Physics 221

Fall-2000
Room SB2 247
Mon & Wed 17:15-18:30 PM
http://www.physics.pdx.edu/~larosaa/

Dr. Andres La Rosa
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Office Hours: T: 12:30-1:30 PM
M & W: 18:30-19:00
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Text*: **Fundamentals of Physics: 6th Edition; by Halliday, Resnick and Walker**

Grading:

1st Exam	**30%**	
Final exam	**40%**	
Homework/Quiz	**30%**	**[1 quiz (5 points) + 3 homework assignments (10 points each). You need to total only 30 points)]**

Lecture Notes **They will be available in the Library Reserved Room, after class.**

Projects **Students will have the opportunity to prepare a project on a topic of their own interest and/or relevant to his/her career. The grade on the "Project Report " (up to a maximum of 4) will be added to the student's grade accumulated from exams and homework. This activity is optional. (Reference #1 below offers in each chapter a series of topics for project.)**

Students who typically do well in this course:

Have active participation in class.

They prepare their own portfolio of PH-221 problems. Solve a minimum of 5 question/problems of each chapter per week (from your textbook or the ones suggested during the lecture), and give them to Andres every Monday.

Syllabus updates **Check updates at http://www.physics.pdx.edu/~larosaa/**
Syllabus will be updated as the course progresses.
Practice problems given below will also be updated.

Date	Covered Chapter	Highlight topics
9/25	**Ch-1** (1-6), **Ch-2** (1-5)	**International System of Units**
9/27	**Ch-2**(6-8)	**MOTION IN ONE DIMENSION. (Special case: constant acceleration)**
	Practice problems:	**Ch-1** (1E, 5E, 7P, 10E, 11E, 16E, 21P, 23P) **Ch-2** (Q1, Q2, Q3, Q5, Q6, Q7; 6P, 8P, 10E, 12P, 36P, 38P, 42E, 43E, 54P, 61P)
HW #1 due Wednesday 10/4		
10/2	**Ch-3** (1-7), **Ch-4** (1-3)	**Vectors.** Position **&displacement,** speed **&** velocity
10/4	**Ch-4** (4-10)	**MOTION IN TWO DIMENSIONS. Relative motion**
	Practice problems:	**Ch-3** (Q1, Q2, Q5, Q6, Q8, 5E, 13E, 16E, 21P 26P, 31P, 36P, 8P) **Ch-4** (Q1, Q3, Q7, Q9, Q10, Q11, 4P, 15P, 24P, 28P, 33P, 40P, 44E, 47P, 51P, 58E, 59P)
10/9	**Quiz (Material from homework #1 and chapters 1-3)**	
10/11	**Ch-5** (1-6)	**Force and Motion, NEWTON's 1st, 2nd and 3rd LAWS** **FREE BODY DIAGRAM**

	Practice problems	**Ch-5** (Q3, Q5, Q6, Q9, Q12, 9E, 15E, 16E, 36P, 38P, 43P, 44P, 47P, 50P)
10/16	**Ch-5** (7-8)	**Friction force.**
10/18	**Ch-6** (3-4)	**Uniform Circular Motion**
	Practice problems	**Ch-6** (Q5, Q7, Q8, 1E, 8E, 14P, 15P, 19P, 25P, Q8, 27P, 37E, 41P, 43P, 45P)

2nd HW due 10/25

10/23	**Ch-7** (1-7)	**Concepts of WORK and KINETIC ENERGY**
10/25	**Ch-8**(1-7)	**POTENTIAL ENERGY and CONSERVATION OF ENERGY**
	Practice problems	**Ch-7** (Q2, Q3, Q4, Q5, Q6, Q7, Q8, Q13, 4P, 11P, 13P, 15E, 21E, 22P, 24E, 25E, 26P, 30E) **Ch-8** (Q2, Q4, Q5, Q6,Q8, Q9, 2E, 6P, 8P, 14P, 16P, 19P, 21P, 25P, 27P, 35P, 36E, 51P, 57P, 59P)

10/30 EXAM (Chapters 1-6) 30% of final grade

11/1	**Ch-9** (1-8)	**CONSERVATION OF LINEAR MOMENTUM**
	Practice problems	**Ch-9** (Q3, 1E, 15P, 19P, 7P, 20E, 27E, 32E, 36P, 47P)
11/6	**Ch-10** (1-6)	**Elastic and inelastic collisions**
11/8	**Ch-11** (1-6)	**Rotational motion**
	Practice problems	**Ch-10** (Q2, Q3, Q5, Q6, Q10, 8P, 20E, 22E, 25P, 26P, 33P, 35E, 40P) **Ch-11** (Q2, Q5, Q11, 1E, 8E, 17P, 19E, 29P, 33E, 58E, 66P)
11/13	**CH-11** (6-10), **Ch-12**(1-2)	**Rotational kinetic energy**
11/15	**Ch-12 (3-9)**	**ANGULAR MOMENTUM**
	Practice problems	**12** (Q1, 1E, 3E, 4E, 8P, 13P, 14P, 15E, 16P, 29E, 31E,, 44E)

3nd HW due 11/22

11/20	**Ch-13** (1-4)	**Equilibrium**
11/22	**Ch-14** (1-2)	
11/23-24	**Thanksgiving, University Closed (classes on Wed. eve meet as scheduled)**	
	Practice problems	**13** (Q1, Q3, Q5, 7E, 17P, 27P)

Final day to turn in "Project Reports" 11/22

11/27	**Ch-14** (3-5)	**Gravitation**
11/29	**Ch-14** (6-8)	
	Practice problems	**14**(9P, 10P,15E,17P45E)

12/4 Final Exam (Comprehensive) 17:30 PM - 19:20 PM 40% of grade

*** Additional references**

1. **R. L. Reese "University Physics"; Brooks/Cole Publishing Company; QC21.5.R435 1998.**
   I have found interesting complementary information in this textbook. Each chapter offers topic for research projects. This reference is available in the Library Reserve Room.
2. **Paul A. Tipler, "Physics" Volumes 1 and II, Fourth Edition; W. H. Freeman Publishers.**
   Reference does not spend too much time in the foundation; rather focuses more in the applications. This reference is available in the Library Reserve Room.
3. **R. Feynman, R. Leighton, M. Sands; "The Feynman Lectures On Physics"; Addison-Wesley; QC21.2.F49 1989.** This is an excellent reference, conveying a deeper understanding of physics