Date	Lecture #	Materials to be covered	HW Assig
Aug 31-Wed	1	Syllabus, Hydrogen Atom, CM & Relative Motion,Hydrogenic Systems	
Sep 2-Fri	2	Atomic units, Radial & Angular Wave fns, Energy Spectrum	1
Sep 5-Mon	LABOR DAY		
Sep 7-Wed	3	Hydrogen atom in 2-dimension,Variational Method	
Sep 9-Fri	4	Spin Orbit interaction, Hyperfine Interaction, Hellman-Feynman Theorem	2
Sep 12-Mon	5	N-electron atoms, Electronic configurations	
Sep 14-Wed	6	Hund's Rules, Magnetic properties of atoms	
Sep 16-Fri	7	Diamagnetism and Paramagnetism in atoms	3
Sep 19-Mon	8	Born-Oppenheimer approximation	
Sep 21-Wed	9	Molecular Orbital theory, H2 molecule	
Sep 23-Fri	10	H2 molecule, Heitler-London approximation	4
Sep 26-Mon	11	Electronic configuration of diatomic molecules	
Sep 28-Wed	12	Heisenberg Model for H2	
Sep 30-Fri	13	REVIEW	
Oct 3-Mon	EXAM 1		
Oct 5-Wed	14	Midterm discussion, Bravais lattices, Cubic, FCC, BCC, WS Cell	
Oct 7-Fri	15	Lattice with basis, Hexagonal, HCP, Reciprocal Lattice	5
Oct 10-Mon	16	Brilloun Zone, X-Ray Diffraction	
Oct 12-Wed	17	Ewald's construction	
Oct 14-Fri	18	Structure factor for lattices with a basis	6
Oct 17-Mon	19	Bloch's Theorem, Energy Bands	
Oct 19-Wed	20	Nearly free electron (NFE) model	
Oct 21-Fri	21	NFE model, Heat capacity, Pauli susc., Landau diamag.	7
Oct 24-Mon	22	Metals, Semiconductors, Insulators (Band structure)	
Oct 26-Wed	23	Electrical Conductivity and Classical Hall effect in NFE model	
Oct 28-Fri	24	Tight binding model in 1d	8
Oct 31-Mon	25	Tight binding model in 2d and 3d	
Nov 2-Wed	26	Lattice Vibrations, Acoustic and Optic modes	
Nov 4-Fri	27	REVIEW	
Nov 7-Mon	EXAM2		
Nov 9-Wed	28	Midterm Discussion	
Nov 11-Fri	29	Quantization of lattice vibrations, phonons	9
Nov 14-Mon	30	Einstein model of specific heat	
Nov 16-Wed	31	Debye model of specific heat	
Nov 18-Fri	32	Plasmons, Polaritons, and Polarons	10
Nov 21-Mon	33	Plasmons, Polaritons, and Polarons	

Nov 23-Wed		34	Optical processes and Excitons	
Nov 25-Fri	THANKS GIVING			
Nov 28-Mon		35	Optical processes and Excitons	
Dec 2-Fri		36	Ferromagnetism and Antiferromagnetism	11
Dec 5-Mon		37	Superconductivity	
Dec 7-Wed		38	Superconductivity	
Dec 9-Mon		38	REVIEW	
Dec 12-Mon	FINAL		EXAMINATION	