Physics 313: Electronics
Fall 2016

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My Webpage: http://userpages.wittenberg.edu/pvoytas/index.html
Class Web site: http://userpages.wittenberg.edu/pvoytas/courses/p313_f16/index.html, where homework and reading assignments and other material for the course will be available.

Text: **Introduction to Modern Electronics** J.C. Sprott
My text/notes
Additional Resources: online text: http://en.wikibooks.org/wiki/Electronics

Course description: An introduction to electronics (mostly analog). The emphasis will be on a hands-on, practical understanding of circuit elements, and so the labs are the central part of the course. Readings and homework will supplement and support the lab exercises. This is a half-semester course meeting for 3 hours twice a week.

Office hours: TBA.

Monday		Tuesday		Wednesday		Thursday		Friday	
8:00		**8:00**		**8:00**		**8:00**		**8:00**	
9:15		**9:45**		**9:15**		**9:45**		**9:15**	
10:30		**11:30**		**10:30**		**11:30**		**10:30**	
11:45		**12:00**		**11:45**		**12:00**		**11:45**	
1:00		**1:00**	Physics 313 Lab Sci 304	**1:00**		**1:00**	Physics 313 Lab Sci 304	**1:00**	
2:15		**2:45**	| | V	**2:15**		**2:45**	| | V	**2:15**	
3:30		**4:30**	Faculty Meetings (some weeks)	**3:30**	Physics 360/460 Sci 319	**4:30**		**3:30**	
4:45				**4:45**				**4:45**	

Grading policy:
laboratory work…….…… 35%
assignments..... 20%
midterm…..... 20%
final…….….... 25%
TOTAL 100%

Letter grades will be assigned according to the percentage of possible points you have accumulated at the end of the semester. You are guaranteed that the divisions between grades will be no higher than the following: 90%≤ A^-,A ≤100%, 80%≤ B^-,B, B^+<90%, 70%≤ C^-,C, C^+<80%, 60%≤ D^-,D, D^+<70%, F<60%. In borderline cases, attendance, class participation, and trend in exam scores will be used to decide whether to award the higher grade.

Accommodations:
Note to Students with Disabilities: Wittenberg University is committed to providing reasonable accommodations for eligible students with disabilities. If you are eligible for course accommodations due to a disability, please provide me with your self-identification letter from the Office of Academic Services (206 Recitation Hall), so that we may discuss your learning needs. Early identification at the start of the term is required to ensure timely provision of services. If you need to contact the Office of Academic Services, please contact Roberta Perry at 937-327-7891 or rperry@wittenberg.edu.

Labs: Record all your work in lab in a permanently-bound quadrille-ruled notebook in ink. Computer-generated plots and similar materials must be taped (all 4 corners, no stapling) into the book. The notebooks will normally be collected by the end of the day on Fridays for grading.

Readings and homework: Reading, problems, and questions will generally be assigned for each class period and will be due at the beginning of the next class. Some will be over material covered the previous class/lab period (review questions), and some will be over the material for the upcoming class period (preparation questions). Late homework will be accepted for half credit until the beginning of the next class after the assignment was due.

Exams: There will be a midterm exam after the first half of the course as well as a comprehensive final exam. Both exams will have a written part, which will be closed-book, emphasizing the application of fundamental principles to circuits like those you've seen in lab, and a **lab practical** part, which will be open lab book, emphasizing building circuits, making measurements, and interpreting those measurements.

Attendance: Unless something physically prevents you from doing so, contact me *before* class if you are going to be absent. Makeup labs and exams will be available only in cases of excused absences.

Tentative course schedule (in addition to the sections from Sprott, class notes will be available):

date	Topics	readings
T Aug. 23	DC circuits, instrumentation (lab 1)	Sprott : Through 1.5
R Aug. 25	Voltage dividers, Thévenin theorem (lab 1)	Sprott : 2.1,2.3,2.4,2.6,2.7
T Aug. 30	AC circuits and measurements; RC integrator, low-pass filter (lab 2)	Sprott : Ch 3, Ch 4
R Sept. 1	RC differentiator, high-pass filter; oscilloscope impedance (lab 2)	
T Sept. 6	Diodes and diode circuits (lab 3)	Sprott : Through 6.4, 6.6,6.7,6.9
R Sept. 8	Diode circuits: rectifiers and voltage regulation (lab 3)	
T Sept. 13	**Exam 1**	
R Sept. 15	Bipolar transistor properties (lab 4)	Sprott : Ch 8 through p 173, 8.4-8.6, 8.8
T Sept. 20	Transistor circuits (lab 4)	
R Sept. 22	More transistor circuits (lab 4)	
T Sept. 27	Op amp properties and circuits; Golden Rules (lab 6)	Sprott: 9.1-9.3,
R Sep. 29	Op amp circuits (lab 6)	
T Oct. 4	Op amp circuits (lab 6)	Sprott: 9.6-9.9
R Oct. 6	Comparators and oscillators (lab 7)	Sprott 10.1, Supplemental reading
T Oct. 11	**Final exam**	