DEPARTMENT OF PHYSICS AND ASTRONOMY

PHYSICS 102 LABORATORY - SPRING 2018

Lecture Instructor: Mr. Ali A Piran.
Labaratory Supervisor: Mr. Ali Piran
Phone: 468-2391 Email: apiran@sfasu.edu
Office Hours: M 8:00 am -9:00 am, 2:00 pm -4:00 pm, T 2:00 pm – 3:00 pm, W 8:00 am – 9:00 am
in Room 327 Miller Science Building
Lab Meetings: 102 lab section 20, Wednesday: 3:00 pm-4:50 pm- room 321 Miller Science Building
102 lab section 21, Wednesday: 5:00 pm- 6:50 pm room 321 Miller Science Building
102 lab section 22, Thursday: 2:00 pm-3:50 pm RM 321 Miller Science Building

Course Description

General Physics II Laboratory - (PHYS 1107) - 1 semester hour, 2 hours lab per week. Computation of lecture and laboratory grades into one grade; same grade recorded for both lecture and laboratory. Co-requisite: PHY 102. Lab fee required.

The PHY 102 laboratory and lecture are fully integrated and share the same learning outcomes and course objectives.


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.

General Education Core Curriculum
This course has been selected to be part of Stephen F. Austin State University’s core curriculum. The Texas Higher Education Coordinating Board has identified six objectives for all core courses: 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.

Assessment of these objectives at SFA will be based on student work from all core curriculum courses. This student work will be collected in D2L, the assessment management system selected by SFA to collect student work for core assessment.
The chart below indicates the core objectives addressed by this course, the assignment(s) that will be used to assess the objectives in this course and uploaded to D2L.
<table>
<thead>
<tr>
<th>Core Objective</th>
<th>Definition</th>
<th>Course Assignment Title</th>
<th>Date Due in LiveText</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critical Thinking Skills</td>
<td>To include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information.</td>
<td>The Simulation of Radioactivity</td>
<td></td>
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<tr>
<td>Communication Skills</td>
<td>To include effective development, interpretation and expression of ideas though written, oral, and visual communication.</td>
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<tr>
<td>Empirical and Quantitative Skills</td>
<td>To include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions.</td>
<td>The Simulation of Radioactivity</td>
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<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>
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<tr>
<td>Personal Responsibility</td>
<td>To include the ability to connect choices, actions and consequences to ethical decision-making.</td>
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<tr>
<td>Social Responsibility</td>
<td>To include intercultural competence, knowledge of civic responsibility, and the ability to engage effectively in regional, national, and global communities.</td>
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The following core objectives will be covered periodically in Physics 102 laboratory.

**Critical Thinking:** to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information, (CO 1)

**Communication Skills:** to include effective development, interpretation and expression of ideas through written, oral and visual communication, (CO 2)

**Empirical and Quantitative Skills:** to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions, (CO 3)

**Teamwork:** to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal, (CO 4)

**Student Learning Outcomes:**
By the end of the course, successful students will be able to:
1. Recognize that the world in which they exist can be described by a few natural laws, (SLO 1)
2. Demonstrate a basic familiarity with concepts of States of Matter, temperature, Heat, Electromagnetism, and Nuclear Physics, (SLO 2).
3. Describe natural phenomena in a conceptual manner rather than mathematically, (SLO 3)
4. Demonstrate skills developed in critical thinking, communication (written and visual), empirical and quantitative analysis, and teamwork, (SLO 4. Includes COs 1, 2, 3, 4)

Course Calendar (Laboratory):

**Physics 102 Laboratory SPRING 2018**

<table>
<thead>
<tr>
<th>Week Of</th>
<th>Experiment (All experiments relate to SLOs 1-4)</th>
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<tbody>
<tr>
<td>Jan. 22</td>
<td>1. Density</td>
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<td></td>
<td>2. Thermometer</td>
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<td>Feb. 5</td>
<td>3. Linear Expansion</td>
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<tr>
<td>12</td>
<td>4. Specific Heat</td>
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<td>19</td>
<td>5. Phase Change</td>
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<td>26</td>
<td>6. Instrument Lab</td>
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<td>Mar. 5</td>
<td>7. Ohm's Law</td>
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<tr>
<td>12</td>
<td><strong>No Labs Spring Break</strong></td>
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<tr>
<td>19</td>
<td>8. Series and Parallel</td>
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<tr>
<td>26</td>
<td><strong>NO Lab – EASTER HOLIDAY</strong></td>
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<tr>
<td>Apr 2</td>
<td>9. Magnetic Fields</td>
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<td><strong>Apr 9</strong></td>
<td>10. Simulation of Radioactivity(COs 1-4)</td>
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<td>Apr 16</td>
<td>11. Radiation Counting Radiation Shielding</td>
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<tr>
<td>23</td>
<td>12. Radiation Shielding</td>
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<tr>
<td>May. 10</td>
<td>Final Lab Exam with Lecture Exam Final</td>
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**Instruction on how to correctly collect and analyze scientific data will begin here and will continue throughout the laboratory experience. By the time you get to The Simulation of radioactivity Project you will have adequate development of empirical and quantitative skills to satisfactorily complete the project. This experiment is more comprehensive than the others and will count as 25% of the lab experiment grade. It is designed to allow students to demonstrate their skills in critical thinking, communication, empirical and quantitative analyses, and teamwork. Students will have one week to complete a formal report using word processors and spreadsheets. Your two lowest experiment grades will be dropped. This one (Lab #10) cannot be dropped. More instructions will be given by the laboratory assistant.**

1. To arrive at your overall grade in Physics 102, your ten best experiment grades will be given to your lecture instructor in order for him to average your lecture and experiment grades together. (See lecture syllabus for further information)
2. Each experiment grade will be based on the experiment and a possible pop quiz. Pop quizzes can include questions over the present as well as the most recent laboratory exercise.
3. Each lab must be completed during the lab period.
4. There will be no make-up labs.
5. No transfers are allowed except for those with extenuating circumstances. (Only Mr. Piran can approve transfers.)
6. Your experiment average will be drastically affected if you have three or more absences and any of them are unexcused.

7. Excused absences must be approved by Mr. Piran within 10 days of the absence.

8. Experiment grades and absences will be posted each week in the lab. It is your responsibility to check these postings each week in order to identify errors in the previous week's experiment grade or absence designation. You have 10 days from the day of each posting to correct any such errors.

Lecture and laboratory grades are computed into one grade, and the same grade is recorded for both lecture and laboratory.
The PHY 102 laboratory and lecture are fully integrated and share the same learning outcomes and course objectives.

Attendance Policy:
The class attendance is the responsibility of each student. All students are expected to attend class regularly. Poor attendance may affect your understanding of the materials and ultimately your grade in course. There is penalty for those who missed more than two lab experiments. Your experiment average will be drastically affected if you have three or more absences.

Use of personal computer is permitted only for classroom lecture (Lab) note taking.
Cell phones, pagers and other communication devices must be turned off during class.
Students are not to hold private side conversations.
Reading unrelated publications is not allowed.
Students who exhibit unacceptable classroom behavior will be dismissed from class and counted as absent.

EMAIL COMMUNICATIONS - Make sure you always use your SFA e-mail account for network correspondence.

COURSE REQUIREMENTS AND GRADING POLICY
1. As mentioned in the General Bulletin and in your lecture syllabus, your lecture and laboratory grades are computed into one grade, and the same grade is recorded both for your lecture credit (3 hours) and for your lab credit (1 hour). The lab accounts for 25% of this overall grade. Half of this 25% will come from the average of your 10 highest experiment grades, and the other half will come from your lab final which you will take with your lecture final. This lab final constitutes a major portion of your overall grade in PHY 102. (See lecture syllabus for further information.)
2. Each experiment grade will be based on the experiment and a possible pop quiz. Pop quizzes can include questions over the present as well as the most recent laboratory exercise.
3. Your experiment average will be drastically affected if you have three or more absences and any of them are unexcused.
4. Experiment grades and absences will be posted each week online. It is your responsibility to check these postings in order to identify errors in the most recently posted grades or absence designations. You have 10 days (2 days in the summer) from the day of each posting to correct any such errors.
5. If you have obtained a permit from the chair of the Department of Physics and Astronomy to take the lab only, then your PHY 102 lab grade (for one hour credit) will be determined thusly: 50% of the grade will be based on the lab experiment average and 50% of the grade will come from the lab final. (To qualify for taking the lab without the co requisite lecture, one must already have credit for the lecture and permission of the department chair.)
**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.

**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/academic_integrity.asp](http://www.sfasu.edu/policies/academic_integrity.asp)

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

**Acceptable Student Behavior**

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 (see the Student Conduct Code, policy D-34.1). 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 prohibition 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 Early Alert Program. This program provides students with recommendations for resources or other assistance that is available to help SFA students succeed.

**Student Counseling Center**

Rusk Building 3rd Floor  
(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.