

Modern Physics II

CLASS DAY	HOMEWORK PROBLEM ASSIGNMENTS	NEW READINGS AND TOPICS	
AUG 23			INTRODUCTION
25		7	REVIEW: QM IN 3D AND THE HYDROGEN ATOM
27		8.1	SPIN AND ATOMIC PHYSICS; ANGULAR MOM. QUANT.
AUG 30		8.2	IDENTICAL PARTICLES
SEP 1		8.3-4	EXCLUSION PRINC. MULTI- e ATOMS PERIODIC TABLE
3		8.5	CHARACTERISTIC X-RAYS
<i>SEP 6</i>			<i>LABOR DAY</i>
8	ASSIGNMENT 1 DUE: 8.1-8.5: IN CHAPTER 8: CQ: 14, 21; EX: 30, 33, 38, 40, 41, 50, 56, 58	8.6	SPIN-ORBIT INTERACTION
10		8.7-(8)	ADDING ANGULAR MOMENTA; (ZEEMAN EFFECT)
13		8.9	EXCITATION SPECTRA
15		9.1	STATISTICAL MECHANICS
17		9.2	ENTROPY AND TEMPERATURE
20		9.3	BOLTZMANN DISTRIBUTION
22		9.4	CLASSICAL AVERAGES
24	ASSIGNMENT 2 DUE: 8.6-9.3: PROBLEMS 8.60, 8.67, 8.78, 8.85, 9.19, 9.23, 9.24, 9.25, 9.27, 9.35	9.5	QUANTUM DISTRIBUTIONS
27		9.5	(CONTINUED)
29	<i>EXAM 1: CHAPTER 8</i>		<i>EXAM 1: CHAPTER 8</i>
OCT 1		9.6-7	QUANTUM GAS OF ATOMS; PHOTON GAS
4		9.8	LASER
6		9.9	SPECIFIC HEAT
8		10.1-2	BONDING: MOLECULES AND SOLIDS
11	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
13		10.4-5	CRYSTALLINE SOLIDS; ENERGY BANDS; CONDUCTION
15		10.6	CONDUCTORS, INSULATORS, SEMICONDUCTORS
18		10.7	SEMICONDUCTORS; VALENCE AND CONDUCT. BANDS
20	<i>EXAM 2: CHAPTER 9</i>		<i>EXAM 2: CHAPTER 9</i>
22		10.8	SEMICONDUCTOR DEVICES
25		10.9	SUPERCONDUCTIVITY
27	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
29		11.1	NUCLEAR PHYSICS
NOV 1		11.2	BINDING
3		11.3	MODELS
4		11.4	NUCLEAR MAGNETIC RESONANCE AND MRI
8	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	NUCLEAR DECAY AND RADIOACTIVITY
10		11.6	RADIOACTIVE DECAY LAW
12		11.7	NUCLEAR REACTIONS, FISSION AND FUSION
15	<i>EXAM 3: CHAPTER 10 AND 11.1-4</i>		<i>EXAM 3: CHAPTER 10 AND 11.1-4</i>
17		12.1	FUNDAMENTAL PARTICLES AND INTERACTIONS
29		12.2	ANTIPARTICLES
22-26			
29		12.3	FORCES AND PARTICLES; HOW MANY??
DEC 1	ASSIGNMENT 6 DUE: 11.3-12.2	12.4	PARTICLE PRODUCTION AND DETECTION
3		12.5	DECAY MODES; CONSERVATION RULES
6		12.6	PARITY, CHARGE CONSERVATION, TIME REVERSAL
8		12.7	UNIFIED THEORIES AND COSMOLOGY
10			<i>WRAPUP</i>
DEC 15			<i>FINAL EXAM, 1-3 OR 1-4 PM</i>

Be sure to reload your browser to see current version!
Schedule subject to corrections and/or changes.

Text Modern Physics, Randy Harris (Pearson, 2nd edition, 2008)
Gary Collins, 25 October 2010