

## COURSE SYLLABUS

### Modelling

**1819-1-H4102D004-H4102D011M**

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### Aims

The objective of the module is to enable students to acquire and deepen their knowledge about human modelling techniques starting from diagnostic images and 3D scanning systems up to 3D printing of body parts and organs.

### Contents

The module contents concern: techniques and tools to create and use 3D geometric model of human body and anatomical districts at different level of details; simulation techniques; 3D printing of anatomical districts and organs.

### Detailed program

Systems for the human body acquisition (3D scanners); Devices for motion capture; Generation of the geometric models of the human body, anatomical districts and organs from medical images (e.g. from TC or MRN) and 3D scanners; Numerical simulation and devices for Virtual and Augmented Reality; Technologies and materials for 3D printing for medicine; Applicative examples in the medical fields and use of SW tools for 3D acquisition and modelling of the human body.

### Prerequisites

None.

### **Teaching form**

- Lessons in class using slides and movies.
- Use of dedicated SW tools at the laboratory.

### **Textbook and teaching resource**

Lectures Slides

### **Semester**

I semester

### **Assessment method**

- Written test with open questions to verify the level of the preparation on the course program;
- Colloquium to discuss the written test.

### **Office hours**

Thursday, h. 14.30

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