

WELCOME TO AP Physics

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CLASSICAL PHYSICS

AP Physics 1 Topics

1. Kinematics
2. Dynamics
3. Circular Motion and Gravitation
4. Energy
5. Momentum
6. Simple Harmonic Motion
7. Torque and Rotational Motion

RELATIVITY

AP Physics 2 Topics

1. Fluids: Pressure and Forces
2. Thermodynamics
3. Electric Force, Field, and Potential
4. Electric Circuits
5. Magnetism and Electromagnetic Induction
6. Geometric and Physical
7. Quantum, Atomic, and Nuclear Physics

PHILOSOPHY

PHILOSOPHY OF SCIENCE
JUST...WHY?
HOW COME?

THE FUTURE

QUANTUM GRAVITY

STRING THEORY

LOOP QUANTUM GRAVITY

DARK ENERGY

DARK MATTER

AND MANY MORE...

QUANTUM PHYSICS

PARTICLE PHYSICS

CONDENSED MATTER PHYSICS

QUANTUM INFORMATION

COMPUTERS

LASERS

THERMODYNAMICS

ENERGY

HEAT

TEMPERATURE

ENTROPY

ATOMIC THEORY

QUANTUM FIELD

SPECIAL THEORY OF RELATIVITY

$$E=mc^2$$

TIME

SPACE

CONSTANT SPEED OF LIGHT

ALBERT EINSTEIN

ISAAC NEWTON

LAW OF GRAVITATION

CALCULUS

CLASSICAL MECHANICS

FLUID MECHANICS

AERODYNAMICS

CHAOS THEORY

Course Grades:

Major Grades:	55%
Minor Grades:	35%
Practice Grades:	10%

Major Grades:

- Tests
 - 3 sections: (Multiple choice, multiple response, free response)

Minor Grades:

- Laboratory Activities
 - Designing an experiment using physics understanding and tools available

Practice Grade:

- Quizzes
 - Student will be given various amounts of ungraded practice work. Quizzes will act as checkpoints to test student's understanding of the practice that has been provided

Expectations:

Daily Life:

- ▶ Discussion Based Lectures
- ▶ Practice problems
- ▶ Designing labs based on physics knowledge

Essential Skills:

- Strong algebra, geometry, and trigonometry skills.
- Strong problem-solving skills - making connections between derived equations and phenomena discussed in class
- Self-Guided Practice outside of class

Road to Success:

- Attendance is critical
- Work the problems that are worked out in front of the class
 - Takes notes
- Find outside resources for reviewing
 - The Book
 - Youtube channels (Flipping Physics, Michel van Biezen)
- Schedule help sessions ASAP
 - Every morning at 8:30am in my room
 - Friday Tutoring Available

Expectations for exhibiting physics knowledge in AP Physics

- Computational analysis of physics variable
 - This typically involves identifying variables and working with equations to determine a missing value
- Visual representations of physics concepts
 - Reading graphs and diagrams and interpreting their meaning within physics concepts
- Succinctly making approximation using physics concepts
 - Making approximations for what will occur in a scenario even if you don't have variables to calculate it

Tips for preparing for assessments

- ▶ Take notes on Practice problems that are completed in lecture
 - ▶ Each unit has types of problems, any problem I work on with the class is likely one of these problem types
- ▶ Complete practice problems provided using notes, peers, and Mr. Seals for assistance
- ▶ Take some time to practice the problem without using assistance
 - ▶ Get as far as you can, when stuck refer to notes to finish
 - ▶ Restart the problem until you can work the whole problem without looking at notes or asking for help
- ▶ Practice explaining the problem to a peer in a succinct manner

QUESTIONS?