Three Rivers Community College
PHY K221 Calculus-Based Physics I
Course Outline
Fall 2010

Credit Hours: 4   August 26-December 16, 2010
Lecture: Tue & Thurs at 9:30-10:45 AM   Lab: Thursday at 11-1:45 PM

Instructor	eMail Addresses	Phone	Office Hours
Philip C. Ross, Ph.D.	**pross@trcc.commnet.edu** **philross29@msn.com**	**Home 860-443-1129** **Cell 860-705-4460**	**by appointment**

Course Description: This course will cover fundamental principles of mechanics, properties of matter, heat and simple harmonic motion.

Lecture Textbook (required): Physics for Scientists and Engineers, 4th edition, by Douglas C. Giancoli

Lab Manual: Lab Experimental Procedures provided by instructor

Graphing Calculator (required): same as Precalculus course (TI-83, TI-84, TI-89 or TI-Nspire)

Prerequisite/Co-requisite: MATH 254

Vista blackboard: http://my.commnet.edu/ for course information, grades and communication

Homework: Homework will be assigned, and is due at Monday's lecture*. Ongoing practice is an effective way to learn the material and prepare for the tests.* The total homework points are adjusted to be worth 10% of your total grade.

Lab Reports: You work with lab partners in the lab, but you must each prepare your own lab report, due at the beginning of the next lab period. Unexcused late lab reports will have 2 pts per week deducted (2 pts if turned in during the first week after it is due, 4 pts if turned in during the 2nd week, etc.). Each of the 13 lab reports is worth 10 points. The lab reports contribute a total of 130 points to your total grade.

Attendance: Attendance will be recorded. Attendance for scheduled tests is mandatory; make-up exams will be provided to the student if the absence is approved by the instructor.

Tests: The student is permitted two sheets of personal study notes and a graphing calculator during the test.

Grading Policy: *On all tests and homework problems, use the **GECCA** format (described on page 3) to show the details of each step in solving the problem.* This supporting work demonstrates understanding, reinforces learning, and may result in partial credit if your final result is incorrect.

Grade equivalents:

A	93-100	B	83-86	C	73-76	D	63-66
A-	90-92	B-	80-82	C-	70-72	D-	60-62
B+	87-89	C+	77-79	D+	67-69	F	59 or less

Grade Point Totals: *The four exams are worth 100 points each. The lab reports are worth 130 points. The homework is worth 60 points. Your average is determined by the sum of all of these, divided by 775.*

Questions? My office hours are Monday and Wednesday at 2:30-3:30 pm and Friday at 10 am. You can also phone or email me with questions or to schedule a meeting.

Disabilities: If you have a hidden or visible disability which may require special classroom or testing modifications or special accommodations, please see me as soon as possible.

Lecture Course Outline (subject to change)

Week	Topics (chapters)	
23-Aug	Measurements; Dimensional Analysis (ch 1)	Measurement/Graphing
30-Aug	Motion: Kinematics in One Dimension (ch 2)	Free Fall
6-Sep	Vectors (ch 3)	**No lab or lecture on September 9**
13-Sep	Kinematics in Two or Three Dimensions (ch 3)	Projectiles
20-Sep	**Test 1**; Dynamics: Newton's Laws of Motion (ch 4)	Force Equilibrium
27-Sep	Work and Energy (ch 7)	Newton's Law
4-Oct	Conservation of Energy; Power (ch 8)	Energy Conservation
11-Oct	Linear Momentum; Impulse; Collisions (ch 9)	Collisions
18-Oct	**Test 2;** Rotational Motion (ch 10)	Angular Acceleration
25-Oct	Rotational Dynamics (ch 10)	Torque
1-Nov	Fluids (ch 13)	Buoyancy
8-Nov	**Test 3**; Temperature and Thermal Expansion (ch 17)	**No lab or lecture on November 11**
15-Nov	Heat and the First Law of Thermodynamics (ch 19)	Specific Heat
22-Nov	**No class** (unless makeup class is needed on Nov 23)	**No lab or lecture on November 25**
29-Nov	Second Law of Thermodynamics (ch 20)	Latent Heat
6-Dec	Oscillations (ch 14)	Pendulum
13-Dec	**Review; Lecture/Lab Final exam**	**Lecture/Lab Final Exam**

GECCA

(*Use GECCA for all tests and homework problems*)

Given: If possible, draw a picture. List the variables and constraints provided in the problem. Identify the answer needed (your goal).

Equation: Write the equation(s) to be used to solve the problem. Include the units.

Conversions: Convert any given values needed so that all units are consistent with the equation.

Calculations: Work through the calculations

Answer: Write the final answer