



AP Physics C - Mechanics Grand Haven High School



Course Number: D68A / D68B

Grade Level: 11/12

Credits : 1

Prerequisite Courses : Calculus (AB or BC) or Concurrently

Course Description

This course is equivalent to a first-year college physics class and is designed to prepare students for the AP Physics C Mechanics Exam given in May. Physics is the most fundamental of the sciences and deals with the relationships between matter and energy. Laboratory experiments are done to reinforce Physics concepts and give first hand experiences with basic and advanced lab procedures and equipment. The book "Giancoli - Physics for Scientists and Engineers" 4th edition is provided to students in hard copy form.

Course Objectives

Extensive use and application of mathematical skill, reasoning, and problem solving are integral to this course.

The first semester content covers three comprehensive units (spanning 11 chapters in whole or in part) that focus on the following three big ideas:

- 1) The Mathematical Description of Motion (Ch 1, 2, 3)
- 2) Forces and Interactions that cause Changes in Motion (Ch 4,5,6,21*)
- 3) the Role of Energy and Momentum in Driving Changes in Systems. (Ch 7,8,9,23*)

The second semester content covers 3 comprehensive units (spanning 8 chapters in whole or in part) that focus on the following four big ideas:

- 1) Rotational Motion (Ch 10,11)
- 2) The Role of Waves in Transporting Energy and Information (Ch 14,15*,16*)
- 3) Electricity and Magnetism Relationships and their Applications (Ch 25*,26*,27*)

* Partial coverage of topics in these chapters are included to provide a more complete view of the physical world; topics are NOT assessed on the AP exam.

Student Expectations

For Behavioral Expectations, see bottom of this page. All students and staff are expected to do their personal best in class daily. It is expected that students come to class ready to learn and are prepared to learn everyday. The classroom and laboratory have the potential to pose dangers to the student. Students will read and sign a Lab Safety Contract.

Building Behavioral Expectations

TEAM GH ... One Team, One Family, One Grand Haven. Be Kind. Always.

It is our expectation that ALL GHHS students, staff and parents will ... always give their best **EFFORT** in everything that they do, work hard to be **INCLUSIVE** of each other, show **RESPONSIBILITY** in class, the hallways, cafeteria and at events, and **WORK TOGETHER** at all times!

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Communication

Students and parents have immediate access to grades by using the Parent Internet Viewer. Teachers of this course will provide communication to parents of poorly performing students. Teachers are available for parental contact by phone and email. The teacher may use a teacher blog or other online resource to facilitate learning.

Grading Policy

Please see the link for the Science Department Grading Scale

This course has two graded categories:

Assessments (Tests/Quizzes): 70% of overall grade

Homework/Labs/Classwork/Other: 30% of overall grade

Scope and Sequence

1st Semester

Chapter 1-Introduction (partial)

Chapter 2: Describing Motion: Kinematics in One Dimension

Chapter 3: Kinematics in Two Dimensions; Vectors

Chapter 4: Dynamics: Newton's Laws of Motion

Chapter 5: Using Newton's Laws; Friction, Circular Motion, Drag

Chapter 6: Gravitation and Newton's Synthesis

Chapter 21*: Electric Charge and Electric Field (partial)

Chapter 7: Work and Energy

Chapter 8: Conservation of Energy

Chapter 23*: Electric Potential (partial)

Chapter 9: Linear Momentum

2nd Semester

Chapter 10: Rotational Motion

Chapter 11: Angular Momentum - General Rotation

Chapter 14: Oscillations

Chapter 15*: Wave Motion*

Chapter 16*: Sound

Chapter 25*: Electric Currents and Resistance

Chapter 26*: DC Circuits

Chapter 27*: Magnetism

Chapter 29*: Electromagnetic Induction

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