



UNIVERSITÀ  
DEGLI STUDI DI MILANO-BICOCCA

## SYLLABUS DEL CORSO

### Basic Computer Science

2526-1-H4104D004

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#### 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 medical 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

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