Syllabus – Phys 103 – Fundamental Physics I – Fall 2015

Course Description (from Course Catalog):

Algebra- and trigonometry-based introduction to classical mechanics including the equations of motion, forces, energy, momentum, rotation, fluid dynamics, waves, and sound.

Meeting Time/Location: Section A – Trexler 372, 8:30-9:30
Section B – Trexler 372, 9:40-10:40

Contact Info:

Dr. Jonathan Cook
Office: Trexler 266A
Phone: 375-2570
E-mail: lcook@roanoke.edu

Office Hours: Monday 10:45-noon & 2:00-3:00, Tuesday 1:30-2:45, or by appointment

Required Text: Knight, Jones, and Field, College Physics 3rd Edition, ISBN-13: 978-0321879721

Grading: 10% Homework & Quizzes
20% Test 1
20% Test 2
25% Final Exam
25% Lab

Grade Scale:

A:	> 93		C:	73-77
A-:	90-93		C-:	70-73
B+:	87-90		D+:	67-70
B:	83-87		D:	63-67
B-:	80-83		D-:	60-63
C+:	77-80		F:	<60

Expected Number of Hours of Work Per Week: You should expect to spend *at least* 12 hours inside and outside of class each week on this course.

Lab:

The lab is required for this course. More information about the lab will be given during your lab time in the first full week of classes.

Learning outcomes:

Students should be able to

- Identify physical principles which govern the dynamics of a system and apply these principles to predict its behavior
- Setup and solve problems using mathematics involving various physical concepts
- Connect multiple concepts to solve physical systems

Attendance Policy:

Regular attendance to the lecture is highly encouraged. Lecture is the best place to ask questions and further your understanding of the different concepts covered in this course. While your attendance is not part of your grade, students who attend regularly typically score higher on homework assignments and tests than students who miss. You are responsible for all material from class that you missed. You are required to attend classes when tests are given.

Lab attendance is required for all labs. More detailed information about the lab attendance policy will be given in the lab syllabus. *If you do not complete all the labs, your final course grade will be lowered by one full letter.*

Tests and Final Exam:

Two tests and a final exam are given in this course. They test both conceptual understanding of the material as well as problem solving techniques using mathematics. Tests are given during class time and consist of short answer problems. You are required to show your work for all questions. The final exam has a similar format, but is comprehensive. You are required to be present on the day to take the test. If you must miss class on a test day, you need to make arrangements for a make-up **before** the test is given.

Homework:

Homework assignments will be posted weekly on Inquire, typically on Wednesday. You will turn the assignment the following week (Wednesday) at the beginning of class. No late homework will be accepted for credit.

Each homework assignment will be approximate 10 problems. Of these 10, only one (chosen at random) will be graded in detail. The rest will be graded for completion.

You are encouraged to collaborate with your classmates on the homework. You will quickly realize what you understand and do not understand when you try to explain it to someone else. With that said, the work you turn in should be your own understanding. While you may get a higher grade on the homework if you rely on your classmate's work, your exam grades will suffer. Instead, try to write your final solution by yourself while not meeting with a group.

Academic Integrity:

Students are expected to adhere to the policies in the "Academic Integrity at Roanoke College" Handbook. You are expected to be familiar with them. In particular, all tests that you turn in are to be your own work. The only approved electronic device for tests is a calculator (you may NOT use the calculator on your phone). Suspected failure to adhere to the policies in the Handbook will be reported without exception.

As stated previously, you may collaborate on homework assignments and in-class problems. These situations are more for developing skills and acquiring knowledge than evaluating your mastery of a topic (although there is still a component of evaluation in your homework assignments). Therefore, you may use any resource except a solution produced by someone else (which is not your own work). Do not search online for homework solutions.

Other Information:

Subject Tutoring is a CRLA Nationally Certified Program located on the lower-level of Fintel library in room 005. Subject Tutoring offers individual appointments in 30-minute intervals for Lab Sciences, Modern Languages, Math & CPSC, Social Sciences, and Business & Economics. Hours are Sunday - Thursday 4 p.m. - 9 p.m. For a list of tutorials or to make an appointment, go to www.roanoke.edu/tutoring.

The Office of Disability Support Services, located in the Goode-Pasfield Center for Learning and Teaching in Fintel Library, provides reasonable accommodations to students with identified disabilities. Reasonable accommodations are provided based on the diagnosed disability and the recommendations of the professional evaluator. In order to be considered for disability services, students must identify themselves to the Office of Disability Support Services. Students requesting accommodations are required to provide specific current documentation of their disabilities. Please contact Rick Robers, M.A., Coordinator of Disability Support Services, at 540-375-2247 or e-mail robers@roanoke.edu.

If you are on record with the College's Office of Disability Support Services as having academic or physical needs requiring accommodations, please schedule an appointment with Mr. Robers as soon as possible. You need to discuss your accommodations with him before they can be implemented. Also, please note that arrangements for extended time on exams, testing, and quizzes in a distraction-reduced environment must be made at least one week before every exam.

Schedule		
Class	Date	Topic
1	9/2	Chapter 1: Introduction
2	9/4	Chapter 2: 1D Motion
3	9/7	
4	9/9	Chapter 3: 2D Motion
5	9/11	
6	9/14	Chapter 4: Newton's Law
7	9/16	
8	9/18	
9	9/21	Chapter 5: Applying Newton's Laws
10	9/23	
11	9/25	
12	9/28	Chapter 6: Circular Motion & Gravity
13	9/30	
14	10/2	
15	10/5	**Test 1: Chapters 1-5**
16	10/7	Chapter 7: Rotational Motion
17	10/9	
18	10/12	
19	10/14	Chapter 8: Equilibrium and Elasticity
20	10/16	
		Fall Break
21	10/26	
22	10/28	Chapter 9: Momentum
23	10/30	
24	11/2	
25	11/4	Chapter 10: Energy and Work
26	11/6	
27	11/9	
28	11/11	
29	11/13	Chapter 13: Fluids
30	11/16	
31	11/18	**Test 2: Chapters 6-10**
32	11/20	
33	11/23	Chapter 14: Oscillations
		Thanksgiving Break
34	11/30	
35	12/2	Chapter 15: Traveling Waves
36	12/4	
37	12/7	Chapter 16: Standing Waves
38	12/9	
39	12/11	
Final Exam	12/16	**Section B 8:30-11:30**
	12/18	**Section A 8:30-11:30**