Algebra, Reality & the Rollercoaster
Math 90 and Physics 100
Spring 2003

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TEXTS: Conceptual Physics - Hewitt - 8th Edition
              Understanding Intermediate Algebra – Hirsch & Goldman -
              5th edition

CALCULATOR: A calculator will be required for this class. Further details
              will be provided in class.

TENTATIVE SCHEDULE:

  Week 1   Introductions & Course Overview
            Simplifying Expressions, Solving Equations, Word Problems,
            Concepts and Terminology about Mathematics and Physics
  Week 2   Position and Velocity Graphs, Uniform and Accelerated Motion,
            Solving Equations and Inequalities
  Week 3   Introduction to Functions and Graphs, Complex Motion Graphs
  Week 4   Lines, Slope, Systems of Linear Equations, Word Problems,
            Kinematics Word Problems
  Week 5   Operations on Polynomials, Solving Equations, Word Problems
            and Newton's Three Laws of Motion
  Week 6   More Newt and Introduction to Rational Expressions
  Week 7   Operations on Rational Expressions, Solving Equations, Word
            Problems and Mirrors (Seattle Center Lab – May 16 at 5:00 PM)
  Week 8   More Mirrors, Exponents and Radicals
  Week 9   Operations on Radicals, Solving Equations, Imaginary Numbers,
            The Conservation of Energy
  Week 10   Solving Quadratic Equations, Math Final (June 6? Or June 9?)
  Week 11   Presentations of Final Projects (May 11 and May 12)

<u>GOALS</u>:

1. Understanding the interconnectedness of mathematics and physics.
2. Understanding, interpreting, and communicating effectively orally and in written form.
3. Working cooperatively in groups: respecting others' ways of thinking, having confidence in your own knowledge, sharing information, pooling knowledge, and listening effectively.
4. Developing problem solving skills: recognizing the applicability of previously learned solutions to new problems, recognizing and applying reverse reasoning.
5. Recognizing that problems may have alternative solutions and that alternative techniques may be used to arrive at those solutions.
6. Developing algebraic skills.
7. Understanding physical concepts relating to motion and reflection.
8. Integrating algebra and physics with personal experiences.
9. Understanding and interpreting graphs.

<u>ASSESSMENT</u>:

<u>Mathematics:</u>

Math Quizzes: There will be seven math quizzes. These will all be announced in advance. The lowest two scores will be dropped.

Mid-Term in Math: This exam will cover the material of the first half of the quarter and is tentatively scheduled for week six.

Final Exam in Math: A two-hour comprehensive math exam will be given at the end of the quarter. The exam will be held on either June 6 or June 9.

<u>Physics:</u>

Weekly Worksheets: With the exception of the first week, each Thursday you will be given a worksheet with questions/problems that reflects what you'll be learning in the next week. The following Thursday there will be group discussions about the worksheet. You will turn in a rough draft at the beginning of class. If something thoughtful is written on each question then you will receive 2 of the 10 points for that worksheet. If not then you lose 2 points for that worksheet grade. Worksheets are due on Mondays (ten days after you first receive them).

Physics Labs: Lab experiments will be done in groups. Some lab reports will be the group's responsibility and others will be individual. Some labs will count toward your mathematics grade as well.

Math/Physics Combined Assessment:

Activities & Self Assessment: Included in this category are hands-on class activities and self-assessment activities.

Combined Tests: There will be two tests on math and physics (combined). These tests are tentatively scheduled for weeks three and eight.

Final Project: The final project will integrate algebra and physics. Groups will write a paper, and give a presentation to the class during finals week.

Students with Disabilities: If you require an accommodation for a disability please contact Services for Students with Disabilities, WDY 114. Telephone: 425-640-1320 Email: ssdmail@edcc.edu

INFORMATION ABOUT GRADING:

Homework: Generally, mathematics homework will be assigned every day. Answers to homework problems are usually to be found in the back of the text. The homework is not collected (and thus not graded), but will be discussed the following day.

Missed Tests, Labs or Other Graded Work: It is expected that you will take quizzes, tests and exams at the scheduled time. Make-up quizzes, tests or exams will not normally be given. If you miss a quiz or a combined test it will count as your lowest grade, which is dropped. If you miss the math midterm your final exam score will be weighted more heavily. If you miss one physics lab you will be able do a make-up lab at the end of the quarter. If you miss other graded work consult with your instructor about how your grade will be determined.

Withdrawal: The last day to officially withdraw from these classes is May 19. You should withdraw by this date if you are not passing and you wish to avoid receiving a failing grade.

Otherwise, if you do not complete these classes, the grade V may not be given, and the grade of incomplete is given only in unusual circumstances. If you believe your situation requires special consideration, be sure to talk to your instructor before the quarter is over.

Grades: Your grade for mathematics and your grade for physics will be calculated separately, so you may end up with different grades for each course. The charts below indicate how this will be done.

Calculation of Physics Grade:

Two combined tests, 100 points each	200 points
Weekly worksheets	100 points
Activities & self assessment	100 points
Lab work	200 points
Final project	200 points
Drop one test	-100 points
TOTAL POINTS FOR PHYS GRADE	700 points

Calculation of Mathematics Grade:

Two combined tests, 100 points each	200 points
Quiz score (based on the best 5 quizzes)	100 points
Math midterm	100 points
Final exam	200 points
Some activities & labs	70 points
Final project	30 points
Drop one test or drop quiz score	-100 points
TOTAL POINTS FOR MATH GRADE	600 points

In each case, your overall percentage of total points will be converted to a final grade according to the following chart.

94% - 100%	4.0
92% - 93%	3.8
90% - 91%	3.6
88% - 89%	3.4
86% - 87%	3.2
83% - 85%	3.0
81% - 82%	2.8
79% - 80%	2.6
76% - 78%	2.4
74% - 75%	2.2
72% - 73%	2.0
70% - 71%	1.7
67% - 69%	1.5
64% - 66%	1.0
62% - 63%	0.7
Below 62%	0.0