

**Department:** Science

**Course #:** 531H

**Course Title:** Honors Physics

**DESCRIPTION OF COURSE:** Students will learn the behavior & structure of matter including Newton's Laws of Motion, Momentum, Energy, and optics. They will comprehend the importance of using graphs, a necessary tool in determining mathematical relationships observed in various experiments. Students will demonstrate their knowledge by using the computer, participating in lab investigations, projects, quizzes, and tests. In addition, students must complete the following required summer reading prior to the beginning of the course: "Six Easy Pieces" by Richard Feynman (ISBN# 13 978-0-465-02392-9). Upon reading "Six Easy Pieces", students will complete a journal and should see the physics teacher for details.

REQUIRED TOPICS OF STUDY	SUGGESTED INSTRUCTIONAL TIME	STANDARDS/ ELIGIBLE CONTENT
Kinematics	1½ weeks	<a href="#">S11.A.1.1.1</a> , <a href="#">S11.A.3.3.3</a> , <a href="#">S11.C.3.1.4</a> , <a href="#">S11.D.3.1.1</a> , 3.2.P.B1, 3.2.P.B6, 3.2.12.B6, 3.2.10.B1
Motion in Two Dimensions	2 weeks	<a href="#">S11.A.1.1.1</a> , <a href="#">S11.A.3.3.3</a> , <a href="#">S11.C.3.1.4</a> , <a href="#">S11.D.3.1.1</a> , 3.2.P.B1, 3.2.P.B6, 3.2.12.B6, 3.2.10.B6
Force and Motion	2 weeks	<a href="#">S11.A.1.1.1</a> , <a href="#">S11.A.3.3.3</a> , <a href="#">S11.C.3.1.4</a> , <a href="#">S11.D.3.1.1</a> , 3.2.P.B1, 3.2.P.B6, 3.2.12.B6, 3.2.10.B1, 3.2.10.B6
Work and Energy	2 weeks	<a href="#">S11.A.1.1.1</a> , <a href="#">S11.A.3.3.3</a> , <a href="#">S11.C.3.1.4</a> , <a href="#">S11.D.3.1.1</a> , 3.2.P.B2, 3.2.12.B2, 3.2.12.B6, 3.2.10.B2,
Linear Momentum & Collisions	1½ weeks	<a href="#">S11.A.1.1.1</a> , <a href="#">S11.A.3.3.3</a> , <a href="#">S11.C.3.1.4</a> , <a href="#">S11.D.3.1.1</a> , 3.2.P.B2, 3.2.12.B2, 3.2.10.B1
Circular Motion and Gravitation	1½ weeks	<a href="#">S11.A.1.1.1</a> , <a href="#">S11.A.3.3.3</a> , <a href="#">S11.C.3.1.4</a> , <a href="#">S11.D.3.1.1</a> , 3.2.P.B1, 3.2.P.B6, 3.2.12.B6, 3.2.P.B2,
Rotational Motion & Equilibrium	2 weeks	<a href="#">S11.A.1.1.1</a> , <a href="#">S11.A.3.3.3</a> , <a href="#">S11.C.3.1.4</a> , <a href="#">S11.D.3.1.1</a> , 3.2.P.B1, 3.2.12.B1,

REQUIRED TOPICS OF STUDY	SUGGESTED INSTRUCTIONAL TIME	STANDARDS/ ELIGIBLE CONTENT
Vibration and Waves	1½ weeks	<a href="#">S11.A.1.1.1</a> , <a href="#">S11.A.3.3.3</a> , <a href="#">S11.C.3.1.4</a> , <a href="#">S11.D.3.1.1</a> , 3.2.P.B1, 3.2.P.B2, 3.2.P.B5,
Electric Charge, Forces, and Fields	2 weeks	<a href="#">S11.A.1.1.1</a> , <a href="#">S11.A.3.3.3</a> , <a href="#">S11.C.3.1.4</a> , <a href="#">S11.D.3.1.1</a> , 3.2.P.B4, 3.2.12.B4, 3.2.10.B4

**RESOURCES: “Physics” by Wilson, Buffa, Lou. ©2010 by Pearson Education, Inc.; “Graphical Analysis” and “Data Studio” computer programs.**