Physics 2130 **GENERAL PHYSICS** **Winter 2012**

TIME (for lectures): M, W and F 10:40 PM – 11:35 PM. **Room:** 2009 SCI

TEXT: PHYSICS by Giambattista, Richardson and Richardson, McGraw-Hill. Second Ed.

ISBN: 978-0-07-733968-5

Webassign Access Card.

LECTURER: Gavin Lawes

TELEPHONE: 313-577-2774 **OFFICE:** 391 Physics Building

E-MAIL: av4599@wayne.edu

COURSE WEB PAGE: WSU Blackboard

OFFICE HOURS: M and W: 12:00PM – 1:00 PM in Room 391, Physics Building.

LABORATORY: PHY 2131 is the laboratory portion of PHY 2130. It is a co-requisite so you must be enrolled in both courses concurrently. The laboratory is a separate course with its own grades and procedures, which will be explained by your laboratory instructor. The experiments in PHY 2131 are designed to complement the material covered in PHY2130. Your Laboratory Manual is to be purchased separately at the University Bookstore. *Lab sections of PHY 2131 will not meet until the week of January 23rd.*

QUIZ SECTIONS: Quiz sections meet once per week to provide you with an opportunity to ask questions, discuss lecture material, and work through assigned practice problems. Assigned practice problems will be posted chapter by chapter on Blackboard as the course progresses. These practice problems are intended to test your understanding of the course material and help prepare you for quizzes and exams. It is important that you solve these problems to solidify your mastery of the material. The quiz instructors will solve some of the sample problems each week, but there may not be enough time to cover each and every assigned problem in quiz section. In these quiz sections you will periodically be given a short quiz on material covered in lecture the previous week. There will be seven quizzes given during the semester, during the weeks indicated by asterisks. The scores on your five best quizzes will be used to calculate your quiz section grade, which contributes 50 points to the overall grade for the course. **There will be no make-up quizzes offered**.

EXAMS: There will be three 50 minute in class exams during the semester, as indicated on the course schedule. These exams will consist of multiple choice questions, including both conceptual and computational problems. Each exam will contribute 100 points towards your final grade in the course. You will be provided with a formula sheet prior to these exams. **There will be no make-up exams offered**. The lowest exam score will be replaced by half of your total score on the Final Exam if this improves your overall grade in the course. You must bring your Wayne State ID to the exam and be prepared to present it to a proctor if asked during the exam. A group photograph of the class will be taken during each exam. No electronic devices other than a calculator are allowed at any time during the exams. **The use of any electronic device other than a calculator, including, but not limited to, cellular telephones, music players, or tablet computers, during the exam will be considered as academic misconduct resulting in immediate sanction**. More information on academic integrity can be found in a document prepared by the Office of Teaching and Learning, which can be downloaded from:
http://www.otl.wayne.edu/pdf/AIB07Print.pdf.

ONLINE HOMEWORK: The WebAssign online testing system (http://webassign.net) provides online homework submission and grading. The weekly homework assignments completed through WebAssign will contribute 50 points to your final grade in the course. If you buy the textbook in the campus store, it should include a WebAssign access card valid for two semesters. Access codes can also be purchased separately. More information is available on the WebAssign website. You should already be enrolled for the course in WebAssign with your username and initial password set to your six character WSU ID (e.g. "ab1234") unless you already had a WebAssign account. You should change your password after you first login. In case you need to register manually, this class is called "PHY2130_W12_Morning". Additional information is available in your WebAssign Student Guide.

GRADING: Your course grade will be determined by your performance in the three in-class exams, the online homework, the quiz section grade, and a final exam. The final exam will cover the material presented during the entire semester and contribute 200 points towards your final grade in the course. The same policies and procedures for the in-class exams will also apply for the final exam. The final exam will include one long-answer problem. Students in all PHY2130 sections will take the same final exam at the same time during the final exam period. The overall course grade will be determined on the basis of the following distribution:

Three in-class exams (100 points each)	300 points
Quizzes (best 5 of 7)	50 points
Final Exam	200 points
Online Homework	50 points
Total	**600 points**

Points accumulated	Percent	Grade
540-600	91-100	A
510-539	85-90	A-
480-509	80-84	B+
450-479	75-79	B
420-449	70-74	B-
390-419	65-69	C+
360-389	60-64	C
330-359	55-59	C-
300-329	50-54	D+
270-299	45-49	D
240-269	40-44	D-
0-239	0-39	F

ADDITIONAL RESOURCES: Additional help and support for this course is available in the *Physics Resource Center*, in room 172 Physics Building. This will open a few weeks after the beginning of the semester. In addition, both your quiz instructor and I will have regular office hours where we will be available to discuss any difficulties you may have with the course material.

WITHDRAWAL DEADLINE: The deadline to withdraw from the course will be Saturday, March 24th, 2012. Any course withdrawal request on Pipeline after this date will be automatically denied.

ACADEMIC INTEGRITY: All forms of academic dishonesty are forbidden in this class. Specific examples of academic dishonesty include cheating during exams as well as changing test answers for re-grading. Continuing to write after the exam time is up will result in the grade of zero for that exam. All forms of academic dishonesty will be prosecuted to the fullest extent as outlined in the Student Due Process Policy of the University.

Selected excerpts from the Student Due Process Policy regarding disruptive behavior are presented below. These policies will be enforced during all academic activities relating to PHY 2130. Students who are disruptive during lectures, exams, or quiz sections will lose points from their final grade for the course. Repeat offenders may fail the course or be brought before the Dean of his or her College for further action.

Wayne State University – STUDENT DUE PROCESS POLICY

1.0 PREAMBLE

1. As provided by the Board of Governors in WSUCA 2.31.01, "Student Rights and Responsibilities," and as mandated by academic tradition, the students of Wayne State University possess specific rights and responsibilities. Students are expected to conduct themselves in a manner conducive to an environment, which encourages the free exchange of ideas and information. Students, as integral members of the academic community, have the right to the assurance that their rights are protected from arbitrary and capricious acts on the

part of any other member of the academic community. This Student Due Process Policy is designed to assure that students who are alleged to have engaged in unacceptable conduct receive fair and impartial consideration as specified in this policy.

4.0 PROHIBITED CONDUCT

The following conduct is subject to disciplinary action when it occurs on University premises, or in connection with a University course or University documents, or at a University-sponsored activity:

4.1 All forms of academic dishonesty.

4.3 Physical abuse of another person, or conduct which threatens or endangers another, or verbal or physical threats which cause reasonable apprehension of harm.

4.6 Disorderly behavior that interferes with activities authorized, sponsored, or permitted by the University such s teaching, research, administration, and including disorderly behavior that interferes with the freedom of expression of others.

5.0 DISCIPLINARY SANCTIONS

Students found to have committed an act, or acts of misconduct may be subject to one or more of the following sanctions, which shall take effect immediately upon imposition, unless otherwise stated in writing, except as provided in this policy.

5.1 Disciplinary Reprimand. Notification that the student has committed an act of misconduct, and warning that another offense may result in the imposition of a more serious sanction.

5.2 Disciplinary Probation. A disciplinary status which does not interfere with the student's right to enroll in and attend classes, but which includes specified requirements or restrictions (as, for example, restrictions upon the student's representing the University in any extracurricular activity, or running for or holding office in any student group or organization) for a specific period of time as determined in the particular case.

5.3 Suspension. A denial of the privilege of continuing or enrolling as a student anywhere within the University, and denial of any and all rights and privileges conferred by student status, for a specified period of time. At the termination of the suspension the student will be entitled to resume his/her education without meeting any special academic entrance requirements.

5.4 Expulsion.

5.5 Restitution.

5.6 Transcript disciplinary Record.

5.7 Other Sanction.

10.0 PRELIMINARY PROCEDURE

10.1 When a faculty member is persuaded that academic dishonesty has occurred, the faculty member may, without using the mechanism of filing a charge, adjust the grade downward (including downgrading to a failing grade) for the test, paper, or other course-related activity in question, or for the entire course.

STUDENT DISABILITY SERVICES: If you have a documented disability that requires accommodations, you will need to register with Student Disability Services (SDS) for coordination of your academic accommodations. The Student Disability Services (SDS) office is located at 1600 David Adamany Undergraduate Library in the Student Academic Success Services department. SDS telephone number is 313-577-1851 or 313-577-3365 (TDD only). Once you have your accommodations in place, I will be glad to meet with you privately during my office hours to discuss your special needs. Student Disability Services' mission is to assist the university in creating an accessible

community where students with disabilities have an equal opportunity to fully participate in their educational experience at Wayne State University.

Please be aware that a delay in getting SDS accommodation letters for the current semester may hinder the availability or facilitation of those accommodations in a timely manner. Therefore, it is in your best interest to get your accommodation letters as early in the semester as possible.

TENTATIVE CLASS SCHEDULE (Subject to change, * indicates weeks in which quizzes will be given in quiz section)

Week	Date	Day	Lecture Topic	Reading Assignment
1	Jan 9	M	Introduction, scientific notation, diagnostic exam	1.1-1.4
	Jan 11	W	Significant figures, units, graphs	1.4-1.9
	Jan 13	F	Displacement, velocity, acceleration	2.1-2.4
2	Jan 16	M	**HOLIDAY**	
	Jan 18	W	Motion along a line, constant acceleration, free fall	2.5-2.6
	Jan 20	F	Vectors	3.1-3.2
3*	Jan 23	M	Velocity, acceleration, motion in a plane	3.3-3.6
	Jan 25	W	Review	1-3
	Jan 27	F	**EXAM 1 (Ch. 1-3)**	
4	Jan 30	M	Force and Newton's Laws of Motion	4.1-4.4
	Feb 1	W	Gravity, contact forces	4.5-4.6
	Feb 3	F	Tension, applications of Newton's laws	4.7-4.8
5*	Feb 6	M	Rest of Chapter 4	4.8-4.10
	Feb 8	W	Uniform circular motion	5.1-5.3
	Feb 10	F	Orbits, non-uniform circular motion	5.4-5.5

6	Feb 13	M	Constant angular acceleration, apparent weight	5.6-5.7
	Feb 15	W	Work and Energy, kinetic energy	6.1-6.3
	Feb 17	F	Potential energy, variable forces	6.4-6.6
7*	Feb 20	M	Elastic potential energy, power, momentum	6.7, 6.8, 7.2
	Feb 22	W	Impulse, conservation of momentum	7.3-7.6
	Feb 24	F	Collisions	7.7-7.8
8	Feb 27	M	Rotational kinetic energy, torque, work	8.1-8.3
	Feb 29	W	Equilibrium, Newton's 2nd Law, rolling	8.4-8.7
	Mar 2	F	**EXAM 2 (Ch. 4-7)**	
9*	Mar 5	M	Angular momentum, conservation, vectors	8.8-8.9
	Mar 7	W	Fluids, pressure, Pascal's principle	9.1-9.3
	Mar 9	F	Fluid pressure, buoyancy, fluid flow	9.4-9.7
10	Mar 12	M	**SPRING BREAK**	
	Mar 14	W	**SPRING BREAK**	
	Mar 16	F	**SPRING BREAK**	
11*	Mar 19	M	Simple Harmonic Motion	10.5-10.7
	Mar 21	W	Pendulum, oscillations, resonance	10.8-10.10
	Mar 23	F	Waves, speed, periodic waves	11.1-11.6
12*	Mar 26	M	Superposition, Reflection, Standing Waves, Sound	11.7-12.3
	Mar 28	W	Sound Waves, Pipes, Doppler Effect	12.4-12.8

	Mar 30	F	Temperature, Thermal Expansion	13.1-13.3
13	Apr 2	M	Gases, Absolute Temperature, Ideal Gas Law	13.4-13.5
	Apr 4	W	**EXAM 3 (Ch. 8-12)**	
	Apr 6	F	Ideal Gas Law, Kinetic theory	13.6-13.8
14	Apr 9	M	Internal Energy, Heat, Specific Heat	14.1-14.3
	Apr 11	W	Ideal Gases, Phase Transitions, Latent Heat	14.4-14.5
	Apr 13	F	Heat Transfer, Conduction and Radiation	14.6-14.8
15*	Apr 16	M	Thermodynamics, The 1st Law, Ideal Gas	15.1-15.3
	Apr 18	W	Heat engines, Carnot cycle	15.4-15.7
	Apr 20	F	Second law of thermodynamics, Entropy	15.8-15.9
16	Apr 23	M	Review for Final	

FINAL EXAM: MAY 1st (1:20 PM) 100 GENERAL LECTURES (Cumulative)

TIPS FOR SUCCEEDING IN INTRODUCTORY PHYSICS:

There are a number of best-practices that are strongly correlated with achieving a high grade in introductory physics courses. These include:

1. **Attend lectures and quiz sections.** Regular class attendance is strongly associated with student success.

2. **Read the preface in the textbook.** In the preface, the authors have given you their best advice on how to use the text successfully.

3. **Complete the assigned reading.** This material should ideally be read both before and the class lecture. Make sure you read the "Master the Concepts" section at the end of each chapter. This provides a helpful summary of the material covered in this chapter.

4. **Put in the required time.** A typical suggestion is that students should work at least 2 hours outside of the classroom for every hour of lecture. This includes time spend before class getting familiar with the material and after class reviewing the material.

5. **Practice your problem solving skills.** Do the assigned homework, do the extra credit

problems, and do supplemental problems from the textbook.

6. **Master the concepts.** It is important to understand the concepts underlying the equations covered in this course. Since a formula sheet will be provided for exams, there is no need to memorize these equations. The challenge is in understanding how to apply them to solve specific problems.

7. **Attend office hours.** This will be most effective if you have specific problems that have arisen as you work through your assigned reading and weekly problems.