



AMBROSE

PHY 111 and 111T *Mechanics and Tutorial*
Winter 2007

Instructor: Kwan Chiu, Ph.D

Class Time: W/F 1:00-2:15 pm (PHY 111)

W 2:30-3:45 pm (PHY 111T - Tutorial)

Class Location: TBA

Office Hours: By appointment

Office: TBA

Phone: TBA

E-Mail: kchiu@auc-nuc.ca

Required Texts:

"Physics for Scientists and Engineers: A Strategic Approach" by Randall D. Knight, Addison-Wesley

Course Description:

This fundamental course in Physics will enhance the students' understanding of Newton's mechanics and their skills in problem solving. Upon completion of the course, the student should have a good concept and understanding of the following:

- Force and motion.
- Mass, weight and gravity.
- Motion in a line and in a plane and circular motion.
- Newton's first, second and third laws.
- Momentum, impulse, kinetic and potential energies and work.
- Elastic and inelastic collisions.
- Ropes and pulleys.
- Centre of mass and torque.

Course Schedule:

Week	Date		Chapters	Topics
	Wed.	Fri.		
1		9/7	1.1 - 1.5	Introduction. Position, time, velocity and acceleration
2	9/12	9/14	1.6 - 1.9, 2.1 - 2.3	Motion in 1 D. Graphs. Uniform motion. Instantaneous velocity.
3	9/19	9/21	2.5 - 2.8, 3.1 - 3.4	Constant acceleration. Vectors.
4	9/26	9/28	4.1 - 4.7	Forces. Newton's first and second laws
5	10/3	10/5	5.1 - 5.6	Newton's second law. Free body diagrams. Friction.
6	10/10			Unit Exam #1
	10/10	10/12	6.1	Kinematics in 2 D.
7	10/17	10/19	6.2 - 6.3, 7.1 - 7.5	Dynamics in 2-D. Projectile motion. Uniform circular motion.
8	10/24	10/26	12.2 - 12.3, 8.1 - 8.3	Circular orbits. Interacting systems. Action/reaction pairs. Newton's third law
9	10/31	11/2	8.4 - 8.5, 9.1	Ropes and pulleys. Momentum and impulse.
10	11/7			Unit Exam #2
	11/7		9.2 - 9.3	Conservation of Momentum.
		11/9	Remembrance Day - no class	
11	11/14	11/16	9.4 - 9.5, 10.2 - 10.3	Explosions and inelastic collisions. Kinetic and gravitational potential energy.
12	11/21	11/23	10.4 - 10.7	Restoring forces and elastic potential energy. Elastic collisions. Energy diagram
13	11/28	11/30	11.1 - 11.5, 12.5	Work and kinetic energy. Gravitational potential energy
14	12/5	12/7	12.6, 13.2 - 13.3	Satellite orbits and energies. Centre of mass. Torque.
	Final Exam Period			Final Exam

Course Requirements:

- Tutorial Worksheets (15%).
- MasteringPhysics Assignments (15%)

- Unit Exams (20% each).
- Final Exam (30%).

Each of the unit exams will cover material for the identified chapters only. Each exam may consist of multiple-choice questions and/or problem solving requiring the use of an electronic calculator. The final exam will cover material for the entire course.

Course Guidelines:

1. Attendance at class is expected from each student. After three (3) unexcused absences (per term), the instructor reserves the right to ask a student to withdraw from the class.
2. The written assignments are due on the dates specified. Extensions will only be granted upon request of the student at least one (1) week prior to the due date. In the case of illness or other extenuating circumstances, exceptions will be made.
3. Exams must be taken at the times specified. The student must inform the instructor immediately if there is a problem with taking a test on a certain date.

Grade Structure:

Percentage:	Letter Grade:	Grade Point Weight:
90-100	A+	4.0
85-89	A	3.7
80-84	A-	3.3
76-79	B+	3.0
72-75	B	2.7
68-71	B-	2.3
64-67	C+	2.0
60-63	C	1.7
55-59	C-	1.3
50-54	D	1.0
0-49	F	N/A

Important Notes:

- The last day to enter a course without permission and/or voluntary withdrawal from a course without financial penalty is **14 September 2007**
- The last day to voluntarily withdraw from a course or change to audit without academic penalty is **16 November 2007**
- It is the responsibility of all students to become familiar with and adhere to AUC-NUC Academic Policies, such as the policy on Academic Dishonesty, which are stated in the current Catalogue.