Physics 305- Dynamics I
Fall 2000

Class meeting time/place:	TTh 9:40-10:20am / 225 Ohlendorf (?)
Instructor:	*Dr. Ann M. Viano*
Office:	*423 Rhodes Tower*
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Office Hours:	*MW 9:00am-11:00am* *T 2:00pm-4:00pm, and by appointment*

Description and Goals: Dynamics is the study and application of the laws which determine, among all possible motions, which motion will actually take place in any given case. In this course, you will learn to thoroughly apply Newton's laws to describe the motion of any object.

Course Website: http://www.physics.rhodes.edu/dynamics/dynamics.html
Here you will find useful links, a copy of the syllabus and course schedule. Solutions to the homework assignments will also be posted here after their due date.

REQUIRED TEXT: Fowles & Cassiday, *Analytical Mechanics*, 6th Edition, Saunders College Publishing

COURSE WORK AND EVALUATION: Your grade for this course is based on the following activities, weighted as shown:

In-class exams (3)	30% (10% each)
Homework	40%
Final Exam	30%

- Homework is <u>due at the start of class</u> on the date indicated. Late homework assignments will be penalized by 10% of the total possible score per day that they are late.
- All graded work will be assigned a percentage score. You may estimate the corresponding letter grade by comparing it to this scale:

95-100 A; 90-95 A-; 87-89 B+; 83-86 B; 80-82 B-;
77-79 C+; 73-76 C; 70-72 C-; 60-69 D; <60 F

- The conditions of the Honor Code described in the Rhodes College Student Handbook apply to all assignments in this course unless otherwise specified by the instructor. You may consult each other about homework problems, but you must turn in your own work.
- Attendance is not recorded, but you are responsible for all material covered in class.

Course Calendar

This schedule shows the approximate dates for the topics listed. Our small class size allows us to taylor the course to our interests and needs as we progress through the term.

Date	Subject	Problem Set Due
Thu. Aug. 24	Ch. 1: Vectors	
Tue. Aug. 29	Ch. 1: Vectors	
Thu. Aug. 31	Ch. 1: Vector Derivatives	1a
Tue. Sep. 5	Ch. 1: Coordinate Systems	
Thu. Sep. 7	Ch. 2: Newton's Laws	1b
Tue. Sep. 12	Ch. 2: Particle Motion under constant force	
Thu. Sep. 14	Ch. 2: Energy	2a
Tue. Sep. 19	Ch. 2: Velocity dependent forces	
Thu. Sep. 21	Ch. 3: Simple Harmonic Oscillator	2b
Tue. Sep. 26	**EXAM 1**	
Thu. Sep. 28	Ch. 3: Damped Oscillators	
Tue. Oct. 3	Ch. 3: Driven Oscillators	3a
Thu. Oct. 5	Ch. 3: Non-linear Oscillator	
Tue. Oct. 10	Ch. 4: General Motion of a Particle in 3-D	3b
Thu. Oct. 12	Ch. 4: Projectile Motion revisited	
Tue. Oct. 17	*Fall Recess*	
Thu. Oct. 19	Ch. 4: 2D Oscillations	4a
Tue. Oct. 24	Ch. 4: Constrained Motion	
Thu. Oct. 26	Ch. 8: Center of Mass, Inertia	4b
Tue. Oct. 31	**EXAM 2**	
Thu. Nov. 2	Ch. 8: The Physical Pendulum	
Tue. Nov. 7	Ch. 8: Planar Motion	8a
Thu. Nov. 9	Ch. 8: Rigid Body Collisions	
Tue. Nov. 14	Ch. 10: Lagrangian Mechanics	8b
Thu. Nov. 16	Ch. 10: Lagrangian Mechanics	
Tue. Nov. 21	**EXAM 3**	
Thu. Nov. 23	*Thanksgiving Recess*	
Tue. Nov. 28	Ch. 10: Lagrangian Mechanics	10a
Thu. Nov. 30	Ch. 10: Lagrangian Mechanics	
Tue. Dec. 5	Review & Summary	10b

Friday, Dec. 8, 5:30pm-8:00pm **FINAL EXAM**