Physics 2130 GENERAL PHYSICS Winter 2008

TIME (for lectures): M, W and F 12:50 PM – 1:45 PM. **Room:** 2009 Science Hall

TEXT: PHYSICS by Giambattista, Richardson and Richardson, McGraw-Hill.
For students taking both Physics 2130 & 2140, ISBN: 0078156742
For students taking only Physics 2130, ISBN: 0078157005.
Both packages include Webassign 2-Semester Access Card and New MCAT with CD.

LECTURER: Zhixian Zhou, Assistant Professor

TELEPHONE: 313-577-2751

E-MAIL: zxzhou@wayne.edu

COURSE WEB PAGE: WSU Blackboard

OFFICE HOURS: M and W: 2:45 PM – 3:45 PM at Room 243, Physics Research Building.

LABORATORY: PHY 2131 is the laboratory portion of PHY 2130. It is a co-requisite and, thus, is mandatory for you to be enrolled in both courses concurrently. However, laboratory is treated as a separate part of the course with its own grades and procedures which will be explained by your laboratory instructor. The experiments provide tangible demonstration and reinforcement of the ideas presented in this course. In addition, the laboratory is meant to show the importance of experiments in science. Your Laboratory Manual is to be purchased separately at the University Bookstore. For further details please inquire with Dr. Scott Payson at 313-577-3280. *Lab sections of PHY 2131 will not meet during the first week.*

QUIZ SECTIONS: Quiz sections meet once per week and are important. They allow you to meet together in small groups to ask questions, discuss lecture material, discuss assigned practice problems, etc. The practice problems are intended to test your understanding of the course material. In the same way you must practice to become proficient at a sport or musical instrument, you must work problems in order to master basic physics. *It is very important that you work out the solutions to each problem, and understand clearly the correct method of solution. It will be difficult to obtain a good grade in this course without making a conscientious effort to do all of the homework assignments.* Quiz instructors, by using a few examples, are there to help students to understand the problems and to learn problem solving skills. However, they may not have time to do all the problems in details. It is student's responsibility to work on all the practice problems. In the quiz sections, particularly during (but not limited to) the weeks indicated by asterisks, you may be given short quizzes, which will have questions and problems similar to your homework assignments. *Five best quizzes will be counted toward your final quiz score.* You will have the opportunity to earn up to **15% of points** towards your course grade for the performance of the quiz sections. *No individual make-up quizzes will be given.*

Quiz Sections	CRN	Instructor	Room
T 10:40AM 11:35AM	25530	Saperstein	0185 PHY
F 11:45AM - 12:40PM	25531	Harr	0028 MANO
W 11:45AM - 12:40PM	25532	Karchin	0024 MANO
Th 10:40AM - 11:35AM	25533	Talagala	0185 PHY

EXAMS: I do NOT grade Exams on curve. There will be three mid-term exams, consistingof multiple choice questions (no partial credit). You will drop the lowest of the three exam scores.

There will be NO make-up exams. Repeat: THERE WILL BE NO MAKE-UP EXAMS. This is the reason you are allowed to drop one exam score. If you must miss the exam, that will have to be the one you drop.

You MUST bring your Wayne State ID to the exam and present it to a proctor when you hand in the exam. No electronic devices (other than a calculator) are allowed in the room during the exam (no iPods, headphones, cell-phones, Blackberries, etc.)

BONUS POINTS (ONLINE HOMEWORK): The WebAssign online testing system (http://webassign.net) provides online homework submission and grading. You will be asked to solve and submit for grading some additional problems each week for a **maximum bonus 10%** of your final score. I may give you additional extra-credit points using WebAssign. You are encouraged to do the problems in a timely fashion. For maximum flexibility, the online homework problems are due after each exam of related content materials (e.g. problems related to the first four chapters are due after the first midterm.) If you buy the book in store, it will include a WebAssign access card valid for two semesters. However, if you loose this card you need to purchase it through the internet. *Your username and initial password are your six character WSU ID (e.g. "ab1234") and your nine digit WSU banner ID without leading zeros (the nine digit number on your One Card), respectively.* Please consult your WebAssign Student Guide for additional information.

GRADING: Your course grade will be determined by your performance in three midterm Exams, Online Homework (bonus), Quiz Section results, and a Final Exam. The Final will cover the material presented during the entire semester. The overall course grade will be determined on the basis of the following distribution:

Midterms – drop lowest score of 3	50 points (25 X 2=50 points)
Quiz section performance	15 points
Final Exam	35 points
Online Homework (bonus)	10 points
Total	110 points (out of 100)

The overall course grade will be determined on the basis of the following table:

Grade	Cumulated score	Grade	Cumulated score	Grade	Cumulated score
A	91 – 100	B-	70 – 74	D+	50 – 54
A-	85 – 90	C+	65 – 69	D	45 - 49
B+	80 – 84	C	60 – 64	D-	40 - 44
B	75 - 79	C-	55 - 59	E	0 – 39

ADDITIONAL STUDY HELP: If you have difficulty doing HW or lab work, or understanding some of the course material, you can get help from the *Physics Resource Center*, in room 172 Physics (the center will open in couple of weeks).

TENTATIVE CLASS SCHEDULE (Subject to change, * indicates a suggested quiz week)

Week	Date	Day	Lecture Topic	Reading Assignment
1	Jan 07	M	Syllabus, Introduction	1.1-1.3
	Jan 09	W	Scientific Notation and significant figures, Units, Dimensional analysis, and Graphs	1.4-1.9
	Jan 11	F	Displacement, and Velocity	2.1-2.3
2*	Jan 14	M	Acceleration, and Constant Acceleration in one Dimension	2.4-2.6
	Jan 16	W	Free Fall, and Vectors	2.7-3.2
	Jan 18	F	Motion in Two Dimensions, Projectile Motion, and Relative Velocity	3.3-3.6
3*	Jan 21	M	Holiday - University Closed	
	Jan 23	W	Force and Newton's Law of Motion	4.1-4.4
	Jan 25	F	Application of Newton's Law	4.5-4.11
4	Jan 28	M	Circular motion, and Radial Acceleration	5.1-5.3
	Jan 30	W	**First Exam 50 minutes (Chapter 1-4)**	
	Feb 1	F	Circular Orbits, Tangential and Angular Acceleration	5.4-5.7
5	Feb 4	M	Work and Energy, conservation of Energy	6.1-6.3
	Feb 6	W	Potential Energy, Hook's law, and Power	6.4-6.8
	Feb 8	F	Momentum and Impulse	7.1-7.3
6*	Feb 11	M	Conservation of momentum, Center of mass, Collision	7.4-7.8
	Feb 13	W	Rotational inertia, Torque, Work done by a torque	8.1-8.3
	Feb 15	F	Angular momentum, and Conservation of angular momentum	8.4-8.7
7*	Feb 18	M	Applications of Torque and Angular momentum	8.8-8.9
	Feb 20	W	Pressure, Density	9.1-9.3
	Feb 22	F	Buoyancy	9.4-9.6
8	Feb 25	M	**Second Exam 50 minutes (Chapter 5-9)**	
	Feb 27	W	Simple harmonic motion	10.5-10.7

	Feb 29	F	Pendulum	10.8-10.10
9	Mar 3	M	Waves and energy transport, Reflection and Interference	11.1-11.6
	Mar 5	W	Graphing waves, Standing waves, and Sound	11.7-12.5
	Mar 7	F	Sound waves, Doppler effect	12.6-12.10
10	Mar 10	M	Holiday - University Closed	
	Mar 12	W	Holiday - University Closed	
	Mar 14	F	Holiday - University Closed	
11*	Mar 17	M	Temperature, Thermal expansion	13.1-13.3
	Mar 19	W	Absolute Temperature, Ideal Gas	13.4-13.6
	Mar 21	F	Microscopic picture of ideal gas	13.7-13.8
12*	Mar 24	M	Heat, internal energy, and Specific heat	14.1-14.4
	Mar 26	W	Phase transitions	14.5-14.6
	Mar 28	F	Heat transfer	14.7-14.8
13	Mar 31	M	The first law of thermodynamics	15.1-15.4
	Apr 2	W	**Third Exam 50 minutes (Chapter 10 -14)**	
	Apr 4	F	Second law of thermodynamics, and Entropy	15.4-15.10
14	Apr 7	M	Light, Reflection, and Refraction of light	23.1-23.5
	Apr 9	W	Mirrors and Lenses	23.6-23.9
	Apr 11	F	Eye	24.3
15*	Apr 14	M	Interference	25.1-25.3
	Apr 16	W	Young's double-slit experiment, Diffraction	25.4-25.6
	Apr 18	F	Single slit diffraction	25.7-25.8
16	Apr 21	M	Review for the final exam	

Apr 28 Monday Final Exam (10:40AM -1:10PM) Cumulative

The Final Exam schedule is determined by the University. No, I cannot move it up. No, you can not take it early. Please do not ask.

PHY 2130 Winter 2008 - Homework Assignment

Chapter	Basic homework problems	Suggested additional problems
1	Problems – 14,21,29,32,45	15,20,53,56,57
2	Problems – 8,14,16,26,36,50	11,28,37,56, 62
3	Problems – 15,25,32,37,38	16,27,30,66,71
4	Problems – 7,26,42,54,73,77, 81	21,43,79
5	Problems – 8,14,19,40,47,51	15,22,30
6	Problems – 2,13,26,29, 46,61,64	8,15,31,33,41,47,57
7	Problems – 5,7,14,27,40,44,49,57	32,45,63
8	Problems – 2,13,17, 25,31,33,53,62,79	12, 22,51,61,114
9	Problems – 3,8,14,34	13,22,26,31,42
10	Problems – 29,43,49,63	27,32,45
11	Problems – 3,22,27,53	12,17, 55
12	Problems – 1,11,20,35	3,13,19,38
13	Problems – 2,10,49,52,57,60	4,17,46,65

14	Problems – 3,26,35,38,50,70	4,13,20,37,78
15	Problems – 3,7,12,16,24	4,17,28,38
23	Problems – 6,20,24,52,64,65	11,30,47,66
24	Problems – 25	27
25	Problems – 30,35,36	3,17,31,52

TIPS FOR SUCCEDDING IN INTRODUCTORY PHYSICS:

There is no "secret" to succeeding at Introductory Physics. The things you must do to achieve your best results are amazingly clear and should not be unknown to you. Previous experience with many, many students has shown the following traits/habits seem to be common to most students who excel in the introductory physics course.

1. **Get a book**. Read it. Use it. There are LOTS of very good hints and ideas in the Preface. Most students do not read the Preface, but in it the authors have given you their best advice on how to use the text successfully.
2. Actually **read the text** (with a highlighter if you prefer). This is preferably done before the class lecture, and if possible, afterward as well.
3. **Put in the time**. The text book recommends (and we agree) that you should be spending at least 2 hours outside of the class for every hour of lecture. This is at least 6 hours per week.
4. **Practice, practice, practice**. Do the quiz section assignments (before class), do the extra credit problems, do the suggested problems. You can watch Michael Jordan play basketball for 3 hours a day, every day, and you will never get better at basketball – not unless you yourself put in the practice.
5. **Strive for understanding**. Many students feel if they just "get the answer" from a TA, or help center person, they have accomplished the task. This is incorrect. You have accomplished your task when you truly understand the problem, how to set it up, how to solve it, and what it is asking. Just completing the problem to get some random answer is not enough.
6. **Come to the class.**