Fall 2011 EECS 170A ELECTRONICS I (18220) (Burke)
Subject to change.

Wk.	Monday	Wednesday	Friday	Quiz (due Friday 4 PM) to cover	Discussion to cover (Thurs. Morning)	HW to cover	Lab to cover (M/Tu/W/Th)
"0"			Introduction pp. 3-6 (L1)	N/A	N/A	N/A	N/A
1	Resistance pp. 75-89 (L2)	(L2, L4)	Energy bands pp. 23-34 (L4)	Resistance, resistivity ρ from R vice versa	Resistance, resistivity ρ from R vice versa		Equipment Input/output impedance
2	Doping pp. 35-40,57-61 (L5)	TA lecture (Professor out of town) Si Run video	Density of States Fermi Level pp. 41-57,61-67 (L6)	Energy bands Doping n,p,ρ,μ,R from N_D, N_A	Energy bands Doping n,p,ρ,μ,R from N_D, N_A	HW#1: ρ from R vice versa (Due Thurs)	Soldering, RC circuits
3	Density of States Fermi Level (continued) (L6)	Density of States Fermi Level (continued) (L6)	Diode I-V intro Band bending (L7), pp. 89-93	E_F from N_A,N_D	E_F from N_A,N_D	HW#2: n,p,ρ,μ,R from N_D, N_A (Due Thurs)	Resistivity measurement
4	Diffusion, equilibrium, Einstein relationship (L8) pp. 94-104	(L8)	Midterm 1 Covers HW 1,2,3 pp. 3-6,23-67,75-89 (L1-L6)	n(x),p(x),E(x), $J_{n,diff}(x)$,$J_{n,drift}(x)$, $J_{p,diff}(x)$,$J_{p,drift}(x)$, $E_c(x)$ from $N_A(x)$,$N_D(x)$	n(x),p(x),E(x), $J_{n,diff}(x)$,$J_{n,drift}(x)$, $J_{p,diff}(x)$,$J_{p,drift}(x)$, $E_c(x)$ from $N_A(x)$,$N_D(x)$	HW#3: E_F from N_A,N_D (Due Thurs)	Diode I-V
5	p-n intro. pp. 195-208 (L11)	p-n under bias (L13,L14) pp. 215-221 p-n I-V pp. 235-240	(L13,L14)	p-n under bias	p-n under bias	HW#4 n(x),p(x),E(x), $J_{n,diff}(x)$,$J_{n,drift}(x)$, $J_{p,diff}(x)$,$J_{p,drift}(x)$, $E_c(x)$ from $N_A(x)$,$N_D(x)$ (Due Thurs)	Diode transient response
6	BJT intro. pp. 371-372 (L16)	Ebers-Moll Hybrid pi model pp. 371-385, 404, 443-448(L17)	Transistor amplifiers (L17)	BJT biasing		HW#5 p-n under bias (Due Thurs)	Transistor
7	Transistor amplifiers (L17)	Mini Review MOS pp. 563-571	Veteran's Day (Holiday)			HW#6 BJT circuits (Due Thurs)	Transistor switches
8	Midterm 2	MOSFET pp. 611-644	MOSFET pp. 611-644				Amplifiers
9	Lab quiz	Si Run (Video)	HOLIDAY (Thanksgiving)				No lab this week
10	CMOS Inverter	MOS memory DRAM, SRAM, Flash	Review				Amplifiers
Finals	COURSE FINAL EXAM						