



PHYSICS 12

TEACHER: Mr. Basil Williams

ROOM: 109

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TEXTBOOK: BC Physics 12

COURSE OBJECTIVE

Physics 12 explores the fundamental principles that govern motion, forces, fields, energy, and momentum. Students will engage with scientific methods through inquiry-based learning, develop analytical skills through problem-solving, and apply their understanding to both theoretical and real-world contexts. Laboratory experiments and projects emphasize critical thinking, data analysis, and clear scientific communication.

COURSE CONTENT

Term 1

Unit 0: Problem Solving and Scientific Method

Unit 1: Vectors and Static Equilibrium

Unit 2: Kinematics

Unit 3: Momentum and Energy I

Term 2

Unit 3: Momentum and Energy II

Unit 4: Special Relativity

Unit 5: Circular Motion and Gravitation

Term 3

Unit 6: Electrostatics

Unit 7: Magnetic Forces

Unit 8: Electromagnetic Induction

Unit 9: Final Exam Preparation and Assessment



SUPPLEMENTARY RESOURCES

Book: *Physics of the Impossible* – Michio Kaku

Book: *Six Easy Pieces* – Richard Feynman

Book: *How Not to Be Wrong: The Power of Mathematical Thinking* – Jordan Ellenberg

Book: *Astrophysics for People in a Hurry* – Neil deGrasse Tyson

SUPPLIES (to be brought to every class)

2-inch 3-RING binder with lined paper

Pencils, eraser, Ruler*, Protractor*, Compass (OR *Complete Geometry set)

Scientific or Graphing Calculator (Recommended models: TI-83/84)

MARK BREAKDOWN

Classwork 30%

Includes readings, activities, and workbook assignments.

Labs and Quizzes 25%

Includes lab investigations and quizzes following each unit.

Mid and Term Finals 20%

Cumulative tests covering multiple units.

Final Project 5%

Includes term-based and final projects designed to apply learning.

Final Exam 20%

A comprehensive exam covering the entire course.