UW Physics 623 Syllabus 4 credits Fall 1999 Profs D. McCammon and R. Prepost

Lectures in Sterling Hall Room 3335 on Tues. and Thurs. from 1:00 PM to 2:15 PM Labs in Sterling Hall Room 3525 on Wed. 2:25-5:25; 7:00-10:00 PM Final Exam on Fri. Dec 21 at 10:05 in a room yet to be chosen.

D. McCammon: Office hours in 6207 Chamberlin 9-10 AM Tues. and by appt./dropin Phone: 262-5916; EMail: McCammon@wisp.physics.wisc.edu

R. Prepost: Office Hours in Chamberlin 4271 Wed. 10-12 AM and by appt./dropin Phone: 262-4905: EMail: prepost@wishep.physics.wisc.edu

Grades: 50/50: Lab/Lecture

References are on reserve in the Physics Library.

Text

"The Art of Electronics" by Horowitz and Hill, Cambridge 2nd Ed.

Useful General References

"Introductory Electronics for Scientists and Engineers" R.E.Simpson, (Allyn and Bacon) 2nd Ed. "Introduction to Modern Electronics" Clint Sprott, (Wiley) (2 photocopies) "Electronics for the Physicist", C.F.G. Delaney (Ellis Horwood) "Basic Electronics for Scientists", James J. Brophy, (McGraw-Hill) 5th Ed.

References for Specific Topics

"Transmission Lines", Robert A. Chipman (Schaum Outline Series) 1968

"Analog Signal Processing and Instrumentation", A.F.Arbel (Cambridge)

"Designing with TTL Integrated Circuits", Morris and Miller (McGraw Hill)

"Pulse, Digital and Switching Waveforms", Millman and Taub (McGraw Hill) 1965

"Microelectronics", J.Millman and A. Grabel (McGraw Hill) 1987

Week	Lect	Date	Likely Lecture (Tues+Thur)	Lab	Likely Laboratory
				Wed	
	Thur	Sep 2	Transmission Lines		
1	Tues	Sep 7	Diodes p-n junction	Sep 8	Transmission Lines
	Thur	Sep 9	Transistor Biasing		
2	Tues	Sep 14	Transistor Circuits	Sep 15	Transistor Amplifier
	Thur	Sep 16	Feedback and Op Amps		
3	Tues	Sep 21	Op Amps	Sep 22	Difference Amplifier
	Thur	Sep 23	Op Amp Circuits		
4	Tues	Sep 28	Frequency Dependence	Sep 29	Operational Amp I
	Thur	Sep 30	Feedback		
5	Tues	Oct 5	Noise and Phase Lock	Oct 6	Op Amperational II
	Thur	Oct 7	Positive Feedback		
6	Tues	Oct 12	Multivibrators and Switching	Oct 13	Noise
	Thur	Oct 14	Field Effect Transistors		
7	Tues	Oct 19	MOSFETs	Oct 20	Lock-In Amp
	Thur	Oct 21	Examination		
8	Tues	Oct 26	Digital Logic	Oct 27	Oscillators
	Thur	Oct 28	Digital Circuits		
9	Tues	Nov 2	Digital Analysis	Nov 3	Digital Circuits I
	Thur	Nov 4	Digital Analysis		
10	Tues	Nov 9	Digital/Analog Conversion	Nov 10	Digital Circuits II
	Thur	Nov 11	Digital Synthesis		
11	Tues	Nov 16	Digital Circuits	Nov 17	D to A and A to D Conversion
	Thur	Nov 18	Digital Computing		
12	Tues	Nov 23	RAM & Caches	Nov 24	Electronic $CAD + Sim$
	Thur	Nov 25	Thanksgiving:		
			Nov 25-Nov 28		
13	Tues	Nov 30	Computer Architecture	Dec 1	FPGA I
	Thur	Dec 2	Buses		
14	Tues	Dec 7	Fiber Optics	Dec 8	FPGA II
	Thur	Dec 9	Electronic Instruments		
15	Tues	Dec 14	Review		

623 Lectures and Labs Fall 1999