Physics 110 Laboratory  
Spring 2016

Instructor: Mr. Collin J. Timmons  
Email: timmonscj@sfasu.edu

Department: Department of Physics & Astronomy  
Office: 315A Miller Science

Office Hours:  
M: 1 – 4 pm  
T: 10 – 11 am  
W: 1 – 4 pm  
R: 10 – 11 am  
F: 2 – 3 pm  

Phone: 468-5188  
Fax: 4448

Website: https://d2l.sfasu.edu/

Class meeting time and place:  
Section 20 12:00 – 2:50 M  
21 3:00 – 5:50 M  
All labs meet in Miller Science 315

Course Description:  
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: PHY 110. Lab fee required.

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 Objectives/Outcomes:  
- To understand and apply method and appropriate technology to the study of physical science.  
- To recognize scientific and quantitative methods and the differences between these approaches and other methods of inquiry, and to communicate findings, analyses, and interpretation both orally and in writing.  
- To identify and recognize the differences among competing scientific theories.  
- To demonstrate knowledge of the major issues and problems facing modern science, including issues that touch upon ethics, values, and public policies.  
- To demonstrate knowledge of the interdependence of science and technology and their influence on, and contribution to, modern culture.

Student Learning Outcomes  
- Demonstrate the ability to employ Ohm’s Law and Kirchhoff’s Laws to solve introductory DC and AC circuits.  
- Design, construct, and analyze DC and AC circuits.

Text and Materials  
The required lab manual is Experiments in Electronics Fundamentals and Electric Circuits Fundamentals, eighth edition by David Buchla. A scientific calculator is recommended.
Lab Schedule:
For the semester, there will be 11 regular labs, a final practicum, and The Ohm’s Law Project. The final practicum and Ohm’s Law Project are mandatory. Of the 11 regular labs, the 2 lowest grades will be dropped when computing the lab average. If you have any absences, either excused or unexcused, you will receive a grade of 0 for those labs and they will count towards your 2 drop grades. The lab schedule is as follows:

<table>
<thead>
<tr>
<th>Lab</th>
<th>Week of</th>
<th>Experiment</th>
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<tbody>
<tr>
<td>1</td>
<td>Jan. 18</td>
<td>Lab 3 - Measurement of Resistance</td>
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<td>Lab 4: Voltage Measurement and Reference Ground</td>
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<td>2</td>
<td>Jan. 25</td>
<td>Lab 5 - Ohm’s Law</td>
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<td></td>
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<td>Lab 7 - Series Circuits</td>
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<tr>
<td>3</td>
<td>Feb. 1</td>
<td>Lab 9 - Parallel Circuits</td>
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<td></td>
<td></td>
<td>Lab 10 - Series-Parallel Combination Circuits</td>
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<td>4</td>
<td>Feb. 15</td>
<td>Lab 11 - The Superposition Theorem</td>
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<td></td>
<td></td>
<td><strong>Ohm’s Law Project due</strong></td>
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<tr>
<td>5</td>
<td>Feb. 22</td>
<td>Lab 15 - The Oscilloscope</td>
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<td>Lab 16: Sine Wave Measurements</td>
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<tr>
<td>6</td>
<td>Feb. 29</td>
<td>Lab 20: Series RC Circuits</td>
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<td>Lab 21: Parallel RC Circuits</td>
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<tr>
<td>7</td>
<td>Mar. 7</td>
<td>Lab 24: Series RL Circuits</td>
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<td></td>
<td></td>
<td>Lab 25: Parallel RL Circuits</td>
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<td>8</td>
<td>Mar. 21</td>
<td>Lab 26: Series Resonance</td>
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<td>9</td>
<td>Apr. 4</td>
<td>Lab 32 - Rectifier Circuits</td>
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<td>10</td>
<td>Apr. 11</td>
<td>Lab 34: The Common-Emitter Amplifier</td>
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<tr>
<td>11</td>
<td>Apr. 18</td>
<td>Lab 39: Linear Op-Amp Circuits</td>
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<tr>
<td>Final</td>
<td>May 9</td>
<td>Practicum over use of the lab equipment.</td>
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</table>

1. There will be no make-up labs.
2. Each lab must be completed during the lab period. The lab report is to be turned in at the end of the lab period.
3. Excused absences must be approved by Mr. Timmons within one week of the absence.
4. The eleven experiment grades and the lab practicum score will be averaged to arrive at your overall grade in the Physics 110 Lab. The lab practicum grade will count as two lab experiment grades.
5. The laboratory contributes one-fourth and the lecture contributed three-fourths of your grade in Physics 110.

Grading
The lab average and the lecture average are combined into one overall grade for the course. The lab average will be calculated as follows:

\[
\text{Lab Average} = 0.80 \times \left[\frac{(\text{Sum of 9 best experiment grades}) + \text{Lab Practicum} \times 2}{11}\right] + 0.20 \times (\text{The Ohm’s Law Project})
\]

Academic Integrity (A-9.1)
Abiding by university policy on academic integrity is a responsibility of all university faculty and students. Faculty members must promote the components of academic integrity in their instruction, and course syllabi are required to provide information about penalties for cheating and plagiarism as well as the appeal process. *(Much of this information will be provided through internet links.)*
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) falsification or invention of any information, including citations, on an assignment; 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 include, but are not limited to: (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 the Internet or another source; and (3) incorporating the words or ideas of an author into one's paper or presentation without giving the author due credit.

Please read the complete policy and the appeals process at http://www.sfasu.edu/policies/academic_integrity.asp and http://www.sfasu.edu/policies/academic_appeals_students.asp

Withheld Grades Semester Grades Policy (A-54)

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 semesters, 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. This syllabus and other course materials can be made available in other formats. This course meets certain objectives of the ExCET/TEKS. A copy of the objectives and course correlations is available in the ExCET Advisor's office.

Students with documented disabilities that need course adaptations or accommodations please make an appointment with me as soon as possible.

F-1 Visa Holders

There are important federal regulations pertaining to distance education activity for F-1 Visa holders. All students with an F-1 Visa should follow the instructions at the following link to make sure they are in compliance. http://www.oit.sfasu.edu/disted/facsup/f1visa.html

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. http://www.sfasu.edu/policies/student_conduct_code.asp