



Southside High School

An International Baccalaureate High School

6630 Frontage @ White Horse Rd--Greenville, 29605 SC-- 864-355-8700

"Creating a Common School Culture of Excellence" Fax 864-355-8798

Course Syllabus

School Year: 2012 to 2013

Instructor: Mr. Rogers

Course: AP Physics C Electricity and Magnetism

Room #: 134, 105

Phone: 877-8737

Email address: tkrogers@greenville.k12.sc.us

After school Extra-Help (Days/Time): Thurs and Fri. after school

General Course Description and Objectives:

AP Physics C Electricity and Magnetism: a calculus based, college level, physics class which covers electricity and magnetism for [the American College Board](http://www.collegeboard.org/apc) AP Physics C E&M. Students passing this test may receive college credit.

Course Outline

I. Unit Title: Charge & Electric Fields

Begin and End Dates: 08 – 22, 09 - 18

Chapters: 23

Specific Outcomes (Objectives/Standards):

Electrostatics

Unit Assessment: Test

II. Unit Title: Gauss's law

Begin and End Dates: 09 – 21, 10 - 02

Chapters: 24

Specific Outcomes (Objectives/Standards)

Electrostatics--Gauss's law

Unit Assessment: Test

III. Unit Title: Electric circuits
Begin and End Dates: 10 – 02, 10 - 19
Chapters: 27

Specific Outcomes (Objectives/Standards)

1. Current, resistance, power
2. Steady-state direct current circuits with batteries and resistors only

Unit Assessment: Test

IV. Unit Title: Electric Potential
Begin and End Dates: 10 – 20, 11 - 01
Chapters: 25

Specific Outcomes (Objectives/Standards)

Charge, field, and potential

Unit Assessment: Test

V. Unit Title: Electric circuits--Kirchoff's Law
Begin and End Dates: 11 – 02, 11 - 13
Chapters: 28

Specific Outcomes (Objectives/Standards)

Steady-state direct current circuits with batteries and resistors only. Capacitors in circuits

Unit Assessment: Test

VI. Unit Title: Magnetic Fields
Begin and End Dates: 11 – 16, 12 - 03
Chapters: 29

Specific Outcomes (Objectives/Standards)

1. Forces on moving charges in magnetic fields
2. Forces on current-carrying wires in magnetic fields

Unit Assessment: Test

VII. Unit Title: Sources of Magnetic Fields
Begin and End Dates: 12 – 04, 12 - 17
Chapters: 30-31

Specific Outcomes (Objectives/Standards)

1. Electromagnetic induction (including Faraday's law and Lenz's law)
2. Inductance (including LR and LC circuits) *
3. Maxwell's equations

Unit Assessment: Test

VIII. Unit Title: Physics Experiments
Begin and End Dates: 01 – 22, 02 - 26
Chapters: Mr. R's Web Pages

Specific Outcomes (Objectives/Standards)

Meet IB Physics Requirements

Unit Assessment: Test

IX. Unit Title: Atomic and nuclear physics
Begin and End Dates: 03 – 08, 03 - 13
Chapters: Mr. R's Web Pages

Specific Outcomes (Objectives/Standards)

Topic 7: Atomic and nuclear physics

Unit Assessment: Test

X. Unit Title: Communications
Begin and End Dates: 03 – 15, 03 - 19
Chapters: Mr. R's Web Pages

Specific Outcomes (Objectives/Standards)

Option F: Communications

Unit Assessment: Test

XI. Unit Title: Electromagnetic waves
Begin and End Dates: 02 – 22, 03 - 26
Chapters: Mr. R's Web Pages

Specific Outcomes (Objectives/Standards)

Option G: Electromagnetic waves

Unit Assessment: Test

XII. Unit Title: Review for AP Exam

Begin and End Dates: 03 - 22

Chapters: 05 - 03

Specific Outcomes (Objectives/Standards)

5 on AP Exam

Text:

Physics for Scientists and Engineers

by Raymond A. Serway, John W. Jewett

Materials Needed:

1. **A USB thumb drive** or other storage media for maintaining your electronic portfolio of physics assignments. We will attempt to be as close to a paperless classroom as possible.
2. **A set of dry erase markers.** You will frequently be working problems in class on a white board.
3. **A package of 3x5 cards:** Starting immediately, each student will, over the course of the year create a set of flash cards to use as a study aid.
4. **A graphing calculator**

Grading Policy and Assessments:

A = 93-100

B = 85-92

C = 77-84

D = 70-76

F = 0-69

Quarter:

Major Assessments:

Minor Assessments:

Minor assessments will consist of: Tests and major projects

Major assessments will consist of: Homework, participation, labs, minor projects

Attendance Policy:

School Policy: a student may not miss more than ten days from a year-long course. Those ten days include parent's notes, suspensions, unexcused absences, administrative, or late arrival notes. After ten absences, a doctor's note or administrative excuse must be provided or the student will not receive credit for the course.

What to do if you miss a class:

Excused Absence: Quizzes cannot be made up but will not count against a student with an excused absence. If you have an excused absence, you will be able to make up all other work. Provision for make-up work is the student's responsibility and must be done outside of class within five (5) consecutive school days after the student returns to school.

Unexcused Absence: Make up work and tests for unexcused absences will not be accepted.

Academic and Behavioral Expectation

- 1.If Mr. Rogers, a guest speaker, or a substitute is addressing the class or a test is in progress, students should be silent. Otherwise, students may discuss class related information in low level voices. The noise level should never rise to the point that it is hard to hear.
- 2.Remain seated except with teacher permission.
- 3.Come to class prepared and use your class time for learning the subject.
- 4.All equipment in the classroom is off limits except with teacher permission.
- 5.Commit yourself to passing the AP Exam.
- 6.Be respectful to others at all times, especially to guests and visitors.

