

Instructor

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Availability

Monday	10:00 am – 2:00 pm	5:00 pm – 9:00 pm
Tuesday	10:00 am – 2:00 pm	5:00 pm – 9:00 pm
Wednesday	10:00 am – 2:00 pm	5:00 pm – 9:00 pm
Thursday	10:00 am – 2:00 pm	5:00 pm – 9:00 pm

The Course

This is a self-paced self-directed course, which means you are expected to work independently and make effective use of your time. Individual help is always available from your instructor at the Learning Centre.

Textbook

Giancoli Physics, sixth edition, published by Pearson/Prentice Hall

Study Guide

An important element for success in this course will be your study skills. It is much more productive to do some work every day rather than engaging in “marathon” sessions once every few days. This is what we suggest:

1. Set yourself realistic target dates.
2. Establish a study schedule and stick to it.

Provincial Exam

Physics 12 is a provincially examinable course. If you require a provincial exam score or choose to write the provincial exam, see an instructor for more information regarding provincial exam dates and application procedures. ***It is students' responsibility to register for provincial exams.*** If you are writing the Physics 12 Provincial Exam, you must write ***all*** the tests for this course ***one week prior*** to the provincial exam.

Course Outline

<i>Module 1: Mechanics</i>		Chapter	Omitted Sections
Unit 1	Kinematics in One Dimension	2	8
	Kinematics in Two Dimensions; Vectors	3	
Unit 2	Dynamics; Newton's Laws of Motion	4	
Unit 3	Circular Motion; Gravitation	5	4, 5
Unit 4	Work and Energy	6	2
	Linear Momentum	7	9, 10
Unit 5	Rotational Motion	8	5, 6, 7
	Static Equilibrium	9	

<i>Module 2: Electricity and Magnetism</i>		Chapter	Omitted Sections
Unit 6	Electric Charge and Electric Field	16	10, 11, 12
	Electric Potential	17	6, 7, 8, 9, 10, 11
Unit 7	Electric Currents	18	8, 9, 10
	DC Circuits	19	5, 6, 7, 8
Unit 8	Magnetism	20	8, 10, 12
	Electromagnetic Induction	21	5, 8, 9, 10, 11, 12, 13, 14

- You will write a **test for each unit** and a **final exam for each module**.
- It is important to review chapter 1 in the textbook before starting unit 1.

Assignments

There are three levels of questions in each problem set: I, II, and III. In order to master the skills included in each section, you are expected to complete as many questions at levels I and II as necessary. Level III questions and General Problems are *optional*. Use the answer key at the end of the textbook to check your work. In addition, you may access a solution manual available at the following website which contains detailed solutions to all the questions in textbook.

<http://ebookbrowse.com/giancoli-physics-6th-solutions-pdf-d191503482>

Hard copies of the solution manual are also available at the Learning Centre.

Evaluation

- All tests will include both multiple-choice and written-response questions.
- A standard formula sheet will be provided. You may add any other formulas that you find useful to this sheet and bring it to all your tests.
- The tests will be weighted as follows:

<u>TEST</u>	<u>PERCENT</u>
Unit 1	6
Unit 2	6
Unit 3	6
Unit 4	7
Unit 5	8
Module 1 Final	25
Unit 6	7
Unit 7	7
Unit 8	8
Module 2 Final	20
	100

You are expected to write the tests in the above order, starting with the unit 1 test and finishing with the Module 2 Final.

Important to Remember

- All tests **must** be written at CLOC during the Learning Centre hours on **Tuesdays, Wednesdays, and Thursdays**.
- You need to write the **unit 1 test** within 30 days of registering for this course.
- There is no rewrite for any of the tests.
- You may use a scientific non-programmable calculator on all the tests.
- You need to complete all your work and sign out 10 minutes before the closing time.

Prescribed Learning Outcomes

It is expected that students will:

Experiments and Graphical Methods

A1 *conduct appropriate experiments*

A2 *use graphical methods to analyze results of experiments*

Vectors

B1 *perform vector analysis in one or two dimensions*

Prescribed Learning Outcomes ... continued

It is expected that students will:

Kinematics

- C1 *apply vector analysis to solve practical navigation problems*
- C2 *apply the concepts of motion to various situations where acceleration is constant*

Dynamics

- D1 *apply Newton's laws of motion to solve problems involving acceleration, gravitational field strength, and friction*
- D2 *apply the concepts of dynamics to analyze one- dimensional or two-dimensional situations*

Work, Energy, and Power

- E1 *analyze the relationships among work, energy, and power*

Momentum

- F1 *use knowledge of momentum and impulse to analyze situations in one dimension*
- F2 *use knowledge of momentum and impulse to analyze situations in two dimensions*

Equilibrium

- G1 *use knowledge of force, torque, and equilibrium to analyze various situations*

Circular Motion

- H1 *use knowledge of uniform circular motion to analyze various situations*

Gravitation

- I1 *analyze the gravitational attraction between masses*

Electrostatics

- J1 *apply Coulomb's law to analyze electric forces*
- J2 *analyze electric fields and their effects on charged objects*
- J3 *calculate electric potential energy and change in electric potential energy*
- J4 *apply the concept of electric potential to analyze situations involving point charges*
- J5 *apply the principles of electrostatics to a variety of situations*

Electric Circuits

- K1 *apply Ohm's law and Kirchoff's laws to direct current circuits*
- K2 *relate efficiency to electric power, electric potential difference, current, and resistance*

Electromagnetism

- L1 *analyze electromagnetism, with reference to magnetic fields and their effects on moving charges*
- L2 *analyze the process of electromagnetic induction*