Syllabus for
PHY 102—General Physics II Lecture
3 Credit Hours
Spring 2008

I. COURSE DESCRIPTION

A continuation of PHY 101 Lecture. Includes electricity, magnetism, light and modern physics.
Prerequisite: PHY 101 Lecture
Corequisite: PHY 102 Lab.

II. COURSE GOALS

The purpose of this course is to provide a thorough understanding of the principles of electricity, magnetism, optics, elements of the special theory of relativity, quantum, atomic and nuclear physics, and to enable the student to learn to apply the concepts in other disciplines.

III. STUDENT LEARNING OUTCOMES FOR THIS COURSE

A. As a result of completing this course successfully the student will be able to do the following:
   1. State or explain technical terms and names of significant individuals in physics
      a. Define or identify a given term or name.
      b. Match a given statement with the appropriate term or name.
   2. Discuss basic concept of physics and to select from several choices the proper description of a given concept.
   3. Explain the basic laws of physics.
      a. Describe a given physical law.
      b. Write the mathematical formulation of a given law.
      c. Identify a particular law when expressed by a given mathematical formula.
   4. Apply the terms, concepts and basic laws of physics in solving typical problems.
   5. Approach the learning of a subject in a consistent and disciplined manner
      a. Attend class sessions regularly and punctually.
      b. Turn in homework assignments regularly and on time.
      c. Participate in group activities and class discussions.

B. Objectives for students in Teacher Preparation Programs

These course goals for the Teacher Preparation Program meet the competency-based requirements established by the Oklahoma Commission on Teacher Preparation. This course meets the following competencies: Subject Competencies (SC) 7.c.2. and 7.c.3.

This course is designed to help the student meet subject competencies numbers 7.c.2. and 7.c.3.

SC.7.c.2.: is able to teach with broad understanding of all content areas and understands the reaction between the sciences and process skills as it applies to Physical Science Content motion and force.

SC.3.c.3.: is able to teach with broad understanding of all content areas and understands the interaction between the sciences and process skills as it applies to Physical Science Content:transfer of energy.

IV. TEXTBOOKS AND OTHER LEARNING RESOURCES

A. Required Materials

Textbook

Raymond A. Serway, Jerry S. Faughn, Chris Vuille, Charles A. Bennet, "College Physics", 7th edition, Thomson Brooke/Cole, Belmont, CA 2006.

B. Other Materials

Scientific Calculator

V. POLICIES AND PROCEDURES

A. University Policies and Procedures

1. Attendance at each class or laboratory is mandatory at Oral Roberts University. Excessive absences can reduce a student's grade or deny credit for the course. Students who are late cannot sign the attendance sheet once it circulated.
2. Students taking a late exam because of an unauthorized absence are charged a late exam fee.
3. Students and faculty at Oral Roberts University must adhere to all laws addressing the ethical use of others' materials, whether it is in the form of print, video, multimedia, or computer software. By submitting an assignment in any form, the student gives permission for the assignment to be checked for plagiarism, either by submitting the work for electronic verification or by other means.
4. Final exams cannot be given before their scheduled times. Students need to check the final exam schedule before planning return flights or other events at the end of the semester.
5. Students are to be in compliance with University, school, and departmental policies regarding ePortfolio requirements. Students should consult the ePortfolio handbooks for requirements regarding general education and the students' majors.
    a. The penalty for not submitting electronically or for incorrectly submitting an ePortfolio artifact is a zero for that assignment.
    b. By submitting an assignment, the student gives permission for the assignment to be assessed electronically.

B. Course Policies and Procedures

1. Evaluation Procedures

The final grade is a composite result of performance in exams, quizzes, homework problems and class participation. The final exam constitutes approximately 25% of the final average, 25% of the final grade is based on 3 hour exams, 25% - on homework problems and 25% - on quizzes. The grading scale is as follows:

90 – 100	A	Excellent
80 - 89	B	Above Average
70 - 79	C	Average
60 - 69	D	Below Average
Less than 60	F	Fail

The first 5 absences (excused or unexcused) will result in no grade reduction. The numbers of absences allowed prior to grade reduction are designed to accommodate emergencies and illness. The final grade will be reduced by 2.5% if amount of missed classes will reach 25% of all total sessions (10 classes). Perfect attendance will result in 2.5% increase in final score.
You can also earn extra credit by doing special project and/or class participation. Students are responsible for keeping up with the rest of the class (even if they are absent), please, find out what we studied during the class you missed from another students.

Make-up assignments (for full credit) are given only in extremely unavoidable situations **upon prior arrangement with instructor** or with valid medical excuse; otherwise missed assignment will be graded with 25% penalty.

2. ePortfolio Requirement
   None.
3. Other Polices and Procedures
   a. Homework Problems
      Solutions for assigned problems from sections covered in class are due in the next class – don't fall behind! Come to class with any questions you have from the homework. Come see me regularly; don't wait until you get in trouble. If you do get into trouble, get help immediately – don't wait!! Problems solving is much more than merely substituting numbers for the symbols in a formula or fitting together the pieces of a jigsaw puzzle. Merely thumbing through the book until the student finds a formula that seems to fit or a worked-out example that resembles the problem is a waste of time and effort. Students should study before you tackling the problems. Problems enable students to find out whether or not they understand the assigned material. This is a good indicator of one's motivation, initiative, and reliability.
      Show all work for the full credit.
      Messy papers (non-trimmed, non-stapled, non-readable) will result in a lower grade.
      Late work will be assessed 20% per week penalty.
   b. Quizzes and Exams
      Short Quiz will be given every week after finishing the chapter. Exams will cover several Chapters. Final exam will be comprehensive. Partial credit applied. You could bring a formula sheet and submit it with your Quiz or Exam (handwritten, no copies, no work out problems). Illegal formula sheet will result in "0" score for the assignment.
      No calculator sharing! No cell phone!
      Show all work for the full credit.
      Messy papers will result in a lower grade.
   c. Tardiness
      Students are expected to be in class on time. Those who would be late by more than 15 minutes should not enter the class unless the instructor was informed of the possible tardiness in advance. Also, please, let me know in advance that you need to leave early. I will circulate an attendance sheet at the beginning of each class section. Students who are late cannot sign the attendance sheet once it is circulated.
   d. Chapters to be covered during a class period should be read before the class. There is a direct relationship between the amount of time you

invest in a course and how much you learn. In keeping with my goal to maximizing your learning, this course will require a significant amount of your time. Form study groups. Learn from your mistakes: examine graded work carefully to understand your errors

e. Courtesy
Please, turn off your cell phones.
No food in the classroom without valid medical reason.

Instructor may change the assignment schedule AT ANY TIME by verbal or written notification to the class.

Instructor: Dr. Elena Gregg
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Engineering/Physics Department
Admin. Secretary Kathy Wright
Office LRC 181 ext 6939

Lectures GC 1D23
Laboratory GC 1A18

VI. COURSE CALENDAR

Date	Topic	Lecture	Homework
1/10	**Chapter 15** Electrical Forces and Electrical Fields	**Q**: 4, 6, 12, 19	**P**: 1, 8, 18, 20, 29, 30, 36, 38, 42
1/15-19	**Chapter 16** Electrical Energy and capacitance	**Q**: 1, 7, 11, 12	**P**: 4, 6, 13, 14, 22, 27, 29, 30, 31, 43, 47, 49
1/22-26	**Chapter 17** Current and resistance	**Q**: 7, 11, 14	**P**: 3, 4, 9, 11, 17, 22, 24, 31, 33, 37
1/29-2/2	**Chapter 18** Direct Current Circuits **Exam 1: Ch 15 -18**	**Q**: 3, 5, 10	**P**: 4, 6, 18, 19, 32, 38
2/5 - 9	**Chapter 19** Magnetism	**Q**: 3, 5, 8, 16	**P**: 2, 5, 13, 15, 22, 29, 34, 37, 44, 47
2/12 -16	**Chapter 20** Induced Voltages and Inductance	**Q**: 2, 4, 6, 13	**P**: 2, 6, 8, 11, 18, 23, 29, 31, 32, 37, 43, 48.
2/19 -23	**Chapter 21** Alternating Current circuits and Electromagnetic waves **Exam 2: Ch. 19 -21**	**Q**: 4, 8, 15, 19.	**P**: 5, 9, 16, 19, 28, 35, 41, 44, 50, 54, 55
2/26-3/2	**Chapters 22,23** Reflection and Refraction of Light; Mirrors and Lenses	**Q**: 5, 14, 17 **Q**: 9, 10, 15	**P:1,** 9, 13, 24, 30, 35, 37 **P:** 3, 7, 8, 21, 27, 29

Date	Topic	Lecture	Homework
3/5 - 9	**Chapters 24, 25** Wave Optics; Optical Instruments **Exam 3: Ch. 22 -25**	**Q:** 1, 2, 5, 8, 18 **Q**: 3, 6, 9	**P:** 4, 9, 15, 20, 30, 35, 38, 46, 50 **P**: 3, 10, 19, 26, 33, 43
3/12 -16	**Chapter 26** Relativity	**Q**: 2, 4, 6, 11	**P**: 1, 3, 6, 17, 21, 28, 36
3/19 -23	**Spring Break**		
3/26-30	**Chapter 27** Quantum Physics	**Q**: 1, 2, 5, 15	**P**: 3, 10, 12, 15, 20, 23, 29, 36, 45
4/2 -6	**Chapter 28** Atomic Physics **Exam 3: Chapters 9 - 12**	**Q**: 1, 6, 8, 11, 15	**P**: 2, 3, 8, 12, 27, 34.
4/9 - 13	**Chapter 29** Nuclear Physics	**Q**: 1, 2, 11, 15	**P**: 1, 15, 19, 25, 31, 38, 47
4/16 - 20	**Chapter 30** Nuclear Energy and Elementary particles **Exam 4: Ch 26 - 30**	**Q**: 4, 7, 9, 14, 16	**P**: 2, 6, 10, 13, 17, 19.
4/23 -27	TBA		
4/30 – 5/4	**Final Examination**	**Chapters 15 - 30**	

Course Inventory for ORU's Student Learning Outcomes

PHY 102-General Physics II Lecture
Spring 2008

This course contributes to the ORU student learning outcomes as indicated below:
Significant Contribution – Addresses the outcome directly and includes targeted assessment.
Moderate Contribution – Addresses the outcome directly or indirectly and includes some assessment.
Minimal Contribution – Addresses the outcome indirectly and includes little or no assessment.
No Contribution – Does not address the outcome.

The Student Learning Glossary at http://ir.oru.edu/doc/glossary.pdf defines each outcome and each of the proficiencies/capacities.

OUTCOMES & Proficiencies/Capacities	Significant Contribution	Moderate Contribution	Minimal Contribution	No Contribution
1	**Outcome #1 – Spiritually Alive** Proficiencies/Capacities				
1A	Biblical knowledge			√	
1B	Sensitivity to the Holy Spirit			√	
1C	Evangelistic capability				√
1D	Ethical behavior			√	
2	**Outcome #2 – Intellectually Alert** Proficiencies/Capacities				
2A	Critical thinking	√			
2B	Information literacy		√		
2C	Global & historical perspectives		√		
2D	Aesthetic appreciation			√	
2E	Intellectual creativity	√			
3	**Outcome #3 – Physically Disciplined** Proficiencies/Capacities				
3A	Healthy lifestyle			√	
3B	Physically disciplined lifestyle			√	
4	**Outcome #4 – Socially Adept** Proficiencies/Capacities				
4A	Communication skills		√		
4B	Interpersonal skills			√	
4C	Appreciation of cultural & linguistic differences				√
4D	Responsible citizenship			√	
4E	Leadership capacity			√	