Course Syllabus for Physics 1331 (General Physics I)
Fall 2015

Instructor: Dr. Bob Spiro
e-mail: spiro@rice.edu  Office telephone number: (713) 348-3591

Prerequisites: MATH 1331 or equivalent or permission of instructor.

Office Hours: TBD (presently by appointment only, & by email or telephone)

Texts: College Physics, available from https://openstaxcollege.org/books

Course Overview
Non-calculus based introduction to physics for pre-medical and science students.

Course Objectives
Students will learn kinematics, mechanics, and thermodynamics. Students will attain both conceptual understanding and problem solving skills using non-calculus based mathematical tools.

Blackboard
The Blackboard class management system will not be used in this class.

Grading: Your final semester grade comprises four components.

Scheduled In-Class Tests (45%): There will be three scheduled in-class tests during the semester. Each test will be cumulative (i.e., covering all the material studied up to that point during the semester, but weighted toward the material covered since the previous test.) Your grade $G$ on each test will consist of two components $[G = R + C]$: (1) a raw score $R$, based on how well you answer the test questions initially [0 to 100 points], and (2) a test correction score $C$ [0 to $(100-R)/2$ points], based on how well you correct and fully explain the items you initially answered wrong on the test. After you receive your test results, test corrections will be due at the beginning of the next class. Each of the scheduled in-class tests represent 15% of your raw course grade. In addition, you can replace your lowest test Grade $G$ with your final exam grade, if higher.

Final Exam (25%): (cumulative and comprehensive)

Homework (15%): Homework will be assigned on a regular basis.

Pop Quizzes (15%): There will be at least 10 unannounced pop quizzes spread throughout the semester. Each of these quizzes will be worth two (2) points. Generally pop quiz questions will be multiple choice and conceptual. Calculators will not be needed or allowed. Pop quizzes will be designed to test concepts introduced in previous lectures and/or preparatory reading for the day’s lecture. The pop quiz component of your grade will be the total number of points you receive on the pop quizzes, up to a maximum of 15. Pop quiz points in excess of 15 will be treated as extra credit points, subject to the extra credit rules described below. Missed pop
quizzes cannot be made up for any reason except for participation in official University activities, e.g., athletic or other University-sponsored reasons.

Extra Credit: In addition to excess pop quiz points, you may have occasional opportunities to earn additional extra credit during the course of the semester. Rules for using extra credit are discussed below.

Calculation of Final Course Grade: Your raw course grade will be weighted as follows:

Test 1 15%  Test 2 15%  Test 3 15%  Final Exam 25%  Pop Quizzes 15%  HW 15%

Raw Grade = Test 1 + Test 2 + Test 3 + Pop quizzes + HW + Final Exam
Final Course Grade = Raw Grade + Extra Credit Points

Note: The number of Extra Credit Points that you can apply to raise your Final Grade depends on your Raw Grade. The lower your Raw Grade, the more Extra Credit Points you can use.
The Extra Credit Limit is equal to (100 – Raw Grade)/3 up to a maximum of 15.
For example,
If your Raw Grade = 90 you can use up to (100 – 90)/3 = 3.33 extra credit points.
If your Raw Grade = 80, you can use up to (100-80)/3 = 6.67 extra credit points.
If your Raw Grade = 70, you can use up to (100 – 70)/3 = 10 extra credit points.
If your Raw Grade = 55, you can use up to (100-55)/3= 15 extra credit points. If your Raw Grade is below 55, you can use, at most, only 15 extra credit points to raise your final grade.

A final course grade of 90 guarantees a letter grade of A- (or better) for the course.
A final course grade of 80 guarantees a letter grade of B- (or better) for the course.
A final course grade of 70 guarantees a letter grade of C- (or better) for the course.
A final course grade of 60 guarantees a letter grade of D- (or better) for the course

NOTE: It is strongly recommended that students who earn a “C” or lower on any assignment or who perceive themselves to be struggling schedule an office visit with the instructor. In addition, consider visiting the Tutorial Services Center and/or ust.askonline.net for additional assistance.

Comments on Homework
Homework will be assigned for each chapter, and is due as listed in the syllabus. The purpose of the homework is to reinforce concepts introduced in class and provide an opportunity for the student to demonstrate their command of the concepts. In working and presenting problems I encourage the student to make use of the following suggestions:
• Clearly identify the symbols you will be using to represent the variables of the problem.
• Remember that an “=“ sign represents a relationship, namely that what is on one side of the = is equivalent to what is on the other side.
• Try to make clear the logic you are using to advance from one step of the solution to the next. Remember that your HW solution is the way for you to show that you understand the material. If you clearly present your solution and make an error along the way, you can still receive partial credit for all of the steps that it can be determined that you performed correctly.
• For computational ease, work in terms of symbols until the final steps of your solution. Remember, each time you perform and write down an intermediate calculation you run the risk of misreading what you wrote down and entering an incorrect value into your calculator. I generally find that I do better using spreadsheet software to do calculations, since I don’t have to keep re-entering all the values for the entire calculation if I screw up along the way, but only the faulty value.
• Watch your units! It is usually best to make sure that all inputs and outputs are expressed in SI units.
• The final solution step should always be a reality check. Does your answer make sense? If it doesn’t, you probably did something wrong. A ridiculously wrong solution shows less understanding than a merely wrong solution.

**Attendance Policy**

University policy requires that class attendance records be kept. If you miss a class, for whatever reason, it is **your responsibility** to determine what, if any, work you have missed.

**Make-Up Tests**

If you miss one of the three scheduled tests for a valid reason, you need to get in touch with me as soon as possible to schedule a make-up test. Valid reasons include sickness, scheduling conflicts with work obligations, and family emergencies. If you know you are going to miss a scheduled test, it is your responsibility to notify the instructor as soon as possible so that alternate arrangements can be made. Missed pop quizzes cannot be made up for any reason except mandatory participation in official University activities, e.g., athletic or other University-sponsored reasons.

**Accessibility and Accommodations**

If you have a documented disability that will impact your work in this class, please contact me to discuss your needs. Additionally, you will need to register with the Counseling and Disability Services Office in Crooker Center. This office can be reached at (713) 525-6953 or 3162.

**Academic Dishonesty Policy**

All students are subject to the university’s Policy on Academic Dishonesty and the UST Student Handbook. I expect any work that you turn in for credit in this class to be your own work, in your own words. I expect you to give proper credit, by citation, to any print or online resources that you use to fulfill class requirements. **Exception** – information from class notes and the class textbook do not need to be referenced for tests, pop quizzes, and homework assignments.
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<thead>
<tr>
<th>Week of:</th>
<th>Monday</th>
<th>Wednesday</th>
<th>Friday</th>
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<tbody>
<tr>
<td>8/24</td>
<td>Introduction, Ch. 1</td>
<td>Ch. 1, Measurement &amp; Estimating</td>
<td>Ch. 2, Kinematics</td>
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<td>8/31</td>
<td>Ch. 2, Kinematics (Ch. 1 HW due)</td>
<td>Ch. 2, Kinematics</td>
<td>Ch. 3, 2-D Kinematics</td>
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<td>9/7</td>
<td>LABOR DAY HOLIDAY</td>
<td>Ch. 3, 2-D Kinematics (Ch. 2 HW due)</td>
<td>Ch. 3, 2-D Kinematics</td>
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<td>9/14</td>
<td>Ch. 4, Dynamics</td>
<td>Ch. 4, Dynamics (Ch. 3 HW due)</td>
<td>Review Ch. 1, 2, 3</td>
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<td>9/21</td>
<td>Test #1 (Ch. 1 – 3)</td>
<td>Ch. 4, Dynamics</td>
<td>Ch. 5, Friction, Drag, etc.</td>
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<td>9/28</td>
<td>Ch. 7, Work &amp; Energy</td>
<td>Ch. 7, Work &amp; Energy (Ch. 4/5 HW due)</td>
<td>Ch. 7, Work &amp; Energy</td>
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<td>10/5</td>
<td>Ch. 8, Momentum &amp; Collisions</td>
<td>Ch. 8, Momentum &amp; Collisions (Ch. 7 HW due)</td>
<td>Ch. 8, Momentum &amp; Collisions</td>
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<td>10/12</td>
<td>FALL BREAK</td>
<td>Ch. 6, Circular Motion &amp; Gravity (Ch. 8 HW due)</td>
<td>Review (Ch. 4, 5, 7, 8)</td>
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<td>10/19</td>
<td>Test (Ch. 4, 5, 7, 8)</td>
<td>Ch. 6, Circular Motion &amp; Gravity</td>
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<td>10/26</td>
<td>Ch. 9, Statics &amp; Torque</td>
<td>Ch. 9, Statics &amp; Torque/Ch. 10, Rotation &amp; Angular Momentum (Ch. 6 HW due)</td>
<td>Ch. 10, Rotation &amp; Angular Momentum</td>
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<td>11/02</td>
<td>Ch. 11, Fluid Statics</td>
<td>Ch. 11, Fluid Statics/Ch. 12, Fluid Dynamics (Ch. 9, 10 HW due)</td>
<td>Ch. 12, Fluid Dynamics</td>
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<td>11/09</td>
<td>Ch. 13, Kinetic Theory &amp; Gas Laws (Ch. 11, 12 HW due)</td>
<td>Review (Ch. 6, 9, 10, 11, 12)</td>
<td>Test #3 Ch. 6, 9, 10, 11, 12</td>
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<td>11/16</td>
<td>Ch. 13, Kinetic Theory &amp; Gas Laws</td>
<td>Ch. 14, Heat Transfer/Ch. 15, Thermodynamics</td>
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<td>11/23</td>
<td>Ch. 16, Waves</td>
<td>Thanksgiving Break</td>
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<td>11/30</td>
<td>Ch. 16, Waves</td>
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<td>Ch. 17, Sound</td>
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<td>Assignment</td>
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<td>12/07</td>
<td>Final Review</td>
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<td>(Ch. 16, 17 HW due)</td>
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