P207 Exam 3 Topics

Rotation of a Rigid Body (Chapter 12)
  On this exam you will not need to compute I.
  Torque (12.5)
  Rotational dynamics (12.6) \( \tau_{\text{ext}} = I \alpha \)
  Rotation about a fixed axis (12.7)
  Static equilibrium (12.8)
  Rolling motion (12.9): we didn’t discuss, but it really just means that \( v_{\text{cm}} = R \omega \)
  Vectors (12.10): right hand rule. I won’t ask you to work cross-products component by component
  Angular momentum (12.11)

Oscillations (Chapter 14)
  We covered 14.1 - 14.4 pretty thoroughly and you should know it.
  We did not discuss vertical oscillations (14.5); all you need to know is that the resonant frequency is still \( (k/m)^{1/2} \) just like a horizontal spring/mass.
  We did not discuss the pendulum (14.6) but you had one review problem and you should know this, including the Physical Pendulum.
  Damped oscillations (14.7)
  Driven oscillations and resonance (14.8)

Fluids and Elasticity (Chapter 15)
  Fluids (15.1)
  Pressure (15.2) including hydrostatic pressure, pressure in closed tubes
  Using pressure (15.3): you should know about barometers, hydraulics
  Buoyancy (15.4)
  Fluid dynamics (15.5)
    - continuity equation
    - Bernoulli’s equation and applications
  Elasticity (15.6): we saw Young’s modulus before, now we have bulk modulus

Traveling Waves (Chapter 20.1 – 20.6)
  Wave basics (20.1 – 20.3)
  Waves in 2-D and 3-D (20.4): we didn’t discuss, but you should know this.
  Sound and light (20.5): you should know this too but skip index of refraction
  Power, intensity, dB (20.6): you should know this

Superposition (Chapter 21.1 – 21.4)
  Principle of superposition (21.1)
  Standing waves (21.2)
  Transverse standing waves (21.3)
  Standing sound waves (21.4)
  Skip the rest of the chapter (although we had a HW problem related to interference, it will not be on the exam per se)