

Exam III

10. Rotational Kinematics and Energy, 297
 - 10-1. Angular Position, Velocity, and Acceleration, 298
 - 10-2. Rotational Kinematics, 302
 - 10-3. Connections Between Linear and Rotational Quantities, 305
 - 10-4. Rolling Motion, 310
 - 10-5. Rotational Kinetic Energy and the Moment of Inertia, 311
 - 10-6. Conservation of Energy, 315
11. Rotational Dynamics and Static Equilibrium, 332
 - 11-1. Torque, 333
 - 11-2. Torque and Angular Acceleration, 336
 - 11-3. Zero Torque and Static Equilibrium, 340
 - ~~11-4. Center of Mass and Balance, 347~~
 - 11-5. Dynamic Applications of Torque, 350
 - 11-6. Angular Momentum, 352
 - 11-7. Conservation of Angular Momentum, 355
 - 11-8. Rotational Work and Power, 360 [we didn't have any homework questions specifically from this section, but you should be familiar with the concepts]
 - ~~*11-9. The Vector Nature of Rotational Motion, 361~~

Physics in Perspective: Momentum: A Conserved Quantity, 376
12. Gravity, 378
 - 12-1. Newton's Law of Universal Gravitation, 379
 - 12-2. Gravitational Attraction of Spherical Bodies, 382
 - 12-3. Kepler's Laws of Orbital Motion, 387
 - ~~12-4. Gravitational Potential Energy, 394~~
 - ~~12-5. Energy Conservation, 397~~
 - ~~*12-6. Tides, 404~~

- 13. Oscillations About Equilibrium, 415
 - 13-1. Periodic Motion, 416
 - 13-2. Simple Harmonic Motion, 417
 - 13-3. Connections Between Uniform Circular Motion and Simple Harmonic Motion, 420
 - 13-4. The Period of a Mass on a Spring, 426
 - 13-5. Energy Conservation in Oscillatory Motion, 431
 - 13-6. The Pendulum, 433 (but not ~~The Physical Pendulum~~)
 - ~~13-7. Damped Oscillations, 439~~
 - 13-8. Driven Oscillations and Resonance, 440
- 14. Waves and Sound, 452
 - 14-1. Types of Waves, 453
 - 14-2. Waves on a String, 455
 - ~~*14-3. Harmonic Wave Functions, 458~~
 - 14-4. Sound Waves, 459
 - 14-5. Sound Intensity, 463
 - 14-6. The Doppler Effect, 468
 - 14-7. Superposition and Interference, 474
 - 14-8. Standing Waves, 478
 - 14-9. Beats, 485
- 15. Fluids, 499
 - 15-1. Density, 500
 - 15-2. Pressure, 500
 - 15-3. Static Equilibrium in Fluids: Pressure and Depth, 504
 - 15-4. Archimedes' Principle and Buoyancy, 509
 - 15-5. Applications of Archimedes' Principle, 511
 - 15-6. Fluid Flow and Continuity, 516
 - 15-7. Bernoulli's Equation, 518
 - 15-8. Applications of Bernoulli's Equation, 521
 - ~~*15-9. Viscosity and Surface Tension, 524~~