SUNY College at Cortland
Physics Department
Physics 201 – Principles of Physics I

Course Information:
Credit Hours: 4 hrs
Semester/Year: Spring
Location: Bowers 136
Texts and Bibliographic Materials Required:
"*University Physics* " Volume I by Young and Freedman - 12th edition
Recommended extra reading: "*The Feynman Lectures on Physics* "
Resource Bibliography Upon which Course Is Based: same as above

Professor Information:
Name of Instructor/Professor: Dr. Moataz Emam
Phone: 607-753-2914
Office Location: Bowers 127 Lab Location: Bowers 128
Office Hours: MW 10:00-11:00am, T 11:00am-12:00pm and by appointment
E-mail: Moataz.emam@cortland.edu

Course Description: Fundamental principles of motion and dynamics using methods of calculus. Topics include motion in one, two, and three dimensions, mechanical equilibrium, momentum, energy, rotational motion and dynamics, periodic motion, gravitation, and conservation laws. Three lectures, one two-hour laboratory, and one recitation. Pre-requisites: MAT121 or MAT135 which may be taken concurrently.

Rationale/Goals/Objectives of the Course (Stated as Student Outcomes) and How They Reflect Specific Components of Cortland's Conceptual Framework:

Students majoring in Adolescence Education: Physics 7-12 will focus on acquiring knowledge and developing skills aligned with learning outcomes from the College's Conceptual Framework for Teacher Education and those established by the National Science Teachers Association. In particular, this course addresses Conceptual Framework Learning Outcome 2: Possess in-depth knowledge of the subject area to be taught; NSTA Standard I: Content; NSTA; Standard 2: Nature of Science; NSTA Standard 3: Inquiry; NSTA Standard 4: Issues; and NSTA Standard 7: Science in the Community.

Specifically, this course provides students with a detailed examination of the Newton's laws of mechanics. Methods of differential calculus and vector algebra in physics will be studied and emphasized. Students will explore the methods of energy and energy conservation in mechanics. Examples will be studied in one, two and three dimensional linear motion, planar rotational motion as well as oscillatory and simple harmonic motion. The lab experiments are designed to explore the theoretical notions studied in class. Methods of statistical analysis of experimental results will also be briefly discussed.

Evaluation of Student Performance

Student Grades will be based on the total points accumulated from the following components:

2 In-class Exams	15 percent each
Final Exam	20 percent
Homework	25 percent
Lab experiments	25 percent

We will roughly follow the book, covering, if time allows, the following chapters: 1 (Dimensional analysis and vectors review), 2 (except 2.6), 3 (except 3.5), 4, 5 (except 5.5), 6, 7, 8 (except 8.6), 9 (except 9.6), 10 (except 10.7), 12 (except 12.6, 12.7 and 12.8) and 13 (except 13.7 and 13.8).
However, be advised that your main source of material is the lecture, so attendance, although optional, is STRONGLY advised.

Disability Statement: SUNY Cortland is committed to upholding and maintaining all aspects of the federal Americans with Disabilities Act of 1990 (ADA) and Section 504 of the Rehabilitation Act of 1973. If you are a student with a disability and wish to request accommodations, please contact the Student Disability Services Office located in B-1, Van Hoesen Hall or call 753-2066 for an appointment. Because many accommodations require early planning, requests for accommodations should be made as soon as possible.

Academic Integrity Statement: "Students in this course are expected to abide by the guidelines on academic dishonesty that are found in chapter 340 of the SUNY Cortland College Handbook (http://www.cortland.edu/president/handbook.pdf). As stated in these guidelines, any instance of plagiarism, cheating on examinations or other forms of academic dishonesty will be punished, most likely by the receipt of a failing grade for this course and possible dismissal from the College. The primary means for enforcing the course's policy on academic dishonesty will be a Web-based plagiarism detection service to which you will be required to submit all of the papers you write for this course.