



**ANNO ACCADEMICO 2017/2018**

**CORSO DI STUDIO IN BIOTECNOLOGIE**

**FISICA CON LABORATORIO 8 CFU**

**DOCENTE PAOLA ROMANO**

1. *Unit measuring systems*

Physical quantities. Unit of measure. Dimensional equations.

2. *One-dimensional motion*

Reference Systems. Time equation. Trajectory. Quantities that characterize the motion: position, speed, acceleration.

3. *Two-dimensional motion*

Vectors. Motion on curve trajectory.

4. *Dynamics of the material point*

The force. Inertial systems. First law of Dynamics. Mass concept. Second law of dynamics. Momentum. Systems of material points. Angular momentum. Third law of dynamics. Conservation of momentum

5. *The forces*

Gravitational force. Elastic force. Friction forces.

6. *Work and energy*

Work of a force. Conservative forces. Kinetic energy and potential energy. Conservation of mechanical energy.

7. *Electricity and magnetism*

Electric force. Electric field. Electrical potential. Stationary electric current. Electrical resistance and Ohm's law. Electromagnetic field (notes).

8. *Temperature and heat*

The temperature and heat. Perfect gas. Thermodynamic transformations. The principles of thermodynamics.

9. *Analysis of experimental data*

Measurements of fundamental and derived physical quantities. Graphic representation and statistical processing of experimental data.



## *Dipartimento di Scienze e Tecnologie*

### **Testi consigliati:**

- Serway, Jewett, **Principi di Fisica, EdiSES**
- D. Halliday, R. Resnick, J. Walker, **Fondamenti di Fisica, Ambrosiana**
- P. Mazzoldi, M. Nigro, C. Voci, **Elementi di Fisica, EdiSES**
- **G. Filatrella, P. Romano**, Elaborazione statistica dei dati sperimentali, EdiSES