



Dipartimento di Scienze e Tecnologie

2017/2018

Course Programme

I Year

GEOLOGICAL SCIENCES

FISICA SPERIMENTALE

Professor: FILIPPO GIUBILEO

Kinematics

Motion, Distance & Displacement, Speed & Velocity, Acceleration, Equations of Motion, Falling Bodies, Graphs of Motion, Kinematics & Calculus, Kinematics in Two Dimensions, Projectiles, Parametric Equations

Dynamics

Forces, Force & Mass, Action-Reaction, Weight, Friction, Equilibrium, Forces in Two Dimensions, Centripetal Force, Frames of Reference

Energy

Work, Energy, Kinetic Energy, Potential Energy, Conservation of Energy, Power, Simple Machines, Impulse & Momentum, Conservation of Momentum, Momentum & Energy, Momentum in Two Dimensions

Rotational Motion

Rotational Kinematics, Rotational Inertia, Rotational Dynamics, Rotational Equilibrium, Angular Momentum, Rotational Energy, Rolling, Rotation in Two Dimensions, Coriolis Force, Planetary Motion, Universal Gravitation, Orbital Mechanics, Gravitational Potential Energy

Periodic Motion

Springs, Simple Harmonic Oscillator, Pendulums

Thermal Physics

Heat & Temperature, Temperature, Thermal Expansion, The Atomic Nature of Matter, Gas Laws, Kinetic-Molecular Theory, Phases, Calorimetry, Sensible Heat, Latent Heat, Heat Transfer, Conduction, Convection, Radiation, Thermodynamics, Heat & Work, Pressure-Volume Diagrams, Engines, Refrigerators, Energy & Entropy, Absolute Zero

Electrostatics

Electric Charge, Coulomb's Law, Electric Field, Electric Potential, Gauss's Law, Conductors, Electrostatic Applications, Capacitors, Dielectrics, Batteries, Electric Current, Electric Current, Electric Resistance, Electric Power, DC Circuits, Resistors in Circuits, Batteries in Circuits, Capacitors in Circuits, Kirchhoff's Rules