UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Medical Physics - 5

2526-1-I0102D004-I0102D013M-T5

Aims

Provide students with the knowledge of general physics and medical physics necessary to carry out the profession.

Contents

The course will provide basic notions of physics, including: classical mechanics, fluid dynamics, thermodynamics, electrostatics. Emphasis will be given to physics that is most relevant to the profession (levers, echography, electrostatics, gas physics, osmosis).

Detailed program

Mechanics: scalars and vectors, kinematics, forces and Newton's laws, inclined plane, work and energy, levers

Physics of waves: sound waves, Doppler effect, principles of echography

Electromagnetism: Coulomb forces, elettric field and potential, kinematics of charges, capacitor, current and Ohm's law.

Fluid dynamics: mechanics and statics of fluids, Bernoulli theorem, viscosity, surface tension

Thermodynamics: heat, ideal and real gases, work and transformations, principles of thermodynamics, heat transfer, diffusion and osmosis

Prerequisites

Basic knowledge of mathematics.

Teaching form

Frontal lectures (60 percent) and interactive workshops (30 percent) in presence, online tutorials (10 percent). Use of e-learning platform for additional readings.

Textbook and teaching resource

Scannicchio D. Giroletti E. (2015) Elementi di Fisica Biomedica, Edises, Milano.

Semester

1st Year, 2nd Semester

Assessment method

Take-home written assigment (test with multiple choice and/or open ended questions).
Oral exam with discussion on the written assigment and on all the topics covered during the lessons.

Office hours

By appointment (via e-mail).

Sustainable Development Goals

GOOD HEALTH AND WELL-BEING | QUALITY EDUCATION