Mechanics and Heat Lab  
PHY 1101 sections 21, 22 & 23

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Office Hours: MW 9:10-10:40 & 1:30-2:30 or by appointment.  
Class meeting time and place: All sections meet in STEM 301  
Section 021 M 1:00-3:50 pm, Section 022, M 4-6:50 pm, Section 023 T 12:30-3:20 pm

Course Description:  
College Physics I Laboratory – 1 semester hour, 3 hours lab per week. Computation of lecture and laboratory grades into one grade; same grade recorded for both lecture and laboratory. Co-requisite: PHYS 1301.

Program Learning Outcomes:  
This is a general education core curriculum course and no specific program learning outcomes for this major are addressed in this course.

Lab Exercises  
Labs begin the week of September 4th.

<table>
<thead>
<tr>
<th>Week</th>
<th>Laboratory</th>
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<tbody>
<tr>
<td>1</td>
<td>Introduction to Graphing and PASCO Capstone</td>
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<tr>
<td>2</td>
<td>Motion in a Straight Line</td>
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<td>3</td>
<td>Motion Down an Inclined Plane</td>
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<td>4</td>
<td>Projectile Motion</td>
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<td>5</td>
<td>Addition of Vectors</td>
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<td>6</td>
<td>Newton’s 2nd Law</td>
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<tr>
<td>7</td>
<td>Conservation of Energy</td>
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<tr>
<td>8</td>
<td>Conservation of Momentum</td>
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<tr>
<td>9</td>
<td>Centripetal Force</td>
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<tr>
<td>10</td>
<td>Archimede’s Principle-</td>
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<tr>
<td>11</td>
<td>Phase Change in Water:</td>
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<tr>
<td>12</td>
<td>Linear Thermal Expansion</td>
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</tbody>
</table>

Dead Week Lab Final Exam

Grading:  
Lab Reports 50%  
Lab Notebook 25%  
Lab Final 25%

The laboratory score is combined with the lecture grade and the same grade assigned for lecture and lab grade. Students are required to bring their textbook, lab manual, and lab notebook to every laboratory session. Much of the lab experiment background will be taken from the textbook by the student.
Lab Notebook:
Each student is required to bring his/her own lab notebook to every lab session. The purpose of the lab notebook is for recording notes about the experiment, data collected during the experiment, drawings, formulas, or anything that is needed to help the student write their lab report that is due the following week. A small loose-leaf binder is preferred. Each experiment should have its own sheet of paper including experiment title and date. Lab notebooks will be turned in for a grade at the end of the semester as part of your overall lab grade. Only lab notebooks may be used by the student on the lab final, so take good notes.

Lab Final
The lab final is a comprehensive exam covering all the lab experiments. If you miss a lab, you are responsible for finding out any information needed to answer questions on the lab final before the day of the final.

Attendance Policy
Attendance will be taken each lab period. Make sure to come to class on time because quizzes may be given during the first five minutes of the lab period. All unexcused absences will result in a zero for the lab report and quiz for that day. Excused absences must be approved by the instructor of record within one week of the missed lab.

Email Communication:
All official course communication will be made using your SFA email account. You are accountable for all such communication.

Lab reports should include the following sections:
Title page: centered; name, course name and section, lab title, and date
Purpose:
Procedure: general steps to lab (include any details that are not obvious) so that another could repeat your lab
Formulas and Calculations: sample derivation if needed
Data Tables: including calculations performed on data
Graphs: graphs should be at least a ½ a page in size, include titles, axis titles, units, uncertainty if appropriate and line of best fit, equation of fit with R squared value
Written questions with answers:
Conclusion:

Reports, including graphs and tables, must be typed up in a professional manner. No hand-written reports with hand written graphs or equations are allowed.

Student Learning Outcomes:
By the end of the course, successful students will be able to:
1. The student will demonstrate proficiency in the basic and applied fields of physics.
2. The student will apply physical principles to novel situations, both in the classroom and in research settings.
3. The student will develop good experimental technique, including proper setup and care of equipment, conducting experiments and analyzing results in order to observe physical phenomena, assess experimental uncertainty, and make meaningful comparisons between experiment and theory.
4. The student will develop effective written and oral communication skills, especially the ability to transmit complex technical information in a clear and concise manner.
5. The student will appreciate the importance and practice of ethics in science.

Text and Materials:
PHYS 1101 & 2125 Lab Manual (available at the local Barnes & Noble bookstore)

Course Requirements:
✦ Students are required to study chapters 2-15 from the course text.
✦ Students will complete 12 laboratory exercises in the co-requisite lab and take a final exam over them at the end of the semester. Labs will begin the week of Aug. 29th.
✦ Homework assignments (math oriented problems that involve learned physics principles) will be given to illustrate the principles covered in lecture. They are generally due one week after the assignment is given. Actual due dates will be provided with the assignment.
✦ There will be four major tests including the final. All exams will be night exams, except for the final exam. Students should become familiar with the policies on cheating and plagiarism.

General Education Core Curriculum:
The Texas Higher Education Coordinating Board has identified six core learning objectives: Critical Thinking Skills, Communication Skills, Empirical and Quantitative Skills, Teamwork, Personal Responsibility, and Social Responsibility. SFA is committed to the improvement of its general education core curriculum by regular assessment of student performance on these six objectives.

By enrolling in Physics 1101 you are also enrolling in a Core Curriculum Course that fulfills the communications skills and teamwork requirements. The chart below indicates the core objectives that are required to be taught in this course per the Texas Higher Education Coordinating Board (THECB).

Core Curriculum Objective Table

<table>
<thead>
<tr>
<th>Core Objective</th>
<th>Definition</th>
<th>How the Core Objective Will be Addressed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication Skills</td>
<td>To include effective development, interpretation and expression of ideas through written, oral, and visual communication.</td>
<td>Laboratory reports</td>
</tr>
<tr>
<td>Teamwork</td>
<td>To include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal.</td>
<td>Laboratory exercises are done in groups and will be addressed in the labs</td>
</tr>
</tbody>
</table>

This course meets educator preparation standards for one or more certification programs; a complete listing of all the educator preparation standards this course meets can be found at: https://sfasu.edu/docs/jacksteach/jacksteach-standards-alignment-chart.xlsx
Academic Integrity
The new student code of conduct discusses prohibited academic conduct in Article IV and Investigations and conduct process – academic conduct in Article VI found here: https://www.sfasu.edu/docs/policies/10.4.pdf

Article IV – Prohibited Academic Conduct
Any Student who commits an act of academic dishonesty is subject to discipline. Academic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person without giving sufficient credit, taking an examination for another person, or any act designed to give unfair advantage to a Student or the attempt to commit such acts. a. Cheating is the following or attempt to do the following: i. Copying from the test paper (or other assignment) of another Student, engaging in written, oral, or any other means of communication with another Student during a test, or giving aid to or seeking aid from another person during a test or on another assignment where doing so is prohibited by the Faculty member; ii. Possession and/or use during a test of materials which are not authorized by the person giving the test, such as class notes, calculators, electronic devices, books, or specifically designed “crib notes”; iii. Using, obtaining, or attempting to obtain by any means the whole or any part of a non-administered test, test key, homework solution, or computer program, or using a test that has been administered in prior classes or semesters, but which will be used again either in whole or in part, without permission of the Faculty member; or accessing a test bank without Faculty permission; iv. Substituting for another person, or permitting another person to substitute for one’s self, to take a test; v. Falsifying research data, laboratory reports, and/or other records or academic work offered for credit; vi. Using any sort of unauthorized resources or technology in completion of educational activities. Policy Number: 10.4 Last Revised: Date

Withheld Grades Semester Grades Policy (5.5)
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/](http://www.sfasu.edu/disabilityservices/).

**Mental Health and Wellness**

SFA values students’ mental health and the role it plays in academic and overall student success. SFA provides a variety of resources to support students' mental health and wellness. Many of these resources are free, and all of them are confidential.