



GREAT NECK PUBLIC SCHOOLS

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Curriculum Profile: AP Physics C

Department	Science		
Course Name	AP Physics C: Electricity and Magnetism		
Course Length	1 Year		
High School Credits	1		
Description	AP Course and Exam Description AP Physics C: Electricity and Magnetism is a calculus-based, college-level physics course. The course explores topics such as electrostatics; conductors, capacitors, and dielectrics; electric circuits; magnetic fields; and electromagnetism.		
Target/eligible students	High school students with aptitudes for science, algebra, trigonometry, calculus, data analysis, and critical reasoning.		
State Learning Standards Link(s)	New York State Framework - HS. Forces and interactions - HS. Energy - HS. Engineering Design		p.5 p.7 p.30
Primary texts and materials	OpenStax online text University Physics Volume 2 ; AP Classroom		
Scope/Sequence	*Standards/ Themes	Key Ideas, Term, and Concepts	
UNIT 1: Electrostatics	HS-PS2-1 HS-PS2-4 HS-PS3-5	Developing conceptual understanding, problem solving routines, and laboratory-based skills in the following areas: 1.1 Electrostatics: Charge and Coulomb's Law 1.2 Electrostatics: Electric Field and Electric Potential 1.3 Electrostatics: Electric Potential Due to Point Charges and Uniform Fields 1.4 Electrostatics: Gauss's Law 1.5 Electrostatics: Fields and Potentials of other charge distributions	p.5 p.7
UNIT 2: Conductors, Capacitors, Dielectrics	HS-PS3-2 HS-PS3-3	Developing conceptual understanding, problem solving routines, and laboratory-based skills in the following areas: 2.1 Conductors, Capacitors, Dielectrics: Electrostatics with Conductors	p.7

		• 2.2 Conductors, Capacitors, Dielectrics: Capacitors • 2.3 Conductors, Capacitors, Dielectrics: Dielectrics	
UNIT 3: Electric Circuits	HS-PS3-1 HS-PS3-3 HS-ETS1-2	Developing conceptual understanding, problem solving routines, and laboratory-based skills in the following areas: • 3.1 Electric Circuits: Current and Resistance • 3.2 Electric Circuits: Current, Resistance, and Power • 3.3 Electric Currents: Steady-State Direct-Current Circuits with Batteries and Resistors Only • 3.4 Capacitors in Circuits	p.7 p.30
UNIT 4: Magnetic Fields	HS-PS2-2 HS-PS2-3	Developing conceptual understanding, problem solving routines, and laboratory-based skills in the following areas: • 4.1 Magnetic Fields: Forces on Moving Charges in Magnetic Fields • 4.2 Magnetic Fields: Forces on Current Carrying Wires in Magnetic Fields • 4.3 Magnetic Fields: Fields of Long Current-Carrying Wires • 4.4 Magnetic Fields: Biot–Savart Law and Ampère's Law	p.5
UNIT 5: Electromagnetism	HS-PS2-5 HS-ETS1-2	Developing conceptual understanding, problem solving routines, and laboratory-based skills in the following areas: • 5.1 Electromagnetism: Electromagnetic Induction (Including Faraday's Law and Lenz's Law) • 5.2 Electromagnetism: Inductance (Including LR Circuits) • 5.3 Electromagnetism: Maxwell's Equations	p. 5 p.30
Additional Notes			