Biological and Physical Sciences Course

APPLIED PHYSICS MODULE


Duration of the course (hours): 20;   CFU: 2

Teacher: Davide Conte,   davideconte[dot]bioeng[at]gmail[dot]com

Didactic resources:  http://dvdconte.jimdo.com/lessons/

Lessons timetable:
Monday, h 8:30 – 12:00  November the 5th, 12th, 19th 26th;  December the 3rd.

Office hours: after lessons or ask via email

Aims of the course:
To understand the fundamental concepts of Mechanics in order to be able to describe and analyze a body movement (tipically the human body) in terms of its kinematics and kinetics behaviour.

Program of the course (with book chapter references, Ed. 2004):

INTRODUCTION – chap 1
examples, measurement units

POINT KINEMATICS – chap 2, 3, 4, 10.1-3
position, displacement, velocity, acceleration
linear motion, circular motion
vectors

POINT KINETICS – chap 5, 6, 7, 8, 9, 10.4-6
Forces, Newton’s laws
Power, work, kinetic energy, potential energy, mechanical energy
Conservative and not-conservative forces
examples

ROTATIONAL DYNAMICS AND EQUILIBRIUM – capitolo 11
rigid body definition, translation and rotation
Inertia
Torque
Useful information:

Exam: written test with questions about theory and exercises. An optional oral discussion might be required by the lecturer if necessary.