PHYS 111 Syllabus summer 2015
General Physics I Mechanics, Waves, Thermodynamics
Instructor William Caudy  wcaudy@sfsu.edu
Office SCI 386. See http://physics.sfsu.edu/~wcaudy/ for office hours.
Lecture MTuWTh June 22 - Aug 13 2:00-3:10PM in TH 327,
Final Exam Th Aug 13 2:00-2:45PM in TH 327.

A course calendar with links to all lessons and homework assignments is posted to
PHYS 111 Course Website: physics.sfsu.edu/~wcaudy/phys111summer2015.htm.
Become familiar with this website and check often for notes, in class questions, and updates.

MATH 199 is a Prerequisites for PHYS 111. Students who have not completed equivalent courses with
a grade of C or higher in each will be dropped from PHYS 111. Transfer students must email transcripts.
Students will need all math classes through MATH 199 including algebra, geometry, and trigonometry.

Lab PHYS 112 is a separate 1 unit class taught by a different instructor who assigns you a separate
grade. Your work for lab does not affect your grade in lecture, and vice versa, but enrollment in both is
required (with possible exceptions for transfer credits and returning 111 students.) You cannot enroll in
lab until you are enrolled in lecture. Students not enrolled in lecture will be dropped from all lab sections
during the first week of class to make space for those enrolled in lecture.

Exams: There are four 45 minutes long exams including the final, with eight multiple choice questions
and two written response questions requiring calculation. Exams are non-cumulative and open note.

Textbook (optional): Readings in the Course Outline (below) are taken from Walker, J.S. Physics, 4th
Edition, available in the SFSU bookstore. Older editions may be available online and are equally
acceptable, as is any equivalent physics textbook or online reference. See website for recommendations.

Homework assignments will be posted to the course website in pdf format.

Grades are posted to the course website by the last four digits of your SFSU ID#. Our grade scale is:

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<th>F</th>
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<th>C</th>
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<td>%</td>
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<td>75-79</td>
<td>80-84</td>
<td>85-89</td>
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Your total percentage is determined by 4 Exam scores and Homework scores. Homework is worth 20%
if it helps your grade, 0% otherwise. Typically A and B students have very high Homework scores. Four
Exams (including the Final) count for 20% or 25% each, depending on your Homework percentage.

Last day to add/drop without W: July 6.

Last day to Withdrawal: Aug 4. 111 is an impacted course! Withdrawals are only permitted in
The Disability Programs and Resource Center (DPRC): Students with disabilities who need reasonable accommodations are encouraged to contact the instructor. The Disability Programs and Resource Center (DPRC) is available to facilitate the reasonable accommodations process. DPRC is located in the Student Service Building and can be reached by telephone (voice/TTY 415-338-2472), by email dprc@sfsu.edu, or visit their website at http://www.sfsu.edu/~dprc

Course objectives and learning outcomes:
1. Study Newton's laws of motion and learn how to apply them to simple mechanical systems.
2. Learn the physical concept of energy and how it relates to different physical systems.
3. Study the phenomena involved in gravitation, wave motion and oscillations.
4. Study the concepts and phenomena in the fields of heat, thermodynamics and thermal physics.
5. Learn how to translate realistic physical problems into the equations which describe them; solve these equations for the variables describing the problem; and interpret the results to describe the resulting behavior of the realistic physical system.
6. Learn to carry out numerical evaluation of algebraic results rapidly and accurately, using appropriate units for physical quantities.
7. Describe simple physical systems by graphing system variables, and interpret graphs of system variables.
8. Relate the equations of physics to intuitive concepts.

Student Learning Outcomes for Lower Division Physical Science (B1):
1. Explain the steps in the scientific method of inquiry, which involves gathering observable, empirical and measurable evidence subject to specific principles of reasoning, and recognizing that reproducible observation of a result is necessary for a theory to be accepted as valid by the scientific community;
2. Analyze specific examples of how the scientific method has been used in the past to collect data through observation and experimentation, and to formulate, test and reformulate hypotheses about the physical universe; evaluate scientific information from a variety of sources and use that information to articulate well-reasoned responses to scientific concerns;
3. Evaluate scientific information from a variety of sources and use that information to articulate well-reasoned responses to scientific concerns;
4. Recognize the utility of alternative scientific hypotheses in the development of scientific theories, research and applications and understand how scientific evidence is used to develop hypotheses and theories;
5. Describe ethical dilemmas arising out of contemporary scientific research and applications, which may include those related to social justice, and may have implications for local and/or global communities;
6. Use scientific theories to explain phenomena observed in laboratory or field settings; and
7. Discuss the relevance of major scientific theories and research to their lives.