PHY 2170/2175 General Physics Fall 2011

Instructor: Professor Claude Pruneau,
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Office hours: Mon & Wed 11:00 – 12:00

Lecture time and location: MTWF 1:55pm – 2:50pm, 2009 Science Hall

Textbook: "***University Physics***" by Bauer and Westfall, 1st edition, Available at the Campus Bookstore. Buy the edition that includes WebAssign.

Course website: Wayne State Blackboard website; Please check it frequently for updated info. Lectures will be posted after each class.

Pre-requisites and Co-requisites: Pre-requisite MAT 2010 is **required**. MAT 2020 is the co-requisite. For PHY 2171 (Lab) taken concurrently with PHY 2170, it is a separate, one-credit laboratory course, with its own instructors, grades, procedures, and Lab Manual; *I do not teach this lab course*.

Quiz Sections: Meet once per week, to discuss homework assignments, ask questions regarding lectures, textbook, and course materials, and learn problem-solving skills. The attendance of quiz sections is *crucial* for understanding course contents and maintaining a good grade. Quiz Sections are taught by Professors Gavin and Putschke thereby giving you the opportunity to learn the material from a different person or point of view. There will be weekly quizzes consisting of one simple question. Questions will be given at the very end of each Quiz session. You will have 5 minutes to answer the question. The question will be assigned by me but graded by the quiz instructors. I will equalize the grades from different sections to account for instructor grading styles.

Homework: 1) Practice homework problems are assigned each week. Although they will not be graded, it is strongly recommended that you work out all the problems by yourself before bringing them to the quiz sections for discussion. You are highly encouraged to work through other problems at the end of each chapter. Also, it is extremely important to handle your homework and understand the course materials timely. Due to the fast pace of the course, it is almost impossible to recover once falling behind.

2) Online homework (**10%**): Posted on WebAssign online website (http://www.webassign.net) and graded automatically; Problems will be assigned each week, and will be due typically 1-2 weeks after being posted; Late submission of solutions will NOT be accepted. WebAssign access card valid for one or two semesters may be included in the textbook package; or you could purchase the access online. Please consult the Student Guide on WebAssign website for more

information.

Note that it is impossible to obtain a good grade in this course without making conscientious efforts on all the homework and attending course lectures and quiz sections.

WebAssign: The WebAssign website is http://www.webassign.net. You will need to self-register (i.e. you register into WebAssign yourself). To do this, click the "I have a Class Key" in the Account Log In box (Top right). You will then be prompted to supply a course/class key. Enter the key: wayne 0693 2783. And answer the questions. As a username, please use your Wayne State username ID.

Reading Assignments: The tentative schedule of lectures and reading assignments for this course is given below and is also posted in Blackboard. It is very important to complete the assigned reading and review/understand the lectured materials of the last class ***before*** the next lecture.

In-Class Pop-Quizzes (with i-Clicker2): I will give one or two pop quizzes during each lecture. The purpose of these quizzes is to (1) make sure you read the course material ahead of time, (2) attend class and stay engaged, and (3) that you understand the material being presented. We will use the University approved i-clicker2 system. The clickers are available for purchase at the campus bookstore. You will be able to use the clicker in PHY2180/85 as well. Note, that the i-clicker2 enables numerical questions. I will use that feature. You need to buy the new i-clicker2 not the old one… I will drop the 20% lowest scores. i.e. if we have a total of 40 pop quizzes, I will drop your lowest 8 pop quiz scores.

Exams: There will be three midterm/hourly exams (in class), and one final exam (comprehensive, i.e. cumulative), **all being closed-book exams**. There will be **NO make-up hourly exams** for any reason. Note that the final exam schedule is determined by the university, and CANNOT be changed.

You MUST bring your Wayne State ID to the exam and present it to a proctor when handing in the exam. No electronic devices (other than a calculator) are allowed. Any conduct of academic dishonesty will not be tolerated. Cheating on an exam will award you an F on the exam.

Exams will consists of 3 parts

- Conceptual questions (True/False and Multiple Choice)
- Short Numerical Questions (No Partial Credit)
- Long Numerical Questions (Partial Credit if work shown is reasonable and valid).

Planetarium Show (Extra-Credit): You can obtain up to 2% extra-credit by attending a show at the Wayne State Planetarium. The show schedule will be announced as soon as possible. You will need to sign an attendance form at the end of the show. The planetarium instructor will send me the attendance record of all students at the very end of the semester. This extra-credit will therefore be added to the Blackboard

grade book at the very end of the semester only.

Grading: Midterm exams: 16.6% each, totally 50%
Final exam: 20%
Quiz section: 10%
Online homework: 10%
Clicker Quizzes: 10%
Extra Credit: 2% (Planetarium Show)

Grading scale:

A	90 – 100%	B-	70 – 74%	D+	50 – 54%
A-	85 – 89%	C+	65 – 69%	D	45 – 49%
B+	80 – 84%	C	60 – 64%	D-	40 – 44%
B	75 – 79%	C-	55 – 59%	F	0 – 39%

Additional Resources and Help:

Physics Resource Center, located in Room 172 of Physics Research Building. The scheduled time will be announced later, or can be found from the physics department main office. This is a Help Center for students taking undergraduate physics; from there you can get assistance with your homework, lab work, and other issues related to this 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.

Course Schedule

Week	Date	Chapter #	Chapter Title	Lct #	Lecture Topic
1	30-Aug	1	**Overview**	1	Overview
1	1-Sep-11	1		2	Math Primer
2	5-Sep-11				**Labor Day - No School**
2	6-Sep-11	2	**Motion in a Straight Line**	3	Position, Displacement, Speed, Velocity
2	7-Sep-11	2		4	Acceleration and Kinematic Equations
2	9-Sep-11	2		5	Acceleration and Kinematic Equations
3	12-Sep-11	3	**Motion in 2 and 3 Dimensions**	6	Motion in Two and Three Dimensions
3	13-Sep-11	3		7	Maximum Height and Range
3	14-Sep-11	3		8	Realistic Trajectories and Relative Motion
3	16-Sep-11	4	**Force**	9	Force
4	19-Sep-11	4		10	Applications of Newton's Laws
4	20-Sep-11	4		11	Friction
4	21-Sep-11	5	**Kinetic Energy, Work, Power**	12	Energy, Kinetic Energy, Work
4	22-Sep-11	5		13	Work-Kinetic Energy, Work by Variable Forces
5	26-Sep-11	5		14	Power
5	27-Sep-11	6	**Potential Energy, Energy Conservation**	15	Potential Energy
5	28-Sep-11	6		16	Conservation of Mechanical Energy
5	30-Sep-11	6		17	Spring Example, Non-conservative Forces and Equilibrium
6	3-Oct-11	7	**Momentum and Collisions**	18	Momentum and Collisions, Impulse, Conservation of Momentum
6	4-Oct-11	7		19	Special Cases for Elastic 1d Collisions, 2D Collisions
6	5-Oct-11	7		20	Totally Inelastic Collisions, Ballistic Pendulum
6	7-Oct-11	8	**System of Particles and Extended Objects**	21	Center of Mass
7	10-Oct-11		**Chapter 2-7**		**EXAM #1**
7	11-Oct-11	8		22	Recoil and Rocket Motion
7	12-Oct-11	8		23	Coordinate Systems and Calculation of Center of Mass
7	14-Oct-11	9	**Circular Motion**	24	Circular Motion, Angular Velocity
8	17-Oct-11	9		25	Angular Acceleration
8	18-Oct-11	9		26	Angular Acceleration - Part 2
8	19-Oct-11	10	**Rotation**	27	Rotation
8	21-Oct-11	10		28	Parallel-Axes Theorem, Rolling Spheres
9	24-Oct-11	10		29	Torque and Angular Momentum
9	25-Oct-11	11	**Static Equilibrium**	30	Static Equilibrium
9	26-Oct-11	11		31	Examples Involving Static Equilibrium

9	28-Oct-11	11		32	Stability of Structures
10	31-Oct-11	12	**Gravitation**	33	Gravitation
10	1-Nov-11	12		34	Gravitational Potential Energy and Gravitational Potential, Kepler's First Law
10	2-Nov-11	12		35	Kepler's Second and Third Laws
10	4-Oct-11	13	**Solids and Fluids**	36	Solids and Fluids
11	7-Nov-11		**Chapters 7-12**		**EXAM #2**
11	8-Nov-11	13		37	Pascal's Principle, Archimedes' Principle, and Fluid Motion
11	9-Nov-11	14	**Oscillations**	38	Oscillations
11	11-Nov-11	14		39	The Pendulum
12	14-Nov-11	14		40	Damped and Driven Oscillations
12	15-Nov-11	15	**Waves**	41	Waves
12	16-Nov-11	15		42	Waves in 2-D and 3-D, Energy of Waves, Superposition of Waves, Superposition of Waves
12	18-Nov-11	17	**Temperature**	43	Definition of Temperature
13	21-Nov-11	17		44	Thermal Phenomena
13	22-Nov-11	18	**Heat and 1st Law of Thermodynamics**	45	Definition of Heat
13	23-Nov-11	18		46	First Law of Thermodynamics
13	25-Nov-11				Thanks Giving Recess
14	28-Nov-11	18		47	Latent Heat and Modes of Energy Transfer
14	29-Nov-11	19	**Ideal Gases**	48	Emperical Gas Law
14	30-Nov-11	19		49	Equipartition Theorem and Specific Heat of Ideal Gas
14	2-Dec-11	19		50	Kinetic Theory of Ideal Gases
15	5-Dec-11	20	**Second Law of Thermodynamics**	51	Reversible and Irreversible Processes
15	6-Dec-11	20		52	Engines
15	7-Dec-11	20		53	Second Law of Thermodynamics
15	9-Dec-11		**Review**	54	TBD
16	12-Dec-11		**Chapters 13-20**		**EXAM #3**
	14-Dec-11		**Chapters 2-20**		**FINAL EXAM**