General information		
Academic subject	*Physics with elements of Mathematics*	
Degree course	*Farmacia*	
Year of study	*1*	
European Credit Transfer and Accumulation System (ECTS)		8
Language	*Italian*	
Academic Year	*2022-2023*	
Academic calendar (starting and ending date)	*November-June*	
Attendance	*Yes*	

Professor/ Lecturer Course A-E	
Name and Surname	Mauro De Palma
E-mail	Mauro.depalma@uniba.it
Telephone	080.5442442
Department and address	Physics Department – *R19*
Virtual headquarters	Teams – w5h6u62
Tutoring (time and day)	Tuesday and Thursday 15.00 – 17.00

Professor/ Lecturer Course F-N	
Name and Surname	Nicola Amoroso
E-mail	Nicola.amoroso@uniba.it
Telephone	+39 080 5442551
Department and address	Physics Department – 180
Virtual headquarters	Teams – pcpvkuo
Tutoring (time and day)	Monday and Wednesday 14.00 – 16.00

Professor/ Lecturer Course O-Z	
Name and Surname	Nicola Amoroso
E-mail	Nicola.amoroso@uniba.it
Telephone	+39 080 5442551
Department and address	Pharmacy Department – 523 bis
Virtual headquarters	Teams – pcpvkuo
Tutoring (time and day)	Monday and Wednesday 14.00 – 16.00

Syllabus	
Learning Objectives	*Fundamentals of mathematics and physics*
Course prerequisites	-
Contents	*Mathematics: Algebraic equations, Cartesian and Polar reference systems, analytic geometry, linear quadratic exponential and log functions, vectors.* *Physics: Physical quantities and units of measurements, vectors, cinematic in one, two and three dimensions, dynamics, forces, work and energy, systems of particles, rigid body, fluids, Bernoulli theorem, thermology and thermodynamics, perfect gas, kinetic theory, phase transitions, first and second principles of thermodynamics, electric charges, electric field, capacitors, electric work and potential energy, magnetic field, Lorentz and Laplace forces, Maxwell equations (hints), wave equations and electromagnetic waves (hints). Examples and applications to biological systems.*
Books and bibliography	Giancoli "Fisica", Terza Edizione (Casa Editrice Ambrosiana)

	James S. Walker "Fondamenti di Fisica" con MasteringPhysica,(Casa Editrice Pearson) Davidson "Metodi matematici per un corso introduttivo di Fisica" (EdiSes) Serway-Jewett, "Principi di Fisica" (EDISES)
Additional materials	

Work schedule			
Total	Lectures	Hands on (Laboratory, working groups, seminars, field trips)	Out-of-class study hours/ Self-study hours
Hours			
200	50	30	120
ECTS			
8	5	3	
Teaching strategy			
	Frontal lessons		
Expected learning outcomes			
Knowledge and understanding on:	o Fundamentals of physics and mathematical formulations		
Applying knowledge and understanding on:	o Modelling of real physical systems o Design and adoption of problem-solving strategies		

Soft skills	• *Making informed judgments and choices*
	     o Applying physics concepts to other domains (e.g., chemistry)
	     o Applying physics concepts to real contexts
	 • *Communicating knowledge and understanding*
	     o Precise and rigorous language
	     o Oral presentations and debate skills
	 • *Capacities to continue learning*
	     o Principles of Physics
	     o Problem solving
	     o Real systems		

Assessment and feedback	
Methods of assessment	*Written Exam: Problems and open questions*

Evaluation criteria	• *Knowledge and understanding*
	     o Coherence in answer/question assessment
	 • *Applying knowledge and understanding*
	     o Solve numerical problems
	 • *Autonomy of judgment*
	     o Application of physics concepts
	     o Solution of exercises
	 • *Communication skills*
	     o Clarity of oral exposition
	 • *Capacities to continue learning*
	     o Interconnections among different physical concepts and ideas

Criteria for assessment and attribution of the final mark	*The exam is passed with, at least, 18/30. The exam consists of three problems and two open questions.*
Additional information	