



**PRAIRIE VIEW A&M UNIVERSITY  
DEPARTMENT OF PHYSICS**

**PHYS-2121-P81: GENERAL PHYSICS LAB II  
CRN 20411  
COURSE SYLLABUS, SPRING 2012**

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**Instructor:** Prof. Gary M. Erickson

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**Lecture Sessions:** Tuesdays, 2:00 – 4:50 PM, Room NSCI-301

**Office Hours:** MWF 1:00 – 1:50 PM

**Text:** **Physics 2121 Laboratory Manual** (available online)

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**COURSE DESCRIPTION:**

This 1 credit hour course is a continuation of the algebra-based laboratory course in general physics with experiments based on topics from waves, thermodynamics, electricity, magnetism, electrical circuits, and light.

**COURSE OBJECTIVES:**

The objectives of this course are for students to have hands-on experiences with the physical laws, especially those dealing with electricity, magnetism, electrical circuits, and light. The primary goal of this course is to strengthen the student's skills in the use of a laboratory, performing experiments, following safety procedures, and reporting the results. The primary outcome of this course is, through hands-on experimentation, to reinforce and expand the student's understanding of physical principles and their application, particularly in the areas of electricity and magnetism.

## PERFORMANCE EVALUATION and GRADING:

- **Lecture:** A brief lecture will begin promptly at 2:00 PM to familiarize the students with the concepts and procedures needed to successfully complete their experiments. It is recommended that students arrive on time and pay attention to the lecture.
- **Participation:** Participation in each lab is required and a roll will be taken. If the student is not marked “present” when the roll is taken, then the student will be considered to be absent. Students may work in groups of 3 or 4 (depending on availability of equipment). No grade is given for lab periods where the student does not have a valid excuse for missing a lab. If a student knows of a valid scheduling conflict that prevents participation in his/her scheduled lab, then the student can arrange with the relevant instructors to attend another lab section during that week. A student can make up one missed lab by participating in the “make-up lab” during Week 13.
- **Pre-Labs:** A pre-lab assignment will be due from each student at the start of each lab (except Lab 1). Pre-labs will not be accepted after 2:05 PM. The purpose of the pre-lab is to expose the student to the concepts involved in that day’s lab. It is hoped that the student will be more prepared to follow the lecture and efficiently perform that day’s experiment. The pre-lab questions will not be difficult; the information needed to complete the pre-lab can be found in any physics textbook or on the internet. Students may also visit their instructor during office hours or seek assistance from the physics tutors in room NSCI-324. “Last-minute” help on the pre-lab assignment may be refused.
- **Lab Reports:** Each group will turn in a group lab report in the format described in class. The group lab report is due at the end of each class. The group is required to report the experimental data obtained, provide any required data analysis, write a conclusion, and provide a discussion.
- **Exams:** At the discretion of the instructor, a laboratory mid-term exam may be given before Lab 6, and/or a laboratory final exam may be given before the make-up lab.
- **Grading:** The grade on the group report will be the score for each member of the group. Pre-labs will count for 20% and lab reports for 80% of each individual’s final grade. A cumulative performance of 20% is required for a “D”, 40% for a “C”, 60% for a “B”, and 80% for an “A” as the final grade. Each student is required to complete 10 experiments; a student will be penalized one letter grade for each unexcused missed lab.
- **Warning:** It is expected that each student (and each group) be engaged and contributing to the group’s laboratory efforts. “Surfing” the internet, “texting”, playing videos, etc., or doing work for another class during the lab period is prohibited. If, after fair warning, any or all members of a group is not contributing to the performance and/or reporting of an experiment, the names of those persons may be excluded from the report and receive a grade of “0” for that week’s lab.

## GRADE OF “I”:

A grade of “I” may be given in cases of documented emergencies or tragedies that prohibit a student from completing a course. In order to receive a grade of “I”, approval must be granted by the Department Head and College Dean.

### Supplementary Material and Help:

1. The **Physics 2121 Laboratory Manual** can be found at Prof. Erickson's webpage (go to "Physics", "People", and click on Prof. Erickson).
2. Tutorial sessions are available in room NSCI-324 through the Physics Department for individual problem discussions.
3. A reference laboratory textbook is **Physics Laboratory Experiments, 5<sup>th</sup> Ed.**, by J. D. Wilson.

## LAB SCHEDULE

(Schedule Subject to Change)

<u>Week</u>	<u>Topic</u>	<u>Note</u>
<b>1 (Jan 17 – Jan 20)</b>	<b>No Labs during Week 1</b>	Late Registration & Drop/Add Ends on Jan 21 for Undergrad. & on Jan 21 for Graduate Students
<b>2 (Jan 23 – 27)</b>	<b>Lab 1: Re-Introduction to Data Analysis; Finding Absolute Zero</b>	<b>Jan 26: General Student Assembly</b>
<b>3 (Jan 30 – Feb 3)</b>	<b>Lab 2: Speed of Sound in Air</b>	Feb 1: Last day to withdraw from course without academic record
<b>4 (Feb 6 – 10)</b>	<b>Lab 3: Electric Potential and Field Mapping</b>	
<b>5 (Feb 13 – 17)</b>	<b>Lab 4: Ohm's Law: Resistivity</b>	
<b>6 (Feb 20 – 24)</b>	<b>Lab 5: Series and Parallel Resistance</b>	<b>Laboratory Mid-Term Exam</b>
<b>7 (Feb 27 – Mar 2)</b>	<b>Lab 6: RC Circuits</b>	
<b>8 (Mar 5– 9)</b>	<b>Mid-Term Week</b>	<b>No Labs</b>
<b>9 (Mar 12 – 16)</b>	<b>Spring Break</b>	<b>No Labs</b>
<b>10 (Mar 19 – 23)</b>	<b>Lab 7: Magnetic Field Laboratory</b>	Mar 23: Deadline to apply for Summer and Fall 2012 graduation
<b>11 (Mar 26 – Mar 30)</b>	<b>Lab 8: Magnetic Induction</b>	<b>Mar 28: Honors Convocation</b>
<b>12 (Apr 2 – 6)</b>	<b>Lab 9: RLC Circuit</b>	Apr 2: Last day to withdraw from course with "W" <b>Apr 6: Good Friday, No Classes</b>
<b>13 (Apr 9 – 13)</b>	<b>Lab 10: Reflection and Refraction of Laser Light</b>	
<b>14 (Apr 16 – 20)</b>	<b>Make-Up Lab: Diffraction Grating</b>	
<b>14 (Apr 23 – 27)</b>	<b>Laboratory Final Exam</b>	<b>End of Course</b>

# University Rules and Procedures

## **Disability statement (See Student Handbook):**

Students with disabilities, including learning disabilities, who wish to request accommodations in class, should register with the Services for Students with Disabilities (SSD) at (936) 857-2693/2694 early in the semester so that appropriate arrangements may be made. In accordance with federal laws, a student requesting special accommodations must provide documentation of their disability to the SSD coordinator.

## **Academic misconduct (See Student Handbook):**

You are expected to practice academic honesty in every aspect of this course and all other courses. Make sure you are familiar with your Student Handbook, especially the section on academic misconduct. Students who engage in academic misconduct are subject to university disciplinary procedures.

### **Forms of academic dishonesty:**

1. Cheating: deception in which a student misrepresents that he/she has mastered information on an academic exercise that he/she has not mastered; giving or receiving aid unauthorized by the instructor on assignments or examinations.
2. Academic misconduct: tampering with grades or taking part in obtaining or distributing any part of a scheduled test.
3. Fabrication: use of invented information or falsified research.
4. Plagiarism: unacknowledged quotation and/or paraphrase of someone else's words, ideas, or data as one's own in work submitted for credit. Failure to identify information or essays from the Internet and submitting them as one's own work also constitutes plagiarism.

## **Nonacademic misconduct (See Student Handbook)**

The university respects the rights of instructors to teach and students to learn. Maintenance of these rights requires campus conditions that do not impede their exercise. Campus behavior that interferes with either (1) the instructor's ability to conduct the class, (2) the inability of other students to profit from the instructional program, or (3) campus behavior that interferes with the rights of others will not be tolerated. An individual engaging in such disruptive behavior may be subject to disciplinary action. Such incidents will be adjudicated by the Dean of Students under nonacademic procedures.

## **Sexual misconduct (See Student Handbook):**

Sexual harassment of students and employers at Prairie View A&M University is unacceptable and will not be tolerated. Any member of the university community violating this policy will be subject to disciplinary action.

## **Attendance Policy:**

Prairie View A&M University requires regular class attendance. Excessive absences will result in lowered grades. Excessive absenteeism, whether excused or unexcused, may result in a student's course grade being reduced or in assignment of a grade of "F". Absences are accumulated beginning with the first day of class.

## **Student Academic Appeals Process**

Authority and responsibility for assigning grades to students rests with the faculty. However, in those instances where students believe that miscommunication, errors, or unfairness of any kind may have adversely affected the instructor's assessment of their academic performance, the student has a right to appeal by the procedure listed in the Undergraduate Catalog and by doing so within thirty days of receiving the grade or experiencing any other problematic academic event that prompted the complaint.