as the physiopathological elements applicable to various clinical situations, including in relation to diagnostic parameters.

Ability to apply knowledge and understanding:
The course will develop the ability to independently apply acquired theoretical knowledge to analyze, interpret, and solve clinical and care-related problems in the field of nursing, integrating information for effective and responsible management of patients' health. Additionally, it will enhance the ability to critically evaluate the interdisciplinary connections among the various subjects covered in the different modules.

Making judgements:
The course will develop the ability to independently evaluate the methodological coherence in problem-solving and critically interpret, among multiple possible options, the most appropriate approach for the specific case. In the field of nursing, these skills will enable the selection and application of the most suitable care and communication strategies in various clinical and relational situations.

Communication skills:
The course will provide the necessary preparation to communicate ideas, problems, and solutions clearly and effectively, both to professionals from the same or other disciplines and to non-specialist users, using appropriate methods and tools suited to different professional and cultural contexts.

Learning skills:
The course will provide a solid theoretical foundation and will enable the development of an active and independent

study methodology, useful both for future specialized courses and for professional practice.

Contents

Understanding the underlying causes and pathogenic mechanisms of human diseases, as well as the etiology of the fundamental alteration of the structures, functions and control mechanisms at different levels of integration and acquire the basic knowledge to understand and deal with functional alteration. Control the appropriate terminology to interact with lecturers and, in perspective, with the multidisciplinary team and with patients to meet their health needs. Use the acquired skills to facilitate the development of additional advancement in clinical disciplines.

Learn the basics of drug administration, their absorption and distribution in the body and their elimination. Know how a compound form become a drug and the mechanism of action into the body.

Learn the meaning of the examination laboratory, its scientific and clinical relevance; the contribution of the laboratory in disease prevention, diagnosis, especially in assessments of organ function and patients monitoring; the foundation for interpreting laboratory tests; the influence of the way to collect, transport and storage biological samples on results of the laboratory tests.

At the end of this course, the student will be able to understand: concept of acute and persistent infection, pathogenicity and virulence. The methods of direct and indirect contagion. The way of transmission of infections and their spread. Concept of carrier (eg. HBV). The correct way to collect, storage and transport biological sample from patient to laboratory. Approaches to laboratory diagnosis of bacterial and viral infections: direct and indirect diagnosis. Essential features of the main pathogens agents of clinical interest.

Detailed program

Refer to the individual course modules.

Prerequisites

None

Teaching form

The lessons are held in presence. Some lessons are held through the Distance Learning mode Teledidattica.

Textbook and teaching resource

Textbook are specified in the course modules.

Semester

I year, II semester

Assessment method

FOR THE ENTIRE INTEGRATED COURSE:
Written test composed for each module by multiple choice quizzes and open-ended questions. The exam is passed by obtaining a passing grade in all 4 modules. Allocated time: 90 minutes

Office hours

Request an appointment with the teachers by email.

Sustainable Development Goals

GOOD HEALTH AND WELL-BEING | QUALITY EDUCATION | GENDER EQUALITY