COCONINO COMMUNITY COLLEGE
COURSE OUTLINE

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Revised by:	Maxie Inigo	Date: January 13, 2003

Status: Permanent

A. Identification:

1. Subject Area: Physics
2. Course Number: PHY 161
3. Course Title: UNIVERSITY PHYSICS I
4. Credit Hrs: 4
5. Catalog Description:
   First semester calculus-based physics course designed for pre-engineering and pre-science majors. Mechanics, consisting of motion, statics and dynamics, work, power and energy, impulse, and momentum, will be studied. Prerequisite: MAT 220 General Education: Lab Sciences. Three lecture; three lab.

B. Course Goals:

To give students a general understanding of Physics laws, principles and concepts and to provide the students with laboratory opportunities.

GECC Course
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Student Outcomes list

C. Course Outcomes:

Students will:

1. explain the concepts of distance, velocity, and acceleration
2. calculate distance, velocity, and acceleration in two and three dimensions
3. quantitatively describe motion in two and three dimensions through vector analysis
4. participate in laboratory investigations, utilizing scientific methods and equipment
5. analyze force interactions
6. utilize the concept of conservation of energy and momentum to quantitatively analyze and solve problems
7. apply concepts of static equilibrium to problem solving
8. describe physical interactions in a planetary system
9. solve problems involving rotational motion

D. Course Outcomes Assessment:

Assessment will include:

1. Complete one lab report
2. Comprehensive Final Exam

E. Course Content:

Will include:

1. Statics
   a. equilibrium
   b. center of mass
   c. torque
2. Kinematics
   a. distance, velocity, acceleration
   b. projectile motion

c. rotational

3. Dynamics
   a. force
   b. Newton's laws
4. Energy
   a. work
   b. kinetic and potential energy
   c. conservation of energy
5. Momentum
   a. linear
   b. angular
   c. conservation of momentum
6. Gravitational and astronomical laws