UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Applied Physics

2122-1-I0302D001-I0302D002M

Aims

The general aims of the course are to provide students with basic knowledge of Physics, and Physics of radiation, necessary to carry on their profession.

Contents

The aim of the course is to provide students with basic knowledge of Physics and Physics of Radiation

Detailed program

Unit of measurement and changes of the unit of measurement. Vector and scalar quantities. Operations with vectors and vector properties. Concept of force, moment of a force. Equilibrium of a rigid body, examples of the equilibrium of the human body. The levers and their application. Elements of geometrical optics.

Electromagnetic waves and electromagnetic radiation spectrum. Elements of Physical optics: absorption and scattering of light. Beer-Lambert law.

Prerequisites

Teaching form

Lectures

Textbook and teaching resource

D. Scannicchio, Fisica Biomedica, EDISES

D. Scannicchio, Esercizi e problemi di Fisica, Edizioni Unicopli

U.Amaldi, Fisica delle radiazioni, Boringhieri

Teachers will provide other educational material

Semester

First Semester

Assessment method

2 written exams: General Physics and Physics of Radiation.

General Physics:

- multiple choice test comprising 7 questions with only one correct answer among 5. Each correct answer is scored 3

- 2 problems with 2 questions each (6 pts for each problem) - not only the result is evaluated, but also the development and the used formulas

Physics of Radiations

Test typology: The methods and criteria for assessing the student's performance consist of 14 theory tests, with multiple choices (one correct), plus 14 practical exercises.

Results of the evaluations: the score is expressed in thirtieths, minimum score 18/30, highest score 30/30 with honours.

Maximum 14 marks can be achieved with the theory part.

Maximum 18 marks can be achieved with the practical exercises.

No penalties are applied to the final score for wrong answers.

Topics included in the theory tests : all the topics of the program modules can be included in the theory part of the written test.

Topics included in the practical exercises : in the practical exercises student has to solve problems of:

- radioactive decay;

- radiation interaction with matter;

- quantum physics.

Timetable : the student has maximum 75 minutes to complete the exam test.

General note:

Students must bring their own pens, pencils, rulers, sheets, calculator and any other required equipment.

Students must bring their University ID card and display it on their desk throughout the examination. ID cards will be checked by an invigilator once the examination has started.

The use of mobile telephones or other electronic devices is not permitted. Mobile telephones must be turned off and no items should be touched during the examination.

If a student wishes to speak to an invigilator she/he should raise a hand and stay seated.

Examination question papers, lessons notes, books or part of answer books are not permitted and may be removed from the examination room.

Office hours

By appointment required by mail