



## Honors Physics A & B Grand Haven High School



**Course Number:** D66A / D66B

**Grade Level:** 11/12

**Credits :** 1

**Prerequisite Courses :** Honors Algebra II (or concurrently)

### Course Description

This course is designed to meet and exceed the State of Michigan curriculum content expectations for Physics as both a GHHS and State of Michigan graduation requirement. 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. A student having his/her own scientific calculator is strongly recommended. Graphing calculators are helpful, but not required. The book "Giancoli - Physics" 6th 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 10 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 4,5,16,7)
- 3) the Role of Energy in Driving Changes in Systems. (Ch 6,17,18)

The second semester content covers three comprehensive units (spanning 9 chapters in whole or in part) that focus on the following three big ideas:

- 1) Electricity and Magnetism Relationships and their Applications (Ch 19,20,21)
- 2) the Role of Waves in Transporting both Energy and Information (Ch 11,12,22,24)
- 3) Optical Phenomena and Applications (Ch 23,25)

### 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!

**GO BUCS**

## 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 1-5,6,8: Math and Physics

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: Circular Motion; Gravitation

Chapter 16-1,5,6,7,8: Electric Charge and Electric Field

Chapter 7: Linear Momentum

Chapter 6: Work and Energy

Chapter 17: Electric Potential

Chapter 18: Electric Current

2<sup>nd</sup> Semester

Chapter 19: DC Circuits

Chapter 20: Magnetism

Chapter 21: Electromagnetic Induction

Chapter 11: Vibrations and Waves

Chapter 12: Sound

Chapter 22: Electromagnetic Waves

Chapter 24-1,4,10: The Wave Nature of Light

Chapter 23: Light: Geometric Optics

Chapter 25: Optical Instruments

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