The Biomechanics Module aims to provide the students with fundamental knowledge about description and interpretation of biomechanical phenomena, with the aim to acquire ability to set and solve simple problems related to biological systems and tissues. Furthermore the course introduces to fundamentals of materials and fluid properties, statics of structures, tissue mechanics and fluid motion.

The Thermodynamics module aims to provide the physical and engineering bases of energy transformation processes, a prerequisite for the design of biomedical devices.

The student:

- Can solve simple static of structure problems;
- Has knowledge of tissue mechanics (DD1);
- Is able to recognize which tissue components influence the tissue behaviour;
- Is able to calculate stress and strain in a tissue subjected to external loads (DD2);
- Is able to calculate pressures and flows in a hydraulic systems representing biological fluids circulation (DD2,DD3);
- The student, to understand the principles of thermodynamics in the [illegible] formulation [illegible]

The course requires the knowledge of the mathematical instruments developed in the course of

Conduction: steady state analysis
Natural and forces convection: Dimensionless analysis
Radiation heat transfer
Heat exchanger

Teaching will consist in frontal lessons on theory and numerical exercises.

The exam will consist of a written test concerning the whole program (both open theory questions and numerical exercises). The students may take an optional oral exam, for written evaluations starting from 18/30 [illegible]