Modern Physics II

CLASS DATE	HOMEWORK ASSIGNMENTS DUE; EXAMS	READINGS AHEAD; TOPICS	
AUG 20		7	**INTRODUCTION;** CHAP 7; SEPARATION OF VARIABLES
22		7.6-10	HYDROGEN ATOM AND PHOTON EMISSION
24		8.1	**SPIN & ATOMIC PHYSICS;** ANGULAR MOM. QUANTIZ.
27		8.2	IDENTICAL PARTICLES
29		8.3-4	EXCLUSION PRINCIPLE; PERIODIC TABLE
AUG 31		8.5	CHARACTERISTIC X-RAYS
SEP 3			*LABOR DAY*
5	ASSIGNMENT 1, SECTIONS 8.1- 8.5: 14, 21, 30, 33, 38, 40, 41, 50, 56, 58	8.6	SPIN-ORBIT INTERACTION
7		8.7-(8)	ADDING ANGULAR MOMENTA; (ZEEMAN EFFECT)
10		8.9	EXCITATION SPECTRA
12		9.1	**STATISTICAL MECHANICS**
14		9.2	ENTROPY AND TEMPERATURE
17		9.3	BOLTZMANN DISTRIBUTION
19		9.4	CLASSICAL AVERAGES
21	ASSIGNMENT 2A DUE: 8.6-9.3: PROBLEMS 8.60, 8.67, 8.78, 8.85,	9.5	QUANTUM DISTRIBUTIONS
24	ASSIGNMENT 2B DUE: problems 9.19, 9.23, 9.24, 9.25, 9.27, 9.35	9.5	QUANTUM DISTRIBUTIONS (CONTINUED)
26	*EXAM 1: CHAPTER 8*		*REVIEW FOR EXAM 1: CHAPTER 8*
SEP 28		9.6-7	QUANTUM GAS OF ATOMS; PHOTON GAS
OCT 1		9.8	LASER
3		9.9	SPECIFIC HEAT
5		10.1-2	**BONDING: MOLECULES AND SOLIDS**
8	ASSIGNMENT 3 DUE: 9.4-9.9: PROBLEMS 9.41, 9.42, 9.53, 9.60, 9.61, 9.70, 9.74, 9.78, 9.81, 9.85	10.3	ROTATION AND VIBRATION
10		10.4-5	CRYSTALLINE SOLIDS; ENERGY BANDS; CONDUCTION
12		10.6	CONDUCTORS, INSULATORS, SEMICONDUCTORS
15		10.7	SEMICONDUCTORS; VALENCE AND CONDUCT. BANDS
17	*EXAM 2: CHAPTER 9*		*REVIEW FOR EXAM 2: CHAPTER 9*
19		10.8	SEMICONDUCTOR DEVICES
22		10.9	SUPERCONDUCTIVITY
24	ASSIGNMENT 4 DUE: 10.1-6: 10.26, 10.27, 10.30, 10.38, 10.46, 10.47, 10.51, 10.53, 10.54, 10.56.	10.10	FULLERENES
26		11.1	**NUCLEAR PHYSICS**
29		11.2	BINDING
OCT 31		11.3	NUCLEAR MODELS
NOV 2		11.4	NUCLEAR MAGNETIC RESONANCE AND MRI
5	ASSIGNMENT 5 DUE: 10.7-11.2: 10.62, 10.65, 10.67, 10.68, 10.69, 10.71 (A,B ONLY), 10.73, 10.76, 11.14, 11.19	11.5-6	NUCLEAR DECAY AND RADIOACTIVITY; DECAY LAW
7		11.7	NUCLEAR REACTIONS, FISSION AND FUSION
NOV 9	*EXAM 3: CHAPTERS 10 AND 11.1-4*		*REVIEW FOR EXAM 3: CHAPTERS 10 AND 11.1-4*
12			*VETERAN'S DAY*
14		12.1	**FUNDAMENTAL PARTICLES AND INTERACTIONS**
16		12.2	ANTIPARTICLES
NOV 19-23			*THANKSGIVING BREAK*
26		12.3	FORCES AND PARTICLES; HOW MANY??
28	ASSIGNMENT 6 DUE: 11.3-12.2: 11.27, 11.33, 11.36, 11.43, 11.53, 11.62, 11.65, 12.9, 12.13, 12.15	12.4	PARTICLE PRODUCTION AND DETECTION
NOV 30		12.5	DECAY MODES; CONSERVATION RULES
DEC 3		12.6	PARITY, CHARGE CONSERVATION, TIME REVERSAL
5	ASSIGNMENT 7: 12.22, 12.28, 12.33, 12.34, 12.35, 12.36, 12.37, 12.38, 12.53 (NOT COLLECTED; SOLUTIONS POTED ON 12/5)	12.7	UNIFIED THEORIES AND COSMOLOGY
7			*WRAPUP*
DEC 12	*FINAL EXAM, 1:00-3:00 OR 1:00-4:00*		***FINAL EXAM***

Readings are from the text Modern Physics, Randy Harris (Pearson, 2nd edition, 2008).
Schedule subject to corrections and/or changes. 15 November 2012