What is covered? This exam will focus on Chapters 5, 6, and 7. The topics that we covered are: the law of gravity, satellites, tides, momentum, impulse, conservation of momentum, kinetic energy, work, and conservation of energy.

What is the format of the test? The test will have 50 multiple choice questions. The questions will be slight variations on the problem set questions and the concept questions. Please review the problem set questions and make sure you understand the thinking behind answering the question. Also, the concept questions will be posted on the webpage for you to review. Don’t memorize the answers. It won’t help you on the test and will take up time that you could have spent on understanding the physics.

What equations should I know for the test?

**First Exam Material**

\[ \ddot{a} = \frac{\Delta v}{\Delta t} \] (average acceleration)

\[ \ddot{s} = \frac{d}{t} \] (average velocity)

\[ \ddot{v} = \frac{\Delta x}{\Delta t} \] (average velocity)

\[ \vec{F}_{net} = m\vec{a} \] (Newton’s 2nd Law)

\[ \vec{W} = m\vec{g} \] (weight)

\[ a = \frac{v^2}{r} \] (centripetal acceleration)

**Second Exam Material**

\[ F = G\frac{m_1m_2}{r^2} \] (law of gravity)

\[ KE = \frac{1}{2}mv^2 \] (kinetic energy)

\[ g = \frac{GM_E}{R_E^2} \] (acceleration at Earth’s surface)

\[ W = Fd \] (work)

\[ \vec{p} = m\vec{v} \] (linear momentum)

\[ W = \Delta KE \] (work)

\[ \vec{F}\Delta t = \Delta(m\vec{v}) \] (impulse)

What other stuff should I know for the test?

- Be able to apply conservation of momentum
- Be able to apply conservation of energy
- Know the inverse square law for the force of gravity

What should I do if I don’t understand a concept or I’m not sure the thinking behind the correct answer?

First, you could try rereading the section in the textbook. If that doesn’t help, don’t keep rereading. You need to either ask a classmate for help or to stop by my office. Be efficient with your time. It took the human race 200,000 years to figure out the material discussed this semester, but you only have a couple of months.