UNIVERSITÀ DI PAVIA

Anno Accademico 2019/2020

PHYSICS - PART 1 (SURNAMES L-Z)

Enrollment year	2019/2020
Academic year	2019/2020
Regulations	DM270
Academic discipline	FIS/01 ()
Department	DEPARTMENT OF BIOLOGY AND BIOTECHNOLOGY "LAZZARO SPALLANZANI"
Course	BIOLOGICAL SCIENCES
Curriculum	PERCORSO COMUNE
Year of study	1°
Period	
ECTS	6
Lesson hours	48 lesson hours
Language	Italian
Activity type	
Teacher	GIULOTTO ENRICO VIRGILIO - 6 ECTS
Prerequisites	The exam can be taken only by students who passed the exam of Mathematics.
Learning outcomes	Learning and mastering the basic notions of classical physics.
Course contents	Physical quantities and their measurement. Mechanics. Kinematics of a particle. Newton’s laws. Conservation of momentum. Rectilinear motion: constant velocity and constant acceleration. Sedimentation. Centrifugation. Simple harmonic motion. Kinetic energy and work-kinetic energy theorem. Potential energy and conservation of mechanical energy. Mechanics of fluids. Equilibrium of a fluid: Pascal’s principle, hydrostatic pressure, Archimedes’ principle. Surface tension and capillarity.

	Bernoulli’s equation and its applications. Laminar flow and turbulent flow: viscosity, Poiseuille law. Blood flow. Thermodynamics. Ideal gases. Work in thermodynamics. Heat and temperature. First law of thermodynamics. Heat capacity and specific heat capacity. Phase transitions and latent heats. Diffusion: Fick’s first law. Osmosis: Van’t Hoff’s laws. Second law of thermodynamics and entropy.
Teaching methods	Teacher-led lectures and exercises.
Reccomended or required readings	F. Borsa, A. Lascialfari, Principi di Fisica, Edises Other textbooks (English editions available) J.S. Walker, Fondamenti di Fisica, Pearson D.C. Giancoli, Fisica, C.E.A. D. Halliday, R. Resnick, J. Walker, Fondamenti di Fisica, C.E.A.
Assessment methods	The exam consists of a written part (mainly simple problems) and an oral part. The written part must be passed before the oral part can be taken. Both written and oral exams cover the subjects of the whole course (Part1 + Part 2)
Further information	
Sustainable development goals - Agenda 2030	$lbl_legenda_sviluppo_sostenibile