

EASTERN NAZARENE COLLEGE
PY 312 Applied Mechanics

Spring 2007

Study Guide Exam #2

Classical Mechanics, A. Douglas Davis, Chapters 5, 6, 7, and 11

You should be able to:

In-class part

1. State and explain Newton's Three Laws
2. State the relationship between force and potential energy and the relationship between potential energy and force 5.4.36 and 5.4.2
3. Define work 5.4.3
4. explain 6.6.15
5. Describe/explain the Coriolis force
6. Define/describe/explain central force
7. State the universal gravitational law
8. Define angular momentum 7.3.3
9. Define torque
10. State Newton Second Law in angular form 7.3.1
11. Explain what is meant by the effective potential energy and describe the motion of a particle moving in a effective potential along with the forbidden regions, turning points, and allowed regions
12. Explain what is meant by a fictitious force used when using a noninertial coordinate system
13. more in chapter 7
14. State the two conditions for equilibrium 11.2.1 and 11.2.4 (vector form)
15. explain method of joints and sections

Take-home part

1. Calculate the work in three dimensions
2. Know how to solve Newton's second law relationship in three dimensions
3. Use the concept of fictitious force to find the motion of a particle in a rotating system
4. Solve for the forces in a truss using the method of joints and sections