

# PH101-002 Fall 2003 Syllabus

**Prerequisite:** MA 100      **Credit:** 4 hours

**Class meets:** 329 Gallalee, TR 1:00 - 2:50, F 2:00 - 2:50.

**Instructor:** Dr. Sanjoy Sarker   216 Gallalee   348-3772   [ssarker@bama.ua.edu](mailto:ssarker@bama.ua.edu)

**Graduate Assistant:** Greg Keefer   317 Gallalee   348-0826  
[Keefe002@bama.ua.edu](mailto:Keefe002@bama.ua.edu)

**Office Hours:** W 2:00 - 3:00, T 10-11

Graduate office hours F: 1-2      T: 3-4      Room 329.

The department also has a help center with hours posted here:  
<http://bama.ua.edu/~gmankey/introl/helpcenter.htm>

**Text:**              Giancoli, Physics, 5th Ed.

**General Course Description:** Noncalculus-based introduction to classical mechanics, thermal physics

**Course Objectives:** After completing this course, the student should have both a conceptual and a quantitative understanding of the description of motion and the nature of forces, particularly gravity. S/he should have an understanding of energy, momentum, rotation, oscillations, the properties of fluids, heat, and waves. This will include the ability to set up and solve simple problems relating to the motion of objects, situations involving forces, conservation of energy and momentum, wave motion, and related concepts. The student should be able to analyze problems in both one and two dimensions, both qualitatively and quantitatively.

**COURSE APPROACH:** The course will emphasize fundamental concepts and problem-solving techniques in physics using interactive instruction, computer-based techniques, and cooperative learning. There will be no separate lab and lecture sections. The course will be team-taught by a faculty member (Sarker), and a graduate teaching assistant (Keefer). During classes on Tuesday and Thursday (two hours each) there will be a mix of lectures and group activities. The group activities will include short lab experiments, mostly using the computer for data acquisition and analysis, and other short 'exercises'. The exercises will consist of real-world problems and computer simulations. The one-hour Friday class will be a 'recitation' devoted to problem solving.

**PROBLEMS:** *Problems will be assigned weekly and are normally due before 1:00 Tuesday* (unless stated otherwise). The problem solutions must be submitted on the web using a web-based program. Details of the program will be given later. There will be short quizzes on fridays based on these problems and other material.

It is essential that you read the textbook, as the lectures will not cover all the material. As an incentive for reading the text, *you will be required to answer one question about the reading before each class period.* These questions will also be on the Web, and will be due by the start of class. There is an excellent website associated with the textbook that can be used by students for assistance with working problems (www.prenhall.com/giancoli) including practice problems and detailed solutions to selected problems.

**GRADING:** Problems will be submitted each week outside of class. In-class work will be collected at the end of each class period and will count as part of the course grade. Not all in-class work will be graded in detail. Occasionally, short (10 min) quizzes will be given on Friday based on in-class work done during the week and the most recently submitted problem assignment. Thus, class attendance is very important. There will be no make up of missed class work. The lowest activity grade and the lowest quiz grade will be dropped when computing the final course grade. There will be three one-hour exams and a comprehensive final exam.

In-class activities	20%
Problems + Quizzes	15%
Hour Exam I	15%
Hour Exam II	15%
Hour Exam III	15%
Final Exam	20%

**ATTENDANCE AND MAKEUP POLICY:** No makeup of in-class work or exams will be given. If you have a legitimate reason for missing a major exam, then you must inform me as soon as possible. If the reason is acceptable, then the final exam will count proportionately more. As described above, the lowest grades on in-class exercises, and recitation work will be dropped. This will allow a limited number of missed classes regardless of the reason for missing.

**ACADEMIC MISCONDUCT POLICY:** All acts of dishonesty in any work constitute academic misconduct. The *Academic Misconduct Disciplinary Policy* will be followed in the event of academic misconduct. While individual work is expected on exams, students are encouraged to work together when studying and preparing for homework.

**DISABILITY ACCOMODATIONS:** To request disability accommodations, please contact Disabilities Services (348-4285). After initial arrangements are made with that office, contact Dr. Jones.

## Tentative Schedule

Aug	21	Ch. 1			14	Ch. 7	<u>CollisonI.ab</u>
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	22	Recitation		Oct	16	Ch. 8	
	26	Ch. 2	1-D motion	Oct	17	Ch. 8	<u>Rot. lab</u>
	28	Ch. 2			21	Ch 8	
	29	Recitation			23	Ch 9	
Sep	2	Ch. 2	<u>Freefall Lab</u>		24	<b>Exam #2</b>	<b>Ch. 5-9</b>
	4	Ch. 3	2-D motion		28	Ch. 10	Fluids
	5	Recitation			30	Ch. 10	<u>Arch. Prin.</u>
	9	Ch. 3	<u>2-D lab</u>		31	Recitation	
	11	Ch. 4	Forces; <u>ex.</u>	Nov	4	Ch. 11	<u>Vibrations</u>
	12	Recitation			6	Ch. 11	Waves
	16	Ch. 4	<u>Forces lab</u>		7	Recitation	
	18	Ch. 4	<u>2nd Law Problems</u>		11	Ch. 12	Sound
	19	<b>Exam #1</b>	<b>Ch. 1-4</b>		13	Ch. 12	<u>St. waves</u>
	23	Ch. 5	Circ Motion		14	Recitation	
	25	Ch. 5	<u>Gravity IP</u>		18	Ch. 13	Temp.
	26	Recitation			20	Ch. 13	Kin. Thy.
	30	Ch. 6	Work,energy		21	<b>Exam #3</b>	<b>Ch 10-13</b>
Oct	2	Ch. 6	<u>Energy lab</u>	Dec	25	Ch. 14	Heat
	3	Recitation			2	Ch. 14	
	7	Ch. 6	<u>Energy cons</u>		4	Ch 15	
	9	Ch. 7	<u>Momentum</u>		5	Ch. 15	Review

			<u>IP</u>				
	10	Recitation					

**Final Exam** (comprehensive): Wednesday, Dec 10, 11:30 am - 2:00 pm.

### Suggested Problems

<u>Chapter</u>	<u>Suggested Problems</u>
1	1,5,9,21
2	2,5,9,11,14,16,19,20,23,25,27,35,36,38,41,44,47
3	1,4,6,8,11,12,15,18,20,21,26,27,31,35,36
4	2,5,6,11,12,13,15,16,23,27,28,30,35,39,43,44,45,51,52,53
5	2,4,7,8,9,12,13,17,27,29,34,37,39,43,44,47
6	2,5,7,8,11,18,19,23,25,28,29,32,36,37,39,41,43,49,51,54,58, 62,63,65
7	3,5,6,8,9,15,17,21,23,26,30,33,46,47,49
8	6,7,11,12,17,21,24,27,29,30,31,34,37,39,40,51,53,54,57,60, 62,65,69
9	
10	
11	
12	
13	1,4,9,12,15,16,17,20,25,28,31,32,34,35,38,42,45,48,51,52,54
14	3,7,9,14,16,19,20,22,24,25,28,33,36,38,39,43
15	2,4,6,7,9,11,18,19,22,24,25,34,37,39,40