Basic Course Information

Semester	**Fall 2015**	Instructor Name	**Dr. Alejandro Cozzani**
Course Title & #	**Physics 200**	Email	**alex.cozzani@imperial.edu**
CRN #	**10064**	Webpage (optional)	**Refer to Blackboard**
Room	**2731**	Office	**2767**
Class Dates	**August 17 to December 11, 2015** **Drop date: November 7, 2015.**	Office Hours	**Mondays through Thursday** **7:00- 7:30 AM,** **M-W: 1:00-2:00 PM.**
Class Days	**Mondays and Wednesdays**	Office Phone #	**760-355-5720**
Class Times Units	**7:30-9:35 and 9:45 to 11:10 PM** **5.0**	Office contact if student will be out or emergency	**Silvia Murray 760-355-6201 or Ofelia Duarte 760-355-6155**

Course Description

This course is designed to give an understanding of the fundamental principles of physics in the area of mechanics.

Student Learning Outcomes

1. Solve one-dimensional and two-dimensional motion problems involving position, velocity, and acceleration.
2. Solve problems (using algebra, calculus, and trigonometry as tools) involving Newton's Laws and their applications including friction.
3. Solve problems involving potential and kinetic energies and conservation of energy.
4. Solve problems involving impulse, momentum, and conservation of momentum.
5. Solve problems involving work, energy, and power.

Course Objectives

1. The student will solve problems involving SI units, scientific notation, dimensional analysis, and calculations to the proper number of significant digits.
2. The student will solve problems involving vectors, scalars, frames of reference, components of a vector, and unit vectors.
3. The student will solve one-dimensional motion problems involving position, velocity, and acceleration.
4. The student will solve problems involving two-dimensional motion with vector applications.
5. The student will solve problems involving Newton's Laws and their applications including friction.
6. The student will solve problems involving circular motion, accelerated frames of reference, and motion in the presence of resistive forces.
7. The student will solve problems involving work, energy, and power.
8. The student will solve problems involving potential and kinetic energies and conservation of energy.
9. The student will solve problems involving impulse, momentum, and center of mass.
10. The student will solve problems involving rotation about a fixed axis of a rigid body.
11. The student will solve problems involving angular momentum and torque as vector quantities.
12. The student will solve problems involving static equilibrium of a rigid body.
13. The student will solve problems involving simple harmonic motion, damped, and forced oscillations.
14. The student will solve problems involving the law of universal gravitation, Kepler's Laws of planetary motion, and gravitational potential energy.
15. The student will solve problems involving the mechanics of solids and fluids.

Textbooks & Other Resources or Links

1. **Textbook**: Fundamental of Physics, 10th edition, Chapters 1-15, ISBN: 978-1-118-23072-5.
2. **Author**: Halliday & Resnick, by Jearl Walker.

Course Requirements and Instructional Methods

1. **Homework:** The purpose of homework is to provide the student with sufficient practice to master all topics studied in class and to do well on tests. Please refer to Blackboard for the homework assignments.
   All homework assignments are due as follows and make sure to show your work. No work will be accepted after the deadline, no exceptions! If you are absent, it is your responsibility to submit homework on time (hard copies only, do not e-mail your work please).

   - ***HW # 1: due on or before September 29, 2015***
   - ***HW # 2: due on or before October 13, 2015***
   - ***HW # 3: due on or before October 27, 2015***
   - ***HW # 4: due on or before November 17, 2015***
   - ***HW # 5: due on or before December 01, 2015***
   - ***HW # 6: due on or before December 08, 2015.***

2. **Lab Reports:** These reports must be typed, double-space, font Times New Roman or similar, size 12, and the graphs must be done with Excel or any graphing program (i.e. TI InterActive). Reports are due a week after the specific experiment has been performed (If the experiment was done on September 03, it is due on September 10). No corrections will be allowed. No late submissions!
3. **Lecture Notes**: On lecture days, students are expected to have read the chapter in advance and bring some written notes to class (typed or handwritten) for discussion. No credit will be given but it is highly recommended.
4. **Tests or Exams:** They may be T/F, multiple choice or combination of T/F and/or multiple choice and free response questions. No makeup exams!
5. **Lab Tests:** Students will be tested on laboratory experiments. These will be based on the data collected and the analysis questions on the experiments. You may be asked the exact same questions or similar to those found on the lab manual and some theoretical questions related to those labs. No makeup exams!
6. The laboratory environment contains a variety of chemical and physical hazards. It is vital to understand those potential hazards and their safeguards in order to prevent accidents and injuries.
   a. In order to work in a laboratory in the Department of Physics at Imperial Valley College, the student must understand and agree to abide by the laboratory safety rules set forth. Please log into Webstar with your credentials and find Sports Survey and Safety Policy.
   b. Read the guidelines and answer *yes* to all the questions and click *submit*. Failure to comply will result in labs no participation with the corresponding zeros in experiments until the form is submitted.
7. **Mid-term:** It may include questions from the tests (recycled questions) and new questions (you have not seen them before but with similar difficulty). No makeup!
8. **Final Exam:** It may include questions from the tests (recycled questions) and new questions (you have not seen them before but with similar difficulty). The MC section will include ALL chapters. No makeup!
9. **Special Project:** Please see below.

Rubric

Criterion	*High (5)*	*Medium (3)*	*Medium-Low (2)*	*Low (1)*	*Student Evaluation*	*Instructor Evaluation*
Content/ information	*accurate and concise; all relevant information is*	*information is accurate; relevant information is present with some*	*information has some errors; most of the relevant information is*	*major errors in information presented; not all relevant*		

	presented completely; clearly describes all principles involved; gives accurate history of application or theory	*details missing; states all principles involved & describes most; gives brief history*	*present; states some of the principles covered; no history*	*information presented; names a few or none of the principles involved; no history*		
Presentation	*makes eye contact; speaks knowledgeably without referring to notes; involves fellow students; clear well modulated voice*	*some eye contact; little need to reference notes; some involvement with fellow students; varies voice at times*	*no eye contact; uses notes frequently; very little involvement with fellow students; rarely varies voice*	*avoids looking at audience; reads notes; no involvement with fellow students; speaks in a monotone*		
Visual Aids (models, diagrams, etc.)	*aid used in the presentation is neat and organized; provides excellent support to the presentation making the words more easily understood*	*aid is used but as such is messy (globs of glue, dirty/cramped, dirty, pieces of tapes, etc.); provides good support for the presentation*	*visual aid is messy and poorly organized; adds little support to the presentation*	*no visual aids used*		
Creativity	*keeps other students interested throughout*	*some students appear distracted at times during the presentation*	*fails to capture and maintain interest of all students*	*fails to capture student interest at any time*		
Organization	*presentation follows a logical pattern; smooth transitions between sections*	*presentation follows a logical pattern; only a few rough points*	*presentation not given in a logical sequence but some organization present; transitions are abrupt*	*presentation lacks organization; speaker appears to move randomly from one idea to the next*		
Understanding of the Topic	*presenter conveys an outstanding understanding of the material*	*presenter conveys a good understanding of the material*	*presenter lacks a complete understanding of the material*	*presenter has a poor understanding of the material*		

Oral presentation: 30 points

a. Follow Rubric for point distribution.

Topics: Any chapters not addressed in class (12-15) for Mechanics only.

Review questions: 10 points

b. Between 3 and 5.
c. They should reflect what you have taught to your classmates. You may use the ones available in BB but make sure you know the answers and the reason for those answers.

Review problems: 10 points (about three with increasing level of difficulty).

d. You have to be able to explain them to your classmates so they will understand.

Presentation dates: according to sign-up list. Once dates have been established, you cannot change it because presentations have a sequential order. You may pick the topic and your team members (no more than 3 per group) or you may work individually if you prefer to do so.
Minimum time is 30 minutes and up to an hour long.

- If you are absent the day of your presentation, your grade is ZERO (no exceptions!) so plan ahead.
- Use your own computer.

Course Grading Based on Course Objectives

The student's grade will depend on the following areas (not on total points):

Homework	20%
Tests – Presentation	20%
Lab Reports - Lab Tests	20%
Mid-term	20%
Final Exam	20%
TOTAL	**100%**

All grades are calculated by using the standard scale of:

A = 100-90% ***B = 89-80%*** ***C = 79-70%*** D = 69-60% F = 59% and below

Blackboard displays two grades: the weighted and the total. Your grade is the weighted one, so please keep it in mind.

Attendance

- A student who fails to attend the first meeting of a class or does not complete the first mandatory activity of an online class will be dropped by the instructor as of the first official meeting of that class. Should readmission be desired, the student's status will be the same as that of any other student who desires to add a class. It is the student's responsibility to drop or officially withdraw from the class. See General Catalog for details.
- Regular attendance in all classes is expected of all students. A student whose continuous, unexcused absences exceed the number of hours the class is scheduled to meet per week may be dropped. For online courses, students who fail to complete required activities for two consecutive weeks may be considered to have excessive absences and may be dropped.
- Absences attributed to the representation of the college at officially approved events (conferences, contests, and field trips) will be counted as 'excused' absences.

Classroom Etiquette

- Electronic Devices: Cell phones and electronic devices must be turned off and put away during class unless otherwise directed by the instructor.
- Calculators: scientific or graphing calculators can be used during class time and exams. NO phones or tablets as a substitute for calculators during exams.
- Food and Drink: are prohibited in all classrooms. Water bottles with lids/caps are the only exception. Additional restrictions will apply in labs. Please comply as directed.

- Disruptive Students: Students who disrupt or interfere with a class may be sent out of the room and told to meet with the Campus Disciplinary Officer before returning to continue with coursework. Disciplinary procedures will be followed as outlined in the General Catalog.
- Children in the classroom: Due to college rules and state laws, no one who is not enrolled in the class may attend, including children.

Academic Honesty

- Plagiarism is to take and present as one's own the writings or ideas of others, without citing the source. You should understand the concept of plagiarism and keep it in mind when taking exams and preparing written materials. If you do not understand how to correctly 'cite a source', you must ask for help.
- Cheating is defined as fraud, deceit, or dishonesty in an academic assignment or using or attempting to use materials, or assisting others in using materials, or assisting others in using materials, which are prohibited or inappropriate in the context of the academic assignment in question.

  Anyone caught cheating or plagiarizing will receive a zero (0) on the exam or assignment, and the instructor may report the incident to the Campus Disciplinary Officer, who may place related documentation in a file. Repeated acts of cheating may result in an F in the course and/or disciplinary action. Please refer to the General School Catalog for more information on academic dishonesty or other misconduct. Acts of cheating include, but are not limited to the following: (a) plagiarism; (b) copying or attempting to copy from others during an examination or on an assignment ;(c) communicating test information with another person during an examination; (d) allowing others to do an assignment or portion of an assignment, (e) use of a commercial term paper service.

Additional Help

- Blackboard support center: http://bbcrm.edusupportcenter.com/ics/support/default.asp?deptID=8543
- Learning Labs: There are several 'labs' on campus to assist you through the use of computers, tutors, or a combination. Please consult your college map for the Math Lab, Reading & Writing Lab, and Learning Services (library). Please speak to the instructor about labs unique to your specific program
- Library Services: There is more to our library than just books. You have access to tutors in the learning center, study rooms for small groups, and online access to a wealth of resources.

Disabled Student Programs and Services (DSPS)

Any student with a documented disability who may need educational accommodations should notify the instructor or the Disabled Student Programs and Services (DSP&S) office as soon as possible. The DSP&S office is located in Building 2100, telephone 760-355-6313 if you feel you need to be evaluated for educational accommodations.

Student Counseling and Health Services

Students have counseling and health services available, provided by the pre-paid Student Health Fee. We now also have a fulltime mental health counselor. For information see http://www.imperial.edu/students/student-health-center/. The IVC Student Health Center is located in the Health Science building in Room 2109, telephone 760-355-6310.

Student Rights and Responsibilities

Students have the right to experience a positive learning environment and due process. For further information regarding student rights and responsibilities please refer to the IVC General Catalog available online at
http://www.imperial.edu/index.php?option=com_docman&task=doc_download&gid=4516&Itemid=762

Information Literacy

Imperial Valley College is dedicated to help students skillfully discover, evaluate, and use information from all sources. Students can access tutorials at http://www.imperial.edu/courses-and-programs/divisions/arts-and-letters/library-department/info-lit-tutorials/

Anticipated Class Schedule / Calendar

WEEK # START DAY	CORE CONTENT	READING DUE	ASSIGMENT DUE
1-August 17	Day 1: Syllabus / Introduction Day 2: Measurement	--- Chapter 1	
2-August 24	Vectors	Chapter 3	
3-August 31	Motion in One Dimension	Chapter 2	
4- September 07	Motion in Two Dimensions	Chapter 4	
5- September 14	Force and Motion-I	Chapter 5	**Test # 1** **(Chapters 2-3-4)**
6- September 21	Force and Motion-II	Chapter 6	
7- September 28	Kinetic Energy and Work	Chapter 7	
8- October 05	Potential Energy and Conservation of Energy	Chapter 8	
9- October 12	Center of Mass and Linear Momentum	Chapter 9	**Mid-term**

			(Chapters 1-7)
10- October 19	Rotation	Chapter 10	
11- October 26	Rolling, Torque, and Angular Momentum		
12-November 02	Equilibrium and Elasticity	Chapter 12	
13- November 09	Gravitation	Chapter 13	
14- November 16	Fluids	Chapter 14	
November 23	***THANKSGIVING BREAK***	***NO CLASS***	
15-November 30	Day 1: Oscillations Day 2: Review for Final Exam	Chapter15	
16-December 07	**Day 1: Final Exam** **Day 2: Final Grades**		***Final Exam*** ***(Chapters 8-15)***

Honors Supplemental Syllabus

Code: CRN: *TBA*

In addition to the regularly assigned coursework on the syllabus, the student will complete the following:

DESCRIPTION OF HONORS REQUIREMENTS

Honors students will be required to demonstrate the ability to perform the process of the scientific method within the realm of mechanics. The student will be required to develop and build a machine based on mechanical principles to perform any kind of mechanical job. Please refrain from just building a Trebuchet machine or similar, and no guns (e.g. potato gun). You are expected to be original and be sure to always observe safety practices!

1. **Office Hours**: The student will arrange to meet with the instructor a minimum of 3 times during the semester in order to obtain guidance. **25 points**

2. **Review of Scientific Literature / Writing Assignment (75 points):** A thorough review of the scientific literature will be conducted in order to gain information about the knowledge of the principles being used and obtain ideas for experimental design of your machine. For example, your machine will be based on the laws of conservation of momentum and conservation of energy, so you are expected a thorough review of these laws and how they apply to your machine. You will be required to read at least five sources related to the topic of your choice. They can be essays, Internet sources, periodicals, etc. Make sure your sources are reliable and

they are required to be approved by the instructor. The writing requirement is a paper of at least five (5) pages long, double space, and size 12, times roman or similar, with appropriate bibliography (at least 5 sources).

3. **Journal** (**25 points):** Additionally, the student will keep a journal of his/her work with dates and tasks accomplished (10 – 25 pages).

4. **Presentation** (**50 points):** The student must prepare a power point (or equivalent) presentation for the class (15 – 30 minutes). Include relevant information about the theory behind your machine, data collected during the building of your machine, and pictures showing progress, and any other information you find appropriate. There is not set number of slides but make sure they are easy to read and concentrate on quality rather than quantity (a suggestion would be at least 30 slides).

5. **Machine** (**125 points)**: The student will bring the machine to class to demonstrate how it works.

HONORS SUPPLEMENTAL COURSE REQUIREMENTS

1	Office Hours	25 Points
1	Writing requirement	75 Points
1	Journal of work	25 Points
1	Presentation	50 Points
1	Machine	125 Points
Total Honors Points:		**300 Points**

Honors Points: 300/860 = 35% extra course work, you must score at least 240 points to earn Honors Credit.

***** NOTE: Please assess your class schedule, workload, and non-school related responsibilities prior to signing the Honors contract. Performing science- is a serious endeavor that will require a considerable time investment. Once you sign the Honors Contract you must complete the semester as an Honors Student, you cannot switch back to the Non-Honors course.***