UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Basic Computer Science

2526-1-H4104D004

Aims

The main objective of the course is to enable students to acquire and deepen their knowledge on:

1. computer related methodologies and technologies employed in medical informatics and to apply those methods in solving problems arising in different areas of medicine and the health-care system;
2. theoretical and practical knowledge necessary to understand and analyze the characteristics of medical images;
3. human modelling techniques starting from diagnostic images and 3D scanning systems up to 3D printing of body parts and organs.

Contents

The course is composed by three modules dealing with:

1. **Medical informatics**: data, information, and communication; information systems and DBMS; Telemedicine and Internet for healthcare.
2. **Medical Imaging**: generation of digital images, medical image characteristics, basics of medcial image processing and artificial intelligence-based approaches to improve image quality, 3D rendering.
3. **Human modelling**: techniques and tools to create 3D geometric model of human body and anatomical districts at different level of details according to the domain of application.

Detailed program

The detailed course program is provided in the Syllabus of the respective module.

Prerequisites

Basic knowledge in mathematics, algebra and physics.

Teaching form

Frontal lessons in class and in the laboratory; use of dedicated SW tools.

Textbook and teaching resource

Please refer to the Syllabus of the specific modules.

Semester

First semester.

Assessment method

Written and oral exams. Please refer to the Syllabus of the specific module.

Office hours

Please refer to the Syllabus of the specific module.

Sustainable Development Goals

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