

## Course Syllabus: Physics 475, UH Fall Semester 2019

Instructor: Prof. Gary Varner

Class Hours: T Th 10:30 - 11:45am, Lab Th 12:30 - 3:20 Watanabe 415A

week	date	Lecture topics	Reading/Laboratory topics
1	27-Aug	Overview of electronics	Intro, Chap 1 - 12
	29-Aug	V,I,R, signals	LAB1: Intro/DC circuits
2	3-Sep	AC circuits	Chap 13 - 26
	5-Sep	Time/frequency domains	LAB2: Capacitors
3	10-Sep	Diodes	Chap 27
	12-Sep		LAB3: Diode circuits
4	17-Sep	Transistors	Chap 28 - 29
	19-Sep		LAB4: Transistors
5	24-Sep	Field Effect Transistors	Chap 30 - 31
	26-Sep		LAB5: FETs
6	1-Oct	Operational Amplifiers (I)	Chap 33
	3-Oct		LAB6: Op Amps I
7	8-Oct	Op Amps (II)	Chap 33
	10-Oct		LAB7: Op Amps II
8	15-Oct	Comparators & Vreg	Review
	17-Oct	555 timer, AMUX, review	LAB8: Comparators
9	22-Oct	<b>Midterm #1</b>	Class Notes
	24-Oct	Digital Logic I	LAB9: Logical Gates
10	29-Oct	Digital Logic II	Class Notes
	31-Oct	Flip Flops	LAB10: Flip-flops
11	5-Nov	Counters / Comp Intro	Class Notes
	7-Nov	Intro to Programmable Logic	LAB11: Counters and Timers
12	12-Nov	Programmable Logic II	Class Notes
	14-Nov	FW2 & Digital -> Analog	LAB12: Programmable Logic Intro
13	19-Nov	FW3 & Analog -> Digital	Class Notes
	21-Nov	Computers	LAB13: Prog Logic / A-D & D-A
14	26-Nov	<b>Midterm #2</b>	
	28-Nov	Holiday: Thanksgiving	
15	3-Dec	Student Project work	
	5-Dec	<b>Design Review</b>	<b>Student project work</b>
16	10-Dec	Student Project work	
	12-Dec	Student Project work	<b>Student project work</b>
17	13-Dec	<b>Final Presentations (TBC) -- Project Write-ups due by 5pm (12/13)</b>	

DIRC19  
DIRC19

DUNE?  
DUNE?

B2GM  
B2GM  
BPAC

Online: [http://www.phys.hawaii.edu/~varner/PHYS475\\_Fall2019/phys475\\_fall19.html](http://www.phys.hawaii.edu/~varner/PHYS475_Fall2019/phys475_fall19.html)

Prerequisite: Physics 272L, and at least junior standing, or permission from instructor

Text: Schultz: *Grob's Basic Electronics, 11th Edition*

Optional/Reference: Horowitz and Hill: *The Art of Electronics*

Office hours: WAT214 M 4-5pm, during lab period, any afternoon in WAT214 by appointment

email: varner@phys.hawaii.edu

Lecture: T Th 10:30 - 11:45am WAT 415A

Lab: Th 12:30 - 3:20 WAT415A, mandatory. **Scientific Calculator & lab notebook also mandatory**

**Writing Intensive: Scientific writing and lab reports will be critiqued and graded on both lab and writing techniques by the formula at the bottom:**

**40% of the course grade is determined by satisfactory completion of the writing assignments**

Homework: Assigned Tuesday, due next Tuesday, no late homework.

Grading: Based on curve derived from Total (100) = (MT1(100)+MT2(100)+HW(100)+FINAL(100)+Lab(100))/5