AMBROSE UNIVERSITY COLLEGE
PHYSICS 111 (MECHANICS)
COURSE OUTLINE FALL 2011

PROFESSOR: Dr. Krishna Mukerji **Room: A 1085-1**
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OBJECTIVES: Physics 111 Mechanics provides an introduction to Kinematics, Newton's laws, Work and Energy, Kinetic and Potential Energy, Conservation of Energy, Power, Conservation of Momentum, Forces, Equilibrium and Torque. The presentation is at the non-calculus level and problem-solving is emphasized. At the end of the course the students should be able to:

1. Understand and explain the basic concepts and laws of Kinematics and Newtonian Mechanics
2. Be able to apply the laws of motion to particular problems

PREREQUISITE: **Math 30** and preferably **Physics 30**
LECTURE: **Mondays and Wednesdays 8:15 am to 9:30 am Room Number A 1085-1**

TUTORIAL: **Fridays** **8:00 am to 10:00 am Room Number A 2151**

OFFICE HOURS: TBA

TEXT: **Physics, by Cutnell and Johnson 8ed. (John Wiley and Sons)**

TESTING:		
	Tutorials	15%
	Assignments	15%
	First Examination 1	15%
	Second Examination 2	15%
	Final Exam (3 hrs)	40%

ATTENDANCE: Students are expected to attend all classes for which they are registered. Unexcused absence may result is loss of marks. Unexcused absences may lead to penalty on the final grade. Where the student has been absent without permission or legitimate cause for more than one quarter of the classes, an instructor may bar a student from writing the final exam.

COURSE REQUIREMENTS: While students are encouraged to assist each other, each student must create her or his own original solution to assignments, quizzes and exams. Duplicate submissions will result in students involved receiving a zero for the submission.

ASSISTANCE: Your instructor will be available during class, during officer hours, and other times by appointment.

IMPORTANT NOTES: It is the responsibility of all students to become familiar with and adhere to academic polices of as are stated in the Student Handbook and Academic Calendar.

Personal information, that is information about an individual that may be used to identify that individual, may be collected as a requirement as a part of taking this class. Any information collect will only be used and disclosed for the purpose for which the collection was intended. For further information contact the Privacy Compliance Officer at privacy@auc-nuc.ca.

Although extensions to course work in the semester are at the discretion of the instructor, students may not turn in coursework for evaluation after the last day of scheduled final examination period unless they have received permission for a "Course Extension." Alternative times for final examination time must be submitted to the Registrar's Office by the appropriate deadline. Course extension are only granted for serious issues that arise "due to circumstances beyond the student's control".

We are committed to fostering personal integrity and will not overlook breaches of integrity such as plagiarism and cheating. Plagiarism and cheating can result in a failing grade for an assignment, for the course, or immediate dismissal from the university collage. Students are expected to be familiar with the policies in the current Academic Calendar and the Student Handbook that deal with plagiarism, cheating, and the penalties and procedures, for dealing with these matters. All cases of academic dishonesty are reported to the Academic Dean.

Students are advised to retrain this syllabus for their records.

GRADING: Student grades are earned as follows:

[0-50]	F	**Fail** - unsatisfactory performance or failure to meet course requirements.
[50-55]	D	**Minimum pass** - marginal performance, generally insufficient preparation for subsequent courses in the same subject.
[55-60]	D+	
[60-63]	C-	**Satisfactory** - basic understanding of the subject matter.
[63-67]	C	
[67-70]	C+	
[70-75]	B-	**Good** - clearly above average performance with knowledge of subject matter generally complete.
[75-80]	B	
[80-85]	B+	
[85-90]	A-	**Excellent** - superior performance, showing comprehensive understanding of the subject matter.
[90-95]	A	
[95-100]	A+	

Note: In order to attain a final grade higher than a D, you must **ACHIEVE AT LEAST 50% ON THE FINAL**

IMPORTANT DATES:	**HOLIDAYS (NO CLASS)**
FIRST DAY OF CLASSES: Wednesday,September 7	**Community Days (Spiritual Emphasis Days) - Wednesday, September 28 and Thursday, September 29**
LAST DAY OF CLASSES: Thursday, December 8	**Thanksgiving Day – Monday, October 10**
FINAL EXAM: Wednesday, December 14	**Remembrance Day – Friday, November 11**

Physics 111 Tentative Schedule for Fall 2011

	Topics covered	C&J reference
Week 1 Sept 7-9	*Introduction, Units, Conversation of units, Scalars and Vectors, Addition and Subtraction of Vectors*	1.1-1.9
Week 2 Sept 12-16	*Displacement, Speed and Velocity, Acceleration, Equations of Kinematics, Applications,*	2.1-2.5
Week 3 Sept 19-23	*Freely Falling bodies, Graphical analysis of Velocity and Acceleration, Kinematics in 2D*	2.6-2.8 3.1
Week 4 Sept 26-30	*Equations of Kinematics, Projectile Motion,*	3.1-3.3
Week 5 Oct 3-7	*Relative Velocity, Concept of Force and Mass*	3.4-3.5 4.1
Week 6 Oct 12-14	*Newton's Laws of Motion*	4.2-4.3
	First Examination - Friday, October 14	
Week 7 Oct 17-21	*Vector Nature of Newton's Second law of Motion, Newton's 3rd law of Motion, The Gravitational Force*	4.4-4.7
Week 8 Oct 24-28	*The Normal Force, Static and Kinetic Frictional Forces, The Tension Force*	4.8-4.10
Week 9 Oct 31-Nov-4	*Equilibrium and Nonequilibrium Applications of Newton's Laws of Motion,*	4.11-4.13
Week 10 Nov 7-9	*Uniform Circular Motion, Centripetal Acceleration and Force, Banked Curves, Satellites in Circular Orbits, Work done by Constant Force*	5.1-5.7 6.1
Week 11 Nov 14-18	*The Work – Energy Theorem and Kinetic Energy, Gravitational Potential Energy, Conservative vs Nonconservative Forces.*	6.2-6.5
Week 12 Nov 21-25	*Nonconservative Forces and the Work-Energy Theorem, Power*	6.6-6.10
	Second Examination – Friday November 25	
Week 13 Nov 28-Dec 2	*The Impulse and Momentum Theorem, The principle of Conservation of Linear Momentum, Collisions in one and two Dimensions*	7.1-7.4
Week 14 Dec 5-8	*The Action forces and Torques on Rigid Objects, Rigid objects in equilibrium.Review*	9.1-9.2
Dec 14	**Final Exam**	

Suggested Problems: All odd numbered **Focus on Concepts Questions** and **Problems** pertaining to the sections covered.
NOTE: You are reminded that this outline is a guideline prepared for your information. Exceptional circumstances may require modification to the outline.