UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

# COURSE SYLLABUS

## Health Care and Disease Prevention

**2425-1-I0302D004**

### Aims

The student should be able:

- to describe the history of technological progress applied to medicine
- to define and describe the correct behavior in the specific workplace of its competence and explain the recommendations and standards to prevent the development of occupational diseases
- to recognize the role and the contributions of psychology to health care
- to know and describe the Radiobiologic effects at atomic, molecular, biomolecular, cytologic and hystologic levels
- to know basics of Radioprotection and Radioprotection standards, necessary to carry on their profession
- treatments.
- should be able to describe the correct patient preparation for the specimen collection and its pre-analytical treatment diseases

### Contents

Aim of the teaching is to:

- to give students the cultural tools to understand the birth and evolution of Medicine and of technology related to advances in Medicin;
- give useful information to promote health in the workplace and avoid behaviors that could cause occupational diseases, and facilitate the transmission of disease;
- to give students the tools to understand ethical issues in healthcare, including those concerning the relationship between healthcare workers and patients and between healthcare workers and workplace;
- to give students the knowledge about the biological effects of ionizing radiation;
- to give students the knowledge about Radioprotection standards;
- to give students the knowledge about correct patient handling in relation to pre-analytical aspects.

## Detailed program

Pre-Hippocratic Medicine. The rise of rational medicine in the classical world (Hippocrates and his writings, Hellenistic medicine, the “Medical sects”, Galen). Medieval Medicine (Schola Medica Salernitana, monastic medicine, Arabic medicine). Medicine and the Scientific Revolution (Vesalius, Harvey, iatrochemistry and iatrophysics). Medicine and society in Eighteenth and Nineteenth centuries (Ramazzini, The Enlightenment and its impact on medicine, the use of statistics in medicine and the birth of epidemiology, the emergence of public health).

The birth of biomedicine and the major discoveries of the nineteenth century (anesthesia, antisepsis, synthetic drugs and the development of semeiotics). The evolution of the concept of health in the twentieth century (WHO and major international conferences, the emergence of health systems with universal coverage, the Italian health system). The evolution of medicine in the twentieth century (the pharmacological revolution, the evolution of surgery and transplantation, the rise of health technologies).

Basic concepts of prevention. Classification of risk factors. Regulatory Framework. Duties in the preventive system. Risk assessment and management in health care. Risks of pregnant workers. Biological hazard. The biomechanical overload. The work-related stress. Other occupational risks

The role of Psychology in healthcare contexts.

Thinking and reasoning: cognitive biases and diagnostic errors.

The modern concept of health.

Health Communication.

Radiobiologic effects at atomic, molecular, biomolecular, cytologic and hystologic levels. Water irradiation and oxygen enhancement effect. Low and high LET radiation. Relative biological effect. Radiation of homogeneous and inhomogeneous cells and related survival. Repair and recovery of radiation damage. Short and long term effects on tissues and organs. Somatic and genetic effects. Stocastic an graduate effects. Radiation cancerogenesis

Dose units. Detectors. Individual and environmental survey. Workers and work areas classification related to radioprotection. External radiation protection. Internal radiation protection: contamination, decontamination. Local, general, national and international rules

The pre-analytical phase.

Standardization of the patient preparation.

The specimen collection.

Sample treatment and conservation

## Prerequisites

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## Teaching form

Lectures and exercises

## Textbook and teaching resource

Cesana G, Riva MA. Medicina e Società. Firenze: Società Editrice Fiorentina, 2017

The Teachers will provide additional learning materials

## Semester

Second semester

## Assessment method

Written exam plus possible oral exam upon request of the teachers or the student.
The written test will consist of:
? multiple choice questions and open questions on Patient Management to check preparation on the exam program and to evaluate communication skills in a disciplinary context
? multiple choice questions on Radiation Protection to check preparation on the exam programme
? Radiobiology multiple choice questions to check preparation on the exam programme
? multiple choice questions on Occupational Medicine to check preparation on the exam programme
? multiple choice questions on the History of Medicine to check your preparation on the exam programme
? in-depth study of a scientific article in Psychology to check preparation on the exam program and evaluate communication skills in a disciplinary context.

## Office hours

by appointment

## Sustainable Development Goals

GOOD HEALTH AND WELL-BEING