Course Syllabus

UNIVERSITY OF CALGARY
DEPARTMENT OF PHYSICS and ASTRONOMY
COURSE OUTLINE

1.   **Course: Physics 227, Mechanics**

Lecture Sections: **L01:**	TuTh, 9:30 -10:45, SB 142
Lab Sections:	LAB1: Tu 11:00 - 13:50; **LAB 2**: Tu 14:00 - 16:50; **LAB 3:** Tu 17:00 - 19:50 (all in ST037)
Labatorial Documents:	http://www.pjl.ucalgary.ca/courses/physics227.html
Tutorial:	Th 14:00 - 15:50, SB 142
Instructor:	Dr. Ziad Abusara
Office:	SB 536
Tel. No.	403-220-7314
e-mail address	zabusara@ucalgary.ca
Office Hours:	Monday 9-11

2.   **PREREQUISITES:** A grade of 75% or higher in Physics 30; 60% or higher in Mathematics 31; and 75% or higher in Pure Mathematics 30 or a grade of "B" or above in Mathematics II (offered by Continuing Education).

   Antirequisites: Credit for Physics 227 and either 225 or 321 will not be allowed.

   Open only to declared Physics or Astrophysics majors, or by permission of the Department

3.   **GRADING**: The University policy on grading and related matters is described sections F.1 and F.2 of the online University Calendar. In determining the overall grade in the course the following weights will be used:

Laboratories (5)	15%	
Pre-Lecture Exercises	20%	
Test 1	10%	(Oct 16)
Test 2	10%	(Nov 6)
Test 3	10%	(Nov 29)
Final Examination	35%	(To be scheduled by the Registrar)

   Note: Students must receive a grade of 50% in the final examination in order to pass the course.

4.   **Missed Components of Term Work**. The regulations of the Faculty of Science pertaining to this matter are found in the Faculty of Science area of the Calendar in section 3.6: **http://www.ucalgary.ca/pubs/calendar/current/sc-3-6.html**. It is the student's responsibility to familiarize himself/herself with these regulations.   See also **http://www.ucalgary.ca/pubs/calendar/current/e-3.html**.

5.   **Dates and times of class exercises held outside of class hours: N/A**

6.   **TEXTBOOK**: *"Smart Physics – Classical Mechanics"*, written by Seltzer, Gladding, & Selen; published by Freeman. Note the first five chapters of the text are available free online..

7.   **EXAMINATION POLICY**: [Statement regarding aids allowed on tests and examinations (e.g., calculator, open book, etc.).]
   Students are encouraged to read the Calendar, Section G, on Examinations:
   http://www.ucalgary.ca/pubs/calendar/current/g.html.

8.   Optional and mandatory course fees: N/A.

Department Approval_____   **Date**_____

9. OTHER IMPORTANT INFORMATION FOR STUDENTS:

(a) ACADEMIC MISCONDUCT (cheating, plagiarism, or any other form) is a very serious offence that will be dealt with rigorously in all cases. A single offence may lead to disciplinary probation or suspension or expulsion. The Faculty of Science follows a zero tolerance policy regarding dishonesty. Please read the sections of the University Calendar under K. Student Misconduct (**http://www.ucalgary.ca/pubs/calendar/current/k.html**) to inform yourself of definitions, processes and penalties

(b) ASSEMBLY POINTS in case of emergency during class time. Be sure to FAMILIARIZE YOURSELF with the information at http://www.ucalgary.ca/emergencyplan/assemblypoints.

(c) ACADEMIC ACCOMMODATION POLICY. Students with documentable disabilities are referred to the following links:
Calendar entry on students with disabilities: **http://www.ucalgary.ca/pubs/calendar/current/b-1.html**
Disability Resource Centre: **http://www.ucalgary.ca/drc/**

(d) SAFEWALK: Campus Security will escort individuals day or night (**http://www.ucalgary.ca/security/safewalk/**). Call **220-5333** for assistance. Use any campus phone, emergency phone or the yellow phones located at most parking lot pay booths.

(e) FREEDOM OF INFORMATION AND PRIVACY: This course will be conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIPP). As one consequence**, students should identify themselves on all written work by placing their name on the front page and their ID number on each subsequent page**. For more information see also **http://www.ucalgary.ca/secretariat/privacy.**

(f) STUDENT UNION INFORMATION: VP Academic **Phone**: 220-3911 **Email**: suvpaca@ucagary.ca.
SU Faculty Rep. **Phone:** 220-3913 **Email:** sciencerep@su.ucalgary.ca Website **http://www.su.ucalgary.ca/home/contact.html**.
Student Ombudsman: **http://www.su.ucalgary.ca/services/student-services/student-rights.html**

(i) INTERNET and ELECTRONIC COMMUNICATION DEVICE Information. You can assume that in all classes that you attend, **your cell phone should be turned off**. Also, communication with other individuals, via laptop computers, Blackberries or other devices connectable to the Internet is not allowed in class time unless specifically permitted by the instructor. If you violate this policy you may be asked to leave the classroom. Repeated abuse may result in a charge of misconduct.

Appendix 1: Grading
Except for the labs, each piece of work (assignment, test or final examination) submitted by the student will be assigned a percentage score. Lab grades will be awarded solely on the basis of participation. The student's average percentage score for the various components listed above will be combined with the indicated weights to produce an overall percentage for the course, which will be used to determine the course letter grade, bearing in mind that a grade of F will result if the student does not pass (e.g., achieve a grade of 50% or better) the final exam. The conversion between course percentage and letter grade is as follows.

92% - 100%	A+	75% - 80%	B+	60% - 65%	C+	45% - 50%	D+
85% - 92%	A	70% - 75%	B	55% - 60%	C	40% - 45%	D
80% - 85%	A-	65% - 70%	B-	50% - 55%	C-	00% - 40%	F

Course Syllabus

Linear Dynamics (chapter 1-6)

1-D kinematics,
vectors and 2-D kinematics,
circular motion,
Newton's Laws,
Forces and Free-Body Diagrams,
 Friction

Conservation Laws (chapter 7-13)

Work and Energy,
conservative Forces and potential Energy,
Centre of Mass,
Conservation of Momentum,
Elastic Collisions,
Collisions, impulse, reference frames

Rotational Dynamics (chapter 14-19)

Rotational Kinematics & moment of Inertia,
Torque,
Rotational Dynamics,
Rotational Statistics,
Angular Momentum