UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Medical Physics

2425-1-H4102D088-H4102D024M

Aims

Students will receive the practical, theoretical and IT skills to analyse and to correctly understand the experimental data. This knowledge will form the primary basis for a rationale approach to the knowledge of medical sciences.

Contents

Introduction to data analysis software

Data import procedures

Data Visualization

Mathematical models and fitting procedures

Analysis of patient data to determine physiological parameters.

Detailed program

Data import procedures

Importing simple text files

Recognition of different data storage formats

Generation of numerical matrices for data management

Displaying data

Introduction to the different ways of graphic representation

Graphs in linear logarithmic and bilogarithmic scale

Mathematical models and methods of fit

Analysis of patient data to determine physiological parameters

Analysis of respiratory data

Analysis of data of blood parameters

Analysis of Electrophysiological data

Prerequisites

Basic knowledge of mathematics and analysis and IT

Teaching form

Lectures in an expository format and Informatics labs in an expository-and-interactive format.

Textbook and teaching resource

Help online for OriginLab, Python and MatLab:

https://www.originlab.com/index.aspx?go=Support/DocumentationAndHelpCenter

https://www.python.org/about/help/

https://it.mathworks.com/help/matlab/

Semester

Second semester

Assessment method

Assessment of the suitability on the basis of the attendance/participation to the laboratory activities.

Knowledge and skills will be further assessed during the “Basic sciences” examination, with the modalities there described.

Office hours

by appointment made via email "domenico.salerno@unimib.it" or telephone 0264488215

Sustainable Development Goals

GOOD HEALTH AND WELL-BEING | CLIMATE ACTION