PHYS 111 Section 2

Meeting times: T, R 2:10-3:25 pm, HSS 137
Instructor: Elaine Tennant
Email: et1083@sfsu.edu
Office: HH 126
Office hours: T 12:20-2:10; Th 9:50-11:10

Materials:
1. Physics 4th Edition, by James Walker
2. You will also need to purchase access to Modified MasteringPhysics, the online homework system we will be using this semester. To login, you will need a reliable internet connection:
    a. Go to www.pearsonmylabandmastering.com
    b. Under Register, click the "Students" button. If you purchased an access card bundled with your textbook, enter the code in the card. If you bought a used book or a book that did not come with an access card, you can also purchase access directly from the registration page.
    c. To join the course, you will need to enter your SFSU Student ID number and the course ID: **tennant55757**

Prerequisites: 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.

Co-requisites: 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.

Grades:
    3 tests: 20% each for a total of 60%
    Online HW: 20%
    Final Exam: 20%

Grade scale:
100%-90%: A
80%-89%: B
70%-79%: C
60%-69%: D
less than 60%: F

Dropping and Withdrawal

If you drop or withdraw from the lab, you will have to drop the lecture PHYS 111 at the same time.

- Aug 25– Sep 4: you are free to drop Phys 112 and Phys 111 during this period on your own.
- Sep 5– Nov 20: during this period students can only withdraw with “W” using Withdrawal Procedure
- Nov 21 – Dec 11 withdraws can be approved only with "serious and compelling reasons."
- See the Physics and Astronomy Department policy on withdrawal at http://physics.sfsu.edu under *Department Policies.*

Plagiarism: Representing work done by others as your own work is expressly forbidden. See the Physics and Astronomy Dept. Plagiarism policy on http://www.physics.sfsu.edu/policy/plagiarism.pdf

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.

Schedule:

	Day	**Chapter**	**Content**
1	T 8/25	Syllabus, Ch. 1	Units, dimensional analysis, significant figures
2	Th 8/27	Start Ch. 2	One-dimensional kinematics

3	T 9/1	Finish Ch. 2	One-dimensional kinematics
4	Th 9/3	Start Ch. 3	Vectors
5	T 9/8	Finish Ch. 3, Ch. 4	Vectors, two-dimensional kinematics
6	Th 9/10	Start Ch. 5	Newton's laws of motion
7	T 9/15	Finish Ch. 5, Start Ch. 6	Newton's laws, applications of Newton's laws
8	Th 9/17		**Exam 1: Chapters 1-5**
9	T 9/22	Finish Ch. 6	Applications of Newton's laws
10	Th 9/24	Ch. 7	Work and kinetic energy
11	T 9/29	Start Ch. 8	Potential energy and conservation of energy

12	Th 10/1	Finish Ch. 8	Potential energy and conservation of energy
13	T 10/6	Start Ch. 9	Linear momentum and collisions
14	Th 10/8	Finish Ch. 9	Linear momentum and collisions
15	T 10/13		**Exam 2: Chapters 6-9**
16	Th 10/15	Start Ch. 10	Rotational kinematics and energy

17	T 10/20	Finish Ch. 10	Rotational kinematics and energy
18	Th 10/23	Start Ch. 11	Rotational dynamics and static equilibrium
19	T 10/27	Finish Ch. 11	Rotational dynamics and static equilibrium
20	Th 10/29	Ch. 12	Gravity
21	T 11/3	Start Ch. 13	Oscillations
22	Th 11/5	Finish Ch. 13	Oscillations
23	T 11/10	Start Ch. 14	Waves and sound
24	Th 11/12	Finish Ch. 14	Waves and sound
25	T 11/17	Ch. 15	Fluids
26	**Th 11/19**		**Exam 3: Chapters 10-15**
	T 11/24	Thanksgiving Holiday	
	Th 11/26	Thanksgiving Holiday	
27	T 12/1	Ch. 16	Temperature and heat
28	Th 12/3	Ch. 17	Phase and phase changes
29	T 12/8	Ch. 18	The laws of thermodynamics
30	Th 12/10	Ch. 18	The laws of thermodynamics
Final Exam	Th 12/17	1:30-4:00 pm	**EVERYTHING**