General information		
Academic subject	**Applied Physics**	
Degree course	Veterinary Medicine	
Academic Year	2021/2022	
European Credit Transfer and Accumulation System (ECTS)		2
Language	ITALIAN	
Academic calendar (starting and ending date)	II Bimester	
Attendance	Mandatory	

Professor/ Lecturer	
Name and Surname	Emanuele Bisceglie
E-mail	emanuele.bisceglie@uniba.it
Telephone	
Department and address	Veterinary Medicine Campus – Valenzano (BA
Virtual headquarters	
Tutoring (time and day)	arranged by email

Syllabus	
Learning Objectives	Ability to develop the communication skills necessary for representing and discussing the fundamental arguments of the discipline.
Course prerequisites	Knowledge on Elements of Mathematics

Contents	Unit of Measurement. Physical quantity. Vector quantity and Scalar quantity Vectors, vector components. Kinematics - Displacement, velocity, acceleration, Motion with constant velocity and motion with constant acceleration, Free falling objects. Projectile motion, Uniform circular motion. Angular acceleration, and centripetal acceleration, Motion with constant angular acceleration (2 h) Dynamics - Conservative forces and Potential energy, Kinetic energy, Work definition, Work-Energy principle, Potential energy of Gravitational, Elastic and central forces, Power, Mechanical energy conservation.(2 h) Hydrostatics - Fluids at rest: Pressure in fluids, Pascal's Principle, Stevino and Archimedes' Principle (2 h) Hydrodinamics - Equation of continuity, Bernoulli's equation, Viscosity, Poiseuille's equation, Surface tension (2 h) Temperature, Temperature and thermometers, Thermal equilibrium and the zeroth law of thermodynamics, Thermal expansion, The Ideal Gas Law, Kinetic theory and the molecular interpretation of temperature , Real Gases (2 h) Laws of Thermodynamic: Heat, Heat as Energy Transfer, Internal energy, Specific heat, Calorimetry, Latent heat, Heat transfer: Conduction, Convection, and Radiation The first law of thermodynamics, The second law of thermodynamics, Entropy and the second law of thermodynamics. (2 h) Charge, Insulators and Conductors, Coulomb's law, The Electric Field, Electric potential, Electric potential energy and Potential Difference, Equipotential Line Electric currents, Ohm's law: Resistance and Resistors, Resistivity, Electric power, Alternating current Resistors in series and in parallel, Capacitors in Series and in Parallel (2 h) Magnetism, Magnets and Magnetic Fields, Gauss's Law, Magnetic Fields produced by currents, Ampère's Law, Faraday's Law of Induction. The Electromagnetic Spectrum. (2 h)

U.O. Didattica e servizi agli studenti
Strada prov.le 62 per Casamassima, km. 3,00
70010 Valenzano (Bari) - Italy
Tel. (+39) 080 5443944-45-46 • fax (+39) 080 5443939
francesca.colaianni@uniba.it

Books and bibliography	Fondamenti di Fisica: Halliday,Resnick,Walker. Casa Editrice Ambrosiana Fisica, Giancoli. Casa Editrice Ambrosiana.
Additional materials	

Work schedule			
Total	Lectures	Hands on (Laboratory, working groups, seminars, field trips)	Out-of-class study hours/ Self-study hours
Hours			
50	16	0	30
ECTS			
2			

Teaching strategy	
Classroom discussion and slide projection	
Expected learning outcomes	
Knowledge and understanding on:	
Applying knowledge and understanding on:	Discreet competence. Problem solving skills about the topics developed during the course. Ability to collaborate in a working group through the assignment and feasibility study of a project.
Soft skills	• Making informed judgments and choices Self-assessment of degree of knowledge. Ability, with autonomy of judgement, in formulation and execution of experimental procedures as well as in modelling of the studied physical systems. • Communicating knowledge and understanding Ability to develop the communication skills necessary for representing and discussing the fundamental arguments of the discipline. • Capacities to continue learning Comprehensive knowledge and skills of the acquisition and treatment methodologies of radiation for the investigation of nuclear and subnuclear physics processes. Skills and abilities that are essential for the profile of an expert in basic research.

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Assessment and feedback	
Methods of assessment	written and oral examination
Evaluation criteria	• Knowledge and understanding • Applying knowledge and understanding • Autonomy of judgment • Communicating knowledge and understanding • Communication skills • Capacities to continue learning
Criteria for assessment and attribution of the final mark	The final mark is given on the basis of 30 points (5 points for each question)
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