

PHYS 111 K

NOTES FOR THE THIRD HOUR EXAM

The third (and last) hour exam will be given in the classroom on Tuesday 17 Nov. You will have the entire period to complete the exam. All electronic devices must be stored out of sight prior to the start of the exam. You will not need nor be permitted the use of calculators.

The exam will cover all material done in class, assigned for reading and/or homework or posted to the course website dealing with Chapters 7 - 10 and those sections of Chapter 13 covered. I will provide a list of equations so that you will not need to memorize any formulae.

On the exam, you should be able to :

- Use Newton's third law to solve dynamics problems
- Describe and determine the angular displacement, angular velocity and angular acceleration of objects in rotational motion.
 - Determine linear velocity and acceleration from angular velocity and acceleration (and vice versa)
- Use the equations of universal gravity in accordance with Newton's Law to describe motion under a gravitational field.
- Derive relationships between period, velocity and force for various physical systems (such as planets orbiting stars).
- Solve problems involving rotational motion, including objects traveling in vertical circles.
- Apply definitions of impulse and momentum to describe physical situations.
- Appropriately apply the conservation of momentum to determine the properties of a system.
- Apply conservation of momentum to inelastic collisions.
- Apply the conservation of energy.
- Solve problems involving the conversion of energy from one form to one (or several) other forms.
- Solve problems involving elastic collisions.
- Use the principles and techniques of differential and integral calculus to describe and derive equations.