**General Physics – PHY 203 Spring 2016**

**MWF 2:00 – 2:50 Science 277**

**Ralph Oberly S 253, S 254 304-696-2757** [**oberly@marshall.edu**](mailto:oberly@marshall.edu)

**Office hours: MWF 11:00-11:40, TR 12:00-2:00 (or by appointment)**

**University Policies:** By enrolling in this course, you agree to the University Policies listed in the sources below. Please read the full text of each policy by going to [www.marshall.edu/academic-affairs](http://www.marshall.edu/academic-affairs) and clicking on “Marshall University Policies.” Or, you can access the policies directly by going to <http://www.marshall.edu/academic-affairs/?page_id=802> Academic Dishonesty/Excused Absence Policy for Undergraduates/Computing Services Acceptable Use/Inclement Weather/Dead Week/Students with Disabilities/Academic Forgiveness/Academic Probation and Suspension/Academic Rights and Responsibilities of Students/Affirmative Action/Sexual Harassment

**General Physics. 3 hours**

A course in general physics for all science majors with the exception of physics and engineering majors.

**Goals/Outcomes:**

1. A. Students will learn basic physical principles for the areas of physics covering electric charge, electrical fields, magnetic fields, magnetic poles, electric circuits, magnetism, electromagnetic waves, geometrical optics, optical instruments, physical optics, special relativity, particle properties, particle interactions, atoms and nuclei.

B. Students will be assigned readings from a textbook. Basic principles will be discussed in the classroom. Students will observe and analyze demonstrations in class when they are available. Students are expected to be attentive in the classroom and participate in the classroom discussion.

C. Students will be given exams that require the student to demonstrate their knowledge of the principles covered in the classroom, the assigned problems, and the reading assignments. These exams will require logical reasoning about the principles covered.

II. A. Students will learn logical problem solving techniques covering the material listed above. B. A homework problem list for each chapter of the text covered in class will be assigned. Each student is expected to attempt the solution of every assigned problem.

C. The student is expected to be proficient in logical problem solving techniques for the semester exams, the assigned textbook problems, and the handout problems.

**Required Textbook:**  College Physics, Etkina, Gentile, Heuvelen

**Course Requirements:** Students will be expected to complete:

Textbook and handout problems, and textbook conceptual questions as assigned.

Three semester exams – see schedule of assignments.

Comprehensive final exam – see schedule of assignments. Note that the final exam is double credit compared to each semester exam.

**Attendance:** Students are expected to attend all scheduled classes. Classroom discussion and demonstrations are vital for understanding the material covered in the course. See University Policies referred to above for the attendance policy.

**Syllabus for Physics 203 – Spring Semester 2016 – R. Oberly Page 2**

**Course Schedule:**

**Dates Chapter Assignments**

January 11, 13, 15 14 Electric Charge, Force and Energy

January 18 **No classes – Labor Day**

January 20, 22, 25 15 The Electric Field

January 27, 29, February 1 16 Direct-Current Circuits

February 3, 5,8 17 Magnetism

February 10, 12, 15 18 Electromagnetic Induction

February 19…………………………**Exam One on Chapters 14 through 17.**

February 17, 22, 24 21 Reflection and Refraction

February 26, 29, March 2 22 Mirrors and Lenses

March 4, 7, 9 23 Wave Optics

March 11, 14, 18 24 Electromagnetic Waves

March 16..…………………….**Exam Two on Chapters 18 through 23**

March 18 W day

March21 – 26………………….**Spring Break – No classes**

March 28, 30, April 1 25 Special Relativity

April 4, 6, 8 26 Quantum Optics

April 11, 13, 15 27 Atomic Physics

April 20 ………………….**Exam three on Chapters 24 through 26**

April 18, 22, 25 28 Nuclear Physics

April 27, 29 29 Particle Physics

**Monday, May 2, 12:45 – 2:45......Comprehensive Final Exam**

This schedule will be followed as nearly as possible. Problem and question assignments for each chapter will be given out in class. Students are expected to work all assigned problems and questions. Additional problems and questions will be given out in class, or through your MU email address. These will be graded and become part of your course grade. It is highly recommended that you stay current with the problem and reading assignments. Ask questions whenever necessary. There will be some time spent in class answering questions on problems.

**Course grade:** Your course grade will be made up from the three semester exams (100 points each), the collected problems (100 points), and the final exam (200 points).

**Electronic Devices:** Class time is for discussion of physical principle, demonstrations, and questions. Electronic devices – cell phones, pagers, etc. – should be turned off. During exams you should have a scientific pocket calculator and all other devices should be turned off and put away!