

AP Physics C (E&M)

Course	Dates	Schedule	Instructor
AP Physics C (E&M)	9/28/2026 - 5/3/2027 (off:10/5/2026, 10/12, 12/21, 12/28, 2/15/2027, 2/22, 2/29)	Monday 7:45 PM – 9:15 PM	Mr. Kovalcin
Assessment Test	12/21/2026 2/15/2027 4/12/2027 4/26/2027	Monday 6:00 PM – 9:00 PM	

Course Description

#Classes	Unit	
		APC Mechanics
1	12:1	Lab Activity - DC Circuits A-D Electric Currents and EMF's
2	12:2	Lab Activity - DC Circuits E-H Series and Parallel Circuits
3	12:3	Lab Activity - DC Circuits A-D Resistors in Series and Parallel
4	12:4	Lab Activity - DC Circuits M-P Resistance of Wires
5	12:5	Lab Activity - DC Circuits Q-T Power in Electric Circuits
6	12:6	Lab Activity - DC Circuits - Discharging Capacitors

7	12:7	Lab Activity - DC Circuits - Capacitors in Series/Parallel
8	11:A	Introduction to Electrostatics - Charging via Friction & Induction
9	11:A	Coulomb's Law & Electric Forces of Discrete Charge Distributions
10	11:A	Electric Fields of Discrete and Continuous Charge Distributions via Coulomb's Law - Calculus Application

11	11:A	Gauss' Law - Electric Fields produced by Spherical, Cylindrical and Planer Charge Distributions - Calculus Application
12	11:A	Introduction to Electric Potential - Discrete and Continuous Charge Distributions - Calculus Application
13	11:A	Capacitance by Design - Calculus Application Energy Functions
14	11:A	Introduction to the fundamental causes of Magnetic Forces and Fields - Magnetism in Matter
15	11:B	Magnetic Forces on Moving Charges and Current Carrying Wires
16	11:B	Calculating Magnetic Fields via Biot-Savart Law - Calculus Application
17	11:B	Calculating Magnetic Fields via Ampere's Law - Calculus Application - Lab Activity

18	11:B	Determining Magnetic Flux and Magnetic Inductance - Faraday's Law/Lenz's Law - Calculus Application
19	11:B	Magnetic Inductors and Capacitors in Electric Circuits - Calculus Application
20	APC - #1	APC Mechanics - Exam Practice & Review
21	APC - #2	APC Mechanics - Exam Practice & Review
22	APC - #3	APC Mechanics - Exam Practice & Review
23	APC - #4	Assessment Test
24	APC - #5	APC Mechanics - Exam Practice & Review
25	APC - #6	Assessment Test
26	APC - #7	APC Mechanics - Exam Practice & Review
		APC E&M Exam - Session 2 - Afternoon

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Profile

Mr. Kovalcin

Physics



Mr. Kovalcin, a physics enthusiast, has coached many students [one of which is currently the Department of Engineering Dean at Princeton] on the US Olympiad team and has contributed to a physics textbook. He has taught classroom physics for over 41 years at various institutions, including the Monmouth County Science and Engineering Center at Manalapan High School. His extensive experience includes teaching AP

Physics 1, 2, C: Mechanics, and C: Electricity and Magnetism, as well as Honors and Olympiad Physics. In addition, he has been tutoring physics online for 13 years. Additionally, he coached the Manalapan High School Physics team to first place in the National Science League. Mr. Kovalcin's classes feature engaging laboratory experiments and demonstrations, and he is known for clearly explaining difficult concepts, specifically the origins and applications of the laws of physics.

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