Testi del Syllabus

Resp. Did. **Matricola: null**

Anno offerta:	**2025/2026**
Insegnamento:	**2020009 - PHYSICS**
Corso di studio:	**D720 - FOUNDATION COURSE IN ENGINEERING AND SCIENCE**
Anno regolamento:	**2025**
CFU:	**5**
Settore:	**NN**
Anno corso:	**1**
Periodo:	**Ciclo Annuale Unico**

Testi in italiano

Lingua insegnamento	English
Contenuti	Part 1: Describing Motion [16h]. Distance vs. Displacement. Speed & Velocity. Acceleration. Graphing Motion. Position-Time and Velocity-Time Graphs. Understanding Slope and Area. Newton's Laws of Motion. Newton's First, Second, and Third Laws. Free-Body Diagrams. Forces in the Real World. Gravity, Friction, Normal Force. Part 2: Work & Power [10h]. Work = Force × Distance. Power = Work/Time. Energy Conservation. Kinetic Energy (KE = ½ mv²). Potential Energy (PE = mgh). Part 3: Momentum & Collisions [4h]. Momentum & Conservation. Momentum = Mass × Velocity. Conservation of Momentum in Collisions. Part 4: Electricity & Circuits [10h]. Electric Charge & Current. What is Charge? (Protons, Electrons). Voltage, Current, and Resistance. Ohm's Law & Simple Circuits. Ohm's Law (V = IR). Series vs. Parallel Circuits. Electricity in Everyday Life
Testi di riferimento	"College Physics 2e", OpenStax, available online: https://openstax.org/details/books/college-physics-2e?Book%20details
Obiettivi formativi	The objective of this course is to provide students with a fundamental conceptual understanding of key physical principles, focusing on motion, forces, energy, momentum, and electricity. The course emphasizes theoretical instruction, mathematical problem-solving, and real-world applications to develop scientific reasoning and analytical thinking skills. By engaging with core physics concepts through structured discussions, applied problem-solving, and conceptual analysis, students will gain a foundational awareness of essential principles
Prerequisiti	None
Metodi didattici	Lectures.

Altre informazioni	--
Modalità di verifica dell'apprendimento	Exam: Written test and oral exam. Assessment of learning is expressed on a thirty-point scale. A minimum score of 18/30 is required to pass

Obiettivi per lo sviluppo sostenibile

Codice	Descrizione

Testi in inglese

	English
	Part 1: Describing Motion [16h]. Distance vs. Displacement. Speed & Velocity. Acceleration. Graphing Motion. Position-Time and Velocity-Time Graphs. Understanding Slope and Area. Newton’s Laws of Motion. Newton’s First, Second, and Third Laws. Free-Body Diagrams. Forces in the Real World. Gravity, Friction, Normal Force. Part 2: Work & Power [10h]. Work = Force × Distance. Power = Work/Time. Energy Conservation. Kinetic Energy (KE = ½ mv²). Potential Energy (PE = mgh). Part 3: Momentum & Collisions [4h]. Momentum & Conservation. Momentum = Mass × Velocity. Conservation of Momentum in Collisions. Part 4: Electricity & Circuits [10h]. Electric Charge & Current. What is Charge? (Protons, Electrons). Voltage, Current, and Resistance. Ohm’s Law & Simple Circuits. Ohm’s Law (V = IR). Series vs. Parallel Circuits. Electricity in Everyday Life
	“College Physics 2e”, OpenStax, available online: https://openstax.org/details/books/college-physics-2e?Book%20details
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	None
	Lectures.
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	Exam: Written test and oral exam. Assessment of learning is expressed on a thirty-point scale. A minimum score of 18/30 is required to pass

Obiettivi per lo sviluppo sostenibile

Codice	Descrizione