PHYSICS 225: Electronics (Spring 2015)

Prerequisites:  electromagnetism at the level of Physics 208;  
lab experience with RC, RL, LC circuits;  
calculus at the level of Math 172;  
differential equations at the level of Math 308;  
vector calculus and Fourier analysis at the level of Math 221;  
linear equations and determinants.

Lectures:  TR 8:00-9:15am, MPHY 203. You are responsible for having read the text that is the subject of each lecture before coming to class.

Instructor:  Wenhao Wu  
Office: MPHY 462  
Phone: (979) 845-7737  
E-mail: wwu@physics.tamu.edu  
Office hours: TR 2:30-3:45 or by appointment

TA Instructor: Isabel Schultz  
Office: MPHY B01  
Phone: (979) 862-8898  
E-mail: isabel_schultz@physics.tamu.edu  
Office hours: TBA

Web Page:  http://people.physics.tamu.edu/wwu/phys225.html  (course information)  
http://ecampus.tamu.edu/  (grades)

Textbooks and Lab Manual:  
(3) The lab manual: To be handed out.

As a prerequisite you are responsible for knowing the principles of passive circuits including RC, RL, and LC networks, and for knowing the basic use of meters and an oscilloscope in the laboratory. All of this is covered in PHYS208, which is prerequisite for this course. You can review this material in the references cited in the syllabus.

You are required to take a closed-book diagnostic exam which is available through a link on the course webpage. This is for me to assess the level of understanding of the related materials. This is not to be counted toward your class grade. Please review the related materials, complete this closed-book exam, and return it to me during class on Tuesday, January 27. I will return the exam to you on Tuesday, February 3.

Lab and Recitation: Starting in the second week of the semester, in MPHY 330B.

Section 501 on Tuesdays, 02:20 pm-05:10 pm  
Section 502 on Thursdays, 02:20 pm-05:10 pm  
Section 503 on Wednesdays, 01:50 pm-04:40 pm

Students will work in 2-person teams. Each team is expected to do the work of a lab as a team. Lab reports are due at the beginning of the next lab period. Participation in lab is a major component of the
course and is mandatory. Only University Excused Absences will be accepted without loss of the credit for that lab. If you must miss a given lab, it is your responsibility wherever possible to attend the other lab section that same week, so that you can do the lab with your fellow students. Makeups will only be arranged if a student has University Excused Absence for all the lab days of a week.

**Homework:** Homework will be assigned on Thursdays and due the following Thursday. Homework that is late by no more than a full week will be penalized by 50%.

**Project:** Each student is expected to select and carry out a project during the semester. You may select a partner and jointly complete the project. Each student will write and submit an individual report on his/her project. A list of the projects for your selection is available through a link on the course webpage. This list may be updated from time to time. You may also select projects not shown on this list. The deadline for the submission of the written project report is Tuesday, April 20. The presentation of the projects are scheduled for the week of April 26 (time and location TBA).

**Exams:** There will be two term exams during the semester (March 3rd and April 16th). The final exam will be held on Friday, May 8, 2015, 1:00-3:00pm, and is cumulative.

**Course Grade:** The total course grade consists of 100 points distributed as follows:

- 2 Exams: 25
- Final Exam: 15
- Lab reports: 20
- Project: 20
- Homework: 20
- Total: 100

**Tentative Schedule**

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<td>January 26</td>
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<td>Chapter 2: ac Circuits</td>
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ADA Policy:
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Department of Student Life, Services for Students with Disabilities, in Room 218 of Cain Hall or call 979-845-1637.