GENERAL COURSE INFORMATION
Name and Department: Dr. Harry D. Downing, Professor/Regents Scholar, Department of Physics, Engineering and Astronomy
Instructor Homepage: http://faculty.sfasu.edu/downingharry/downing.htm
Office: Room 207M Cole STEM Building
Student/Office Hours: M(2-3), T(9:30-10:30, 12:30-1:30), W(10-11), R(10:30-11:30), F(10-11) or by appt.
Phone, Fax, E-mail: 468-2290 or 468-3001, Fax: 468-4448, hdowning@sfasu.edu
Class Meeting Times and Place: 2:00-3:50 TR, Room 201 Cole STEM Bldg.
Physics Homepage: http://www.sfasu.edu/academics/colleges/sciences-math/physics-engineering-astronomy/academics/physics
Course Homepage: http://faculty.sfasu.edu/downingharry/108HomePage.htm
Text and Materials: Schaum’s Outlines, College Physics, 12th Edition

COURSE DESCRIPTION
3 semester hours, 2 hours lecture and 2 hours laboratory per week. Introductory course on engineering/physics analysis with practice in analyzing and solving problems in physics and engineering. Includes use of computational devices and methods. Co-requisite(s): PHY 108L for the lecture and PHY 108 for the lab.

PROGRAM LEARNING OUTCOMES
There are no specific program learning outcomes for the physics program addressed in this course.

GENERAL EDUCATION CORE CURRICULUM OBJECTIVES/OUTCOMES
This course is not included in the general education core curriculum.

STUDENT LEARNING OUTCOMES
By the end of the course, successful students will be able to:
- Demonstrate the ability to analyze and solve introductory physics and engineering problems.
- Demonstrate the ability to communicate analysis of problems in a professional manner.
- Exhibit the ability to work in teams/groups effectively.

COURSE OBJECTIVES
The course objectives are to develop basic introductory level problem solving skills in prospective engineers and physicists and to have students become familiar with Newton’s laws and associated conservation principles. A cooperative problem solving approach is taken where students develop time management skills and teaming skills. This course along with analytic geometry will prepare the student for the rigors of the PHY 240 series. The calendar (at the end of this syllabus) outlines the tentative course of study.

COURSE REQUIREMENTS/GRADING POLICY
HOMEWORK: Your homework problems will be of professional quality and professionally presented. They will be complete in themselves to the extent that any competent person can determine the following: (a) the problem you are solving, (b) your method of solution, and (c) your answer. To assure these things you must adhere to the following rules.

- Use 8 ½ x 11 in. Engineer’s Computation Pad.
- Write in pencil on one side of the page only.
Each problem must be started on a new page. Staple homework in the upper left corner and leave flat (not folded) before submitting for grading.

Include the following when working a problem: problem number and statement (word for word), sketch, definition of variables used in the solution, units, vector arrows, numbering of equations when needed for clarity, organized steps in the solution, and identification of the answers with boxes. Required graphs should be attached to the back of the problem.

Several problems will be selected for grading from each set. The homework grade will count as 100 points toward your final grade.

**PRESENTATIONS:** Conferences, presentations, attendance, and performance in class will count as 50 points toward your final grade.

**PORTFOLIO:** A portfolio of all the problems presented in class will be required. Each section of your portfolio will be turned in on the day of the exam which will cover that section. Your problems must be presented in standard format on engineering paper. Your portfolio will count 50 points toward your final grade.

**EXAMS:** There will be six timed exams this semester. Each exam will consist of three or four problems similar to those worked for homework and those worked in class and will be worth a maximum of 100 points toward your final grade. Students will have one week after an exam is returned to discuss any possible error in the grading. Make-up exams will be available to anyone missing an exam with a valid excuse. (Make-up exams might be partially oral.)

**FINAL GRADE:** The maximum total points possible will be 800 and a final grade will be assigned according to the following:

<table>
<thead>
<tr>
<th>Points</th>
<th>Grade</th>
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<tbody>
<tr>
<td>720-800</td>
<td>A</td>
</tr>
<tr>
<td>640-719</td>
<td>B</td>
</tr>
<tr>
<td>560-639</td>
<td>C</td>
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<tr>
<td>480-559</td>
<td>D</td>
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<tr>
<td>000-479</td>
<td>F</td>
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**HINTS FOR SUCCESS IN PHY 108**

You will benefit much more from lecture if you review the outside material assigned by the instructor before coming to class. Attend class and take notes. Don’t try to copy everything I say, write on the board, or show in slides or video. PowerPoint lectures will be made available to you. If you have problems trying to comprehend this material, please do not hesitate to come and visit with me. I have truly enjoyed working with students, and often I have found that I am most effective with them when they have brought their questions and problems to me in my office.

The most important things you can do is read the assigned text, attend class and be attentive, and do the homework!!!

**ATTENDANCE POLICY**

Absences from class must be made up through extra homework assigned from an introductory calculus-based PHY text. The first absence incurs one extra homework problem. Any further absences will incur three extra homework problems for each absence occurrence. Each of these extra homework problems must be submitted until each is completely correct. Failure to complete all extra homework by the end of the semester will result in a one letter grade reduction in your final grade in this course. Every four tardies (five minutes or more late) will count as a class absence. Three unexcused absences from lecture and/or lab will result in a grade reduction of one letter grade. Five will result in an F for the course. Failing to confirm the watching of a video lecture will count as an absence. To get presentation points you must be present in class when the problem is presented to the rest of the class. Students should become familiar with the policies on cheating and plagiarism.
CLASSROOM POLICIES
For the benefit of your fellow students and your instructor, you are expected to practice common courtesy with regard to all course interactions. For example:

- Be considerate toward your classmates and instructor and **arrive to class on time**.
- Do not leave class early and do not create distractions in preparation to leave before class is **dismissed**.
- Avoid classroom disturbances. Be attentive in class, stay awake, and do not read newspapers, etc. While in class your readings should be confined to the course text and notes.
- If you are late to class or must leave early, please inform your instructor in advance and enter or leave quietly.
- **Cell phones, pagers and other communication devices must be turned off during class.** Confiscation may result for non-compliance or you may be asked to leave the class and be counted absent.
- Be kind and respectful to your fellow students and your teachers.

EMAIL COMMUNICATIONS
Make sure you always use your SFA e-mail account for network correspondence. Messages from your instructor will be sent to your SFA email account periodically. You may forward e-mail from your SFA e-mail address to another address of your choice. To do this, use this link: [http://www.sfasu.edu/mysfa/o365/forwarding-email/](http://www.sfasu.edu/mysfa/o365/forwarding-email/)

Academic Integrity (A-9.1)
Academic integrity is a responsibility of all university faculty and students. Faculty members promote academic integrity in multiple ways including instruction on the components of academic honesty, as well as abiding by university policy on penalties for cheating and plagiarism.

Collaboration on examinations, in class assignments, and homework assignments is forbidden except where specifically specified as "Team" activities. For example, homework assignments can be worked on as a team but must be completed separately. In general, one team may not collaborate with another team on "Team" activities. Students violating this policy will be subject to procedures described in the Stephen F. Austin State University Policies and Procedures Manual.

Definition of Academic Dishonesty
Academic dishonesty includes both cheating and plagiarism. Cheating includes but is not limited to (1) using or attempting to use unauthorized materials to aid in achieving a better grade on a component of a class; (2) the falsification or invention of any information, including citations, on an assigned exercise; and/or (3) helping or attempting to help another in an act of cheating or plagiarism. Plagiarism is presenting the words or ideas of another person as if they were your own. Examples of plagiarism are (1) submitting an assignment as if it were one's own work when, in fact, it is at least partly the work of another; (2) submitting a work that has been purchased or otherwise obtained from an Internet source or another source; and (3) incorporating the words or ideas of an author into one's paper without giving the author due credit.

Please read the complete policy at [http://www.sfasu.edu/policies/4.1-student-academic-dishonesty.pdf](http://www.sfasu.edu/policies/4.1-student-academic-dishonesty.pdf)

Withheld Grades Semester Grades Policy (5.5 (Old policy A-54))
Ordinarily, at the discretion of the instructor of record and with the approval of the academic chair/director, a grade of WH will be assigned only if the student cannot complete the course work because of unavoidable circumstances. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F. If students register for the same course in future terms the WH will automatically become an F and will be counted as a repeated course for the purpose of computing the grade point average.
Students with Disabilities
To obtain disability related accommodations, alternate formats and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, and Room 325, 468-3004 / 468-1004 (TDD) as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodation and/or auxiliary aids to be provided. Failure to request services in a timely manner may delay your accommodations. For additional information, go to http://www.sfasu.edu/disabilityservices/.

Student Code of Conduct: Policy 10.4
Classroom behavior should not interfere with the instructor’s ability to conduct the class or the ability of other students to learn from the instructional program. Unacceptable or disruptive behavior will not be tolerated. Students who disrupt the learning environment may be asked to leave class and may be subject to judicial, academic or other penalties. This policy applies to all instructional forums, including electronic, classroom, labs, discussion groups, field trips, etc. The instructor shall have full discretion over what behavior is appropriate/inappropriate in the classroom. Students who do not attend class regularly or who perform poorly on class projects/exams may be referred to the iCare: Early Alert Program at SFA. Information regarding the iCare program is found at http://www.sfasu.edu/judicial/earlyalert.asp or call the office at 936-468-2703.

STUDENT COUNSELING CENTER
Rusk Building 3rd Floor, Phone: (936) 468 -2401; Email: counseling@sfasu.edu
The Student Counseling Center is available free of charge to students and is staffed with professional therapists to meet a variety of needs. All interactions with the Student Counseling Center are guaranteed confidential. Licensed Counselors are available from 8:00a.m.-5:00p.m. Monday -Friday. The department is closed on certain holidays, Spring Break and Winter Break when the university is closed. If you are in need of assistance after hours or on the weekend please call: University Police: (936)468-2608 or MHMR Crisis Line: (800)392 -8343. If the situation is life threatening please dial 911.

This class meets 2 hrs/wk for 15 weeks, and it also meets for a 2.5-hour final examination. This is a problem oriented class and lab with homework problems. The lecture and lab combine for 3 hours and 20 minutes of contact time each week and the work outside of classes each week for the combined courses averages much more than 6 hours and 40 minutes in working homework problems, studying notes and PowerPoint shows to understand the theories used in lecture and in homework problems and exams, creating a portfolio of class problems, and studying for exams.
## Topics

### TEST 1 - Chapter 1
- **Kinematics**
  - Jan. 13
  - Jan. 14
  - Jan. 15
  - Jan. 16
  - Jan. 17

- **Algebra**
  - Dept Meeting
  - CoSM Meeting
  - Intro & Motion

- **Trigonometry**
  - Jan. 20
  - Jan. 21
  - Jan. 22
  - Jan. 23
  - Jan. 24

- **Vectors**
  - MLK Day
  - Kinematics
  - Add Deadline
  - Kinematics/Probs

### TEST 2 - Chapter 2
- **Acceleration**
  - Feb. 3
  - Feb. 4
  - Feb. 5
  - Feb. 6
  - Feb. 7

- **Algebra, Trigonometry, Vectors**
  - Feb. 10
  - Feb. 11
  - Feb. 12
  - Feb. 13
  - Feb. 14

### TEST 3 - Chapters 3 and 4
- **Newton’s First Law of Motion**
  - Feb. 17
  - Feb. 18
  - Feb. 19
  - Feb. 20
  - Feb. 21

- **Newton’s Second Law of Motion**
  - Feb. 24
  - Feb. 25
  - Feb. 26
  - Feb. 27
  - Feb. 28

- **Free-body Diagrams**
  - Mar. 2
  - Mar. 3
  - Mar. 4
  - Mar. 5
  - Mar. 6

- **Newton’s Third Law of Motion**
  - Mid Term
  - Ch. 29
  - Concurrent Forces

### TEST 4 - Chapter 6
- **Spring Break**
  - Mar. 9
  - Mar. 10
  - Mar. 11
  - Mar. 12
  - Mar. 13

- **Work**
  - Mar. 16
  - Mar. 17
  - Mar. 18
  - Mar. 19
  - Mar. 20

- **Energy**
  - T3 /Work-Energy
  - WP/WF Deadline
  - Work-Energy

### TEST 5 - Chapter 8
- **Impulse**
  - Apr. 6
  - Apr. 7
  - Apr. 8
  - Apr. 9
  - Apr. 10

- **Momentum**
  - Apr. 13
  - Apr. 14
  - Apr. 15
  - Apr. 16
  - Apr. 17

- **Conservation of Momentum**
  - Apr. 20
  - Apr. 21
  - Apr. 22
  - Apr. 23
  - Apr. 24

### FINAL EXAM - Chapter 9
- **Angular Velocity**
  - Apr. 27
  - Apr. 28
  - Apr. 29
  - Apr. 30
  - May. 1

- **Angular Momentum**
  - May. 4
  - May. 5
  - May. 6
  - May. 7
  - May. 8

- **Conservation of Angular Momentum**
  - Final Exam
  - 1:30-4:00

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**PHYSICS 108.001**  
Tentative Course Outline and Calendar  
Spring 2020