University Physics Laboratory-II: PHYS 2126
Spring 2024 Syllabus

Lecture
Meeting Times: online — Location: online

Instructor: Anirban Bhattacharjee
Office: WSB317 — Email: axb14ku@sulross.edu — Office Hours: TR 11 AM to 1:30 PM or by appointment, Online only
Teaching Assistant
Course Description:
University Physics Laboratory -2 is a calculus based laboratory course in general physics. Emphasis is placed upon the concepts of physics rather than mathematical relationships. It provides a broad introduction to Physics including: (1) Temperature, heat and thermal properties of matter; (2) Optics (3) Electricity and Magnetism;

Resources:
Lab Manual will be provided

Course Objectives:
The goals for this class are as follows:
- Appreciate the scientific process, how it works, the notion that physical laws are universal, the elements of scientific theories, what they do and do not tell us.
- Develop familiarity with the basic concept of Mechanics, thermodynamics and Wave mechanics.
- Describe how data is collected from experiments, and what quantities can be measured/inferred, and formulate conclusions from the results of those experiments.
- Understand basic - yet crucial - physical laws, and the processes that govern natural events
- Integrate concepts from maths and physics to explain relationships and able to converse with other students using proper scientific terminology.
Instructional Philosophy of the Course:
The overarching goals of this course are for you to understand the nature of science through the
eyes of physics; to understand the big ideas in physics; and to develop a lifelong interest in physics
and current events surrounding physics. To meet these three goals, the course instructors have
carefully designed a sequence of learning tasks and assessment procedures as outlined below.

- *Active engagement with nearly daily group activities.* It is a demonstrated fact that you can only
learn a limited amount of information from lecture alone, no matter how clear or entertaining.
Therefore, this course is composed of a series of mini-lectures. In order to nurture a collaborative
and productive environment, I will insist that all *cell phones, PDAs, blackberrys, etc.* be
turned off during the class. Communication with the outside world during class will be considered
disruptive and disrespectful to the rest of the students (and could also be considered cheating –
see Academic Honesty). Anyone caught using any of these devices during class will be asked to
leave.

- *Attendance for all labs is mandatory* Because this course is built around to accompany the lecture,
your attendance and full participation at each class period will be an essential component of your
success in the course.

- *Carefully studying the lab text is REQUIRED.*

Assessment and Grading:
In order to promote an active and collaborative learning environment, there will be no curve to
assess grades. Each student will only be competing against themselves, and will be responsible for
gaining the declarative knowledge and conceptual understanding for performance.

In cases of university-sanctioned excused absences (e.g., ROTC, university athletics, religious
holidays), it is up to you to inform me of the absence **well in advance of the date**, supplying
both the dates and your name. If have done so and there are quizzes on those dates, you will not be
penalized for missing them. The total points from the lab will then be normalized to a maximum
of 100 points for the purposes of computing your grade.

**If you miss more than 3 labs you will receive an automatic F for the class.**

<table>
<thead>
<tr>
<th>Grading Scheme</th>
<th>Total Points</th>
<th>Grade</th>
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<tbody>
<tr>
<td>90–100</td>
<td>A</td>
<td></td>
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<tr>
<td>80–89.999...</td>
<td>B</td>
<td></td>
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<tr>
<td>70–79.999...</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>55–69.999...</td>
<td>D</td>
<td></td>
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<tr>
<td>&lt;54.9999</td>
<td>F</td>
<td></td>
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From the total points, letter grades will be assigned according to the table on the right. There
will be no plus or minus grades assigned.
Students with disabilities: If you require any special accommodations to participate in the class or complete assignments, please contact the instructor as soon as possible.

**Academic Honesty:**

University Student Conduct and Discipline defines Academic Dishonesty:

"The University expects all students to engage in all academic pursuits in a manner that is beyond reproach and to maintain complete honesty and integrity in the academic experiences both in and out of their classroom. The University may initiate disciplinary proceedings against a student accused of any form of academic dishonesty, including but not limited to, cheating on an examination or other academic work, plagiarism, collusion, and the abuse of resource materials. 1. Cheating includes:

- a. Copying from another students test paper, laboratory report, other report, or computer files, data listings, and/or programs, or allowing another student to copy from same.

- b. Using, during a test, materials not authorized by the person giving the test.

- c. Collaborating, without authorization, with another person during an examination or in preparing academic work.

- d. Knowingly, and without authorization, using, buying, selling, stealing, transporting, soliciting, copying, or possessing, in whole or in part, the contents of an unadministered test.

- e. Substituting for another student; permitting any other person, or otherwise assisting any other person to substitute for oneself or for another student in the taking of an examination or test or the preparation of academic work to be submitted for academic credit.

- f. Bribing another person to obtain an unadministered test or information about an unadministered test.

- g. Purchasing, or otherwise acquiring and submitting as ones own work any research paper or other writing assignment prepared by an individual or firm. This section does not apply to the typing of the rough and/or final versions of an assignment by a professional typist.

- h. "Plagiarism" means the appropriation and the unacknowledged incorporation of another's work or idea in one's own written work offered for credit.

- i. "Collusion" means the unauthorized collaboration with another person in preparing written work offered for credit.

- j. "Abuse of resource materials" means the mutilation, destruction, concealment, theft or alteration of materials provided to assist students in the mastery of course materials.
• k. "Academic work" means the preparation of an essay, dissertation, thesis, report, problem, assignment, or other project that the student submits as a course requirement or for a grade.

Procedures for discipline due to academic dishonesty shall be the same as in other disciplinary actions, except that all academic dishonesty cases shall be first considered and reviewed by the faculty member. If, after reviewing the case, the faculty member believes that disciplinary action is necessary, he/she may recommend a penalty but must notify the student of his/her right to appeal to the academic department chair and, eventually, to the dean before imposition of the penalty. If the student does not accept the decision of the academic department chair or dean, the student may then follow the normal disciplinary procedures. No disciplinary action shall become effective against the student until the student has received substantive and procedural due process except as provided under Interim Disciplinary Action.

In addition, during the course of the semester, each student will be asked to carry out exercises in collaboration with other students. To nurture such an environment, we will consider any disruptive or disrespectful acts (such talking on a cell phone, or texting during class) to be a form of cheating. We consider academic dishonesty to be a serious offense and the maximum punishments allowed will be pursued in all scenarios. This includes completing any quizzes, or scantron forms with the help of another student or for scantron forms completed by another student who is not you. If similar work is submitted, all parties involved will receive a zero for their assignment. Make your work your own, be original.
1. Students with Special Needs:

Sul Ross State University (SRSU) is committed to equal access in compliance with Americans with Disabilities Act of 1973. It is SRSU policy to provide reasonable accommodations to students with documented disabilities. It is the Student’s responsibility to initiate a request. Please contact me, Ms. Rebecca Greathouse Wren, M.Ed., LPC-S, Director/Counselor, Accessibility Services Coordinator, Ferguson Hall (Suite 112) at 432.837.8203; mailing address is P.O. Box C-122, Sul Ross State University, Alpine, Texas 79832. Students should then contact the instructor as soon as possible to initiate the recommended accommodations.
# Lab Schedule

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<tr>
<th>Week 1</th>
<th>Introduction, Syllabus, and Review</th>
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<tr>
<td>Week 2</td>
<td>Heat Transfer</td>
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<td>Week 3</td>
<td>Specific Heat Capacity</td>
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<td>Week 4</td>
<td>Problem Solving</td>
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<td>Week 5</td>
<td>Electricity Field</td>
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<td>Week 6</td>
<td>Electricity Potential</td>
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<td>Week 7</td>
<td>Capacitors</td>
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<td>Week 8</td>
<td>Resistors</td>
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<td>Week 9</td>
<td>Problem Solving</td>
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<tr>
<td>Week 10</td>
<td>Circuits 1</td>
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<td>Week 11</td>
<td>Circuits 2</td>
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<td>Week 12</td>
<td>Magnetism</td>
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<td>Week 13</td>
<td>Optics</td>
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<td>Week 14</td>
<td>Problem Solving</td>
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