FUNDAMENTALS OF ELECTRONICS LABORATORY
PHYSICS 110.020, 110.021, & 110.022
FALL 2010

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Office Hours: Monday 11:00-11:50 AM and Tuesday 1:30-3:00 PM
Lab meeting times and place: 110.020: Monday 12:00 NOON-2:50 PM
110.021: Monday 3:00-5:50 PM
110.022: Tuesday 12:30-3:20 PM
All labs meet in S-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:

There are no specific program learning outcomes for the physics program 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:

Lab Schedule:

For the semester, there will be 11 regular labs and a final practicum. The final practicum is 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>
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<tr>
<th>LAB</th>
<th>WEEK</th>
<th>EXPERIMENTS</th>
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| 1   | Sept. 13 - Sept. 17 | Experiment 3: Measurement of Resistance  
Experiment 4: Voltage Measurement and Reference Ground |
| 2   | Sept. 20 - Sept. 24 | Experiment 5: Ohm's Law  
Experiment 7: Series Circuits |
| 3   | Sept. 27 - Oct. 1 | Experiment 9: Parallel Circuits  
Experiment 10: Series-Parallel Combination Circuits |
| 4   | Oct. 4 - Oct. 8 | Experiment 11: The Superposition Theorem |
| 5   | Oct. 11 - Oct. 15 | Experiment 15: The Oscilloscope  
Experiment 16: Sine Wave Measurements |
| 6   | Oct. 18 - Oct. 22 | Experiment 20: Series RC Circuits  
Experiment 21: Parallel RC Circuits |
| 7   | Oct. 25 - Oct. 29 | Experiment 24: Series RL Circuits  
Experiment 25: Parallel RL Circuits |
| 8   | Nov. 1 - Nov. 5 | Experiment 26: Series Resonance  
Experiment 27: Parallel Resonance |
| 9   | Nov. 8 - Nov. 12 | Experiment 32: Rectifier Circuits |
| 10  | Nov. 15 - Nov. 19 | Experiment 34: The Common-Emitter Amplifier |
| 11  | Nov. 29 - Dec. 3 | Experiment 39: Linear Op-Amp Circuits  
Miscellaneous Topics: Digital Gates, 555 Timer Circuits, etc. |
| Final | Dec. 6 - Dec. 10 | Practicum over use of the lab equipment. |

Grading Policy:

Your grade will be calculated using the following formula:

\[
\text{Grade} = 0.75 \left( \frac{\text{Exam 1} + \text{Exam 2} + \text{Exam 3} + \text{Research Paper} + \text{Final} + \text{Hmewk Ave}}{6} \right) + 0.25 (\text{Lab Ave}),
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Note that in accordance with the course description in the General Bulletin, the lecture part and the lab part go together to form a single grade. **YOU WILL RECEIVE THE SAME GRADE IN BOTH THE LECTURE AND THE LAB BASED ON THE FORMULA ABOVE.**
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

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/.