UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

# COURSE SYLLABUS

## Modeling and Simulation I

**2122-4-H4102D027-H4102D096M**

### Aims

To provide the concepts necessary for understanding modeling and simulation tools for the cardiovascular system.

### Contents

The clerkship will cover the most important aspects related to theoretical models of cardiovascular fluid mechanics. Students will acquire the basic knowledge required to investigate blood flow distribution and the role of physical parameters in cardiovascular function.

### Detailed program

1) Simplified theoretical models of cardiovascular fluid mechanics.

2) Boundary conditions and physical properties of biological tissues.

3) Practical use of software for blood and cardiac flow simulations.

### Prerequisites

Basic knowledge of fundamentals of physiology of the cardiovascular system and computer science.

## Teaching form

Teaching of basic concepts of theoretical models and cardiovascular fluid mechanics training and practical demonstration on the use of theoretical models and software tools.

## Textbook and teaching resource

Open Source project: SinVascular

Slides of the course will be transmitted to the students using the e-learning platform

## Semester

First Semester

## Assessment method

Practical skills on the use of numerical simulation of hemodynamics in large arteries

## Office hours

Contact by e-mail