Syllabus: PHY 2130, Section 901, CRN 14248 Fall 2013

This Syllabus covers algebra-based General Physics 2130 and the associated Discussion/Quiz sections. The website for this course is on the WSU Blackboard, *Fall 2013 PHY 2130 General Physics Sec 901*. The course covers Mechanics, Fluid Mechanics, Oscillations and Mechanical Waves, and Thermodynamics. The prerequisite is High School algebra and trigonometry. This section meets Tuesday and Thursday 6:00 pm to 7:25 pm for class, in 718 Oakland Center. Quiz sections are for problem discussion and quizzing, and meet as follows, starting the first week of classes:

Quiz Sections	**Section**	**CRN**	**Instructor**	**Room**
Tuesday 7:30 PM	902	14249	Indermeet Kohli	718 OAK
Thursday 7:30 PM	903	14250	Indermeet Kohli	718 OAK

NOTE: The Lab course, PHY 2131, is a separate course, with a separate Syllabus, schedule, Instructor and grades. The content of the labs is consistent with PHY 2130, but the sequence is different. Labs begin during the second full week of classes, the week of September 9.
NOTE: The WSU last day to withdraw from a class is Saturday November 9.

PHY 2130 Instructor for this section: Indermeet Kohli; indermeet.kohli@wayne.edu

33737 W 12 Mile Rd
Farmington Hills, MI 48331
Phone: 313-577-3592

Office Hours: Tuesday and Thursday faculty office - 5:00 – 6:00 PM

Course Materials:

- Text – Physics, 2nd Edition by Giambattista, Richardson and Richardson, published by McGraw Hill, available in the Barnes and Noble WSU campus bookstore. This is also the textbook for Physics 2140. Other editions and used textbooks may also be available.
- WebAssign access card. WebAssign is an online homework system, at *www.webassign.net*. A two-semester WebAssign access card is included in the price of a new textbook purchased at the BN campus bookstore, or, if you are not getting a new textbook from this bookstore, available separately from the Barnes and Noble campus bookstore. Or, pay online at *www.webassign.net*. If you pay online, make sure to select the above Giambattista, Richardson and Richardson textbook, 2nd edition.

Notes: PowerPoint notes for each class will normally be available on the Blackboard website for this course, after the class.

Goal: The goal of this course, which is the traditional goal in Physics, is that you be able to apply basic physical laws to analyze real-life or unstructured situations ("word problems"), both descriptively and numerically, at least for the aspects covered in this course. You should be able to analyze both existing situations, and situations that you or someone else want to construct. Research and experience indicate that, to get to this point, you also need to be able to:

- State and paraphrase definitions and laws, and apply them in simple cases
- Have opportunity to practice, with feedback (e.g. homework) before exams.

Consequently, homework and quiz questions will include such questions.

Homework: Each week, several WebAssign problems will be assigned for credit. All problems for each week are due Sunday of that week (earlier for weeks before exams). These problems can be discussed in a general

way in the Quiz Sections, but not worked out to a final numerical answer. You "do" a WebAssign problem by logging in to the WebAssign site (*www.WebAssign.net*), reading the problem, working it out on the side, and entering the answer in the website. I allow you five tries for each problem, to get the answer right. You will lose 5% for each attempt after the first.

Your Webassign account should be set up by you using the following information:

- Class Key: wayne 43739737
- For User ID: Please use first initial and full last name, up to a maximum of eight characters total, excluding any special characters such as periods or dashes.
- Institution: wayne (just that, not Wayne State University or anything else)
  Note: Student Quick start guide will be posted on blackboard.

In addition, each week, additional non-credit problems will be posted on WebAssign and non-credit conceptual questions will be posted on Blackboard. The non-credit problems will be similar to the multiple-choice problems that will be on the Exams, except that the choices will be removed. These problems (both types) can be worked out in the Quiz Sections in complete detail.

NOTE 1 ON HOMEWORK AND EXAM PROBLEMS: The Exams will be mostly problems (plus a few definitions, formula statements and so forth), modified as in a list of options that will be published on Blackboard. There is NO WAY that you will be able to do the modified problems on the Exams without practicing doing problems ON YOUR OWN, first. You might try to memorize how to do each assigned homework problem but at least some of the Exam problems will be of types that you have not exactly seen before. Your goal should be to understand how to apply the basic theories to solve problems. If you can apply the basic theories, on your own, then you should be able to do all of the Exam problems.

EXAMS: There will be three 50-minute exams in class, consisting of multiple choice questions (no partial credit). The lowest exam score may be replaced by half of your earned score on the Final Exam. Therefore, no makeup exams will be given. You MUST bring your Wayne State ID to the exam and 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 in the room during the exam (**no iPods, headphones, cell-phones, Blackberries, etc**.). You will need a stand-alone calculator ("standalone" excludes calculators on cell phones, for example). Graphing calculators or other calculators with communications capacity will not be allowed.

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

Three In-class 50 Minute Exams (100 points each)	300 points
Quizzes (best 6), attendance in quiz sections	70 (60+10) points
Final Exam	200 points
WebAssign	30 points
Extra credit for attending a WSU Planetarium session	3 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 STUDY HELP: If you have difficulty doing homework or lab work, or understanding some of the course material, you can get help from the *Physics Resource Center*, in room 172 Physics Building The center will open a couple of weeks after the beginning of the semester.

Responsibility for Work: Whether on homework or an exam, I will never take seriously a statement such as, "but that's how (another student or someone in the Resource Center or anyone else) told me to do it." Your work is your own, and you should always try to tie the solution back to the fundamental laws. You can always check with me.

Accommodation: If you feel that you may need an accommodation based on the impact of a disability, please feel free to contact me privately to discuss your specific needs. Additionally, Student Disability Services (SDS, formerly the Office of Educational Accessibility Services), coordinates reasonable accommodations for students with documented disabilities. The office is located in 1600 UGL, phone: 313-577-1851 (Voice) / 577-3365(TTY), web site http://studentdisability.wayne.edu/.

Plagiarism: In general, plagiarism is presenting someone else's work as your own, whether on purpose or through negligence. For a more detailed discussion, see http://www.clas.wayne.edu/unit-inner.asp?UnitID=24&WebPageID=924 . In this course, for the first instance of plagiarism, the work will be graded down 40%. For the second instance, the assignment will be failed with a zero, and for the third, the course will be failed. In each case, including the first, a memo will be sent to the Physics Department describing the circumstances.

The most important consequence of plagiarism, whether or not it is detected, is that you will not be able to do the work, and moreover you will not have the confidence that you can do that part of the work. Surely one of the primary benefits of a college-level course is the ability to step up in the outside world and say with confidence, "I can do that," and this is also the source of many of the other benefits. You may "get away" with plagiarism once or even more than once, but the main penalty, far worse than any grade punishment, is that your college education, which is one of the best things you can do for yourself, will not have the benefits you are looking for.

TENTATIVE CLASS SCHEDULE : Subject to change; * indicates weeks in which quizzes will be given in quiz section. Skipped sections (see "Topics" column) will not appear in class, homework, quizzes or exams.

Week	Date	Day	Lecture Topics	Reading Assignment
1	Aug 29	Th	Introduction, Scientific notations, Significant figures, Units, Graphs	1.1-1.9
2	Sept 3	T	Displacement, Velocity, Acceleration, Motion along a line, Constant Acceleration, Free fall	2.1-2.6
	Sept 5	Th	Vectors, Velocity, Acceleration	3.1 - 3.4
3*	Sept 10	T	Motion in plane, Force and Newton's Laws of Motion, Gravity (skip 3.6)	3.5, 4.1-4.4
	Sept 12	Th	Forces: gravity, contact, tension	4.5- 4.7
4*	Sept 17	T	Solving Force Problems, Apparent weight, Uniform Circular Motion (skip 4.11-4.12)	4.8-4.10, 5.1
	Sept 19	Th	**Review for Exam 1**	1-4
5	Sept 24	T	**EXAM 1 (Ch. 1-4)**	1-4
	Sept 26	Th	Circular Motion Examples	5.2 – 5.4
6*	Oct 1	T	Apparent weight, Work and Energy (skip 5.5-5.6)	5.7, 6.1-6.2
	Oct 3	Th	kinetic energy, Potential energy, variable forces	6.3-6.6
7	Oct 8	T	Elastic potential energy, power, momentum, Impulse	6.7-6.8, 7.2-7.3
	Oct 10	Th	conservation of momentum, Collision	7.3-7.8
8*	Oct 15	T	Rotational kinetic energy, torque, work, Equilibrium, Newton's 2nd Law	8.1-8.6
	Oct 17	Th	Angular momentum, pressure (Skip 8.7)	8.8-8.9,9.1-9.2
9	Oct 22	T	**Review Exam 2**	5-8
	Oct 24	Th	**EXAM 2 (Ch. 5-8)**	5-8
10*	Oct 29	T	Pascal's principle, Fluid pressure, buoyancy, fluid flow	9.3-9.7
	Oct 31	Th	Bernoulli's Eqn, viscosity, Deformation (skip 9.10-9.11, 10.3-10.4)	9.8-9.9, 10.1-10.4
11	Nov 5	T	Simple Harmonic Motion, including Pendulum (skip 10.9-10.10)	10.5-10.8
	Nov 7	Th	Waves, Superposition and examples	11.1-11.8
12*	Nov 12	T	Sound Waves, Standing Waves	11.9-12.5
	Nov 14	Th	Doppler Effect, Temperature, Thermal Expansion	12.6-12.9, 13.1-13.3
13	Nov 19	T	**Review Exam 3 (Ch. 9-12)**	9-12
	Nov 21	Th	**EXAM 3 (Ch. 9-12)**	9-12
14	Nov 26	T	Gases, Absolute Temperature, Ideal Gas Law, Kinetic theory, Internal Energy, Heat, Specific Heat, (skip 13.7-13.8)	13.4-13.6, 14.1-14.4
	Nov 28	Th	Thanksgiving Holiday	
15*	Dec 3	T	Phase Transitions, Thermal Conduction , Convection and Radiation	14.5-14.8
	Dec 5	Th	Thermodynamics, The 1st Law, Ideal Gas, Heat engines Carnot cycle, Second law of thermodynamics, Entropy (skip 15.6-15.7) Review for Final	15.1-15.9

Tuesday December 17: cumulative common Final Exam (1:20 – 3:50 PM) in 100 General Lectures.