Southside High School
An International Baccalaureate High School
6630 Frontage @ White Horse Rd--Greenville, 29605 SC-- 864-355-8700
Celebrating Diversity. United in Learning. Fax 864-355-8798

Course Syllabus

School Year: **2013-2014**
Instructor: Mr. Rogers
Course: **AP Physics C Mechanics**
Room #: **134, 105**
Phone: **877-8737**
Email address: **tkrogers@greenville.k12.sc.us**
After school Extra-Help (Days/Time): **Mon., Thurs, Fri.**

General Course Description and Objectives:

AP Physics Mechanics C: a college level calculus based physics course dealing with Newtonian mechanics.

Course Outline

I. **Unit Title:** Kinematics
Begin and End Dates: 8-22 to 09-06
Chapters: 2

Specific Outcomes (Objectives/Standards):
Motion in one dimension

Unit Assessment: Test

II. **Unit Title:** Vectors
Begin and End Dates: 09 - 07 to 09 - 18
Chapters: 3

Specific Outcomes (Objectives/Standards)
vector algebra, components of vectors

Unit Assessment: Test

III. Unit Title: Projectile Motion
Begin and End Dates: 09 - 21 to 10 - 02
Chapters: 4

Specific Outcomes (Objectives/Standards)
Motion in two dimensions including projectile motion

Unit Assessment: Test

IV. Unit Title: Newton's Laws
Begin and End Dates: 10 - 02 to 10 - 23
Chapters: 5

Specific Outcomes (Objectives/Standards)
1.Static equilibrium (first law)
2.Dynamics of single particle (2nd law)
3.Systems of two or more bodies (3rd law)

Unit Assessment: Test

V. Unit Title: Friction
Begin and End Dates: 10 - 26 to 11 - 06
Chapters: 5

Specific Outcomes (Objectives/Standards)
Newton's laws of motion (friction)

Unit Assessment: Test

VI. Unit Title: Mechanical Energy
Begin and End Dates: 11 - 09 to 12 - 04
Chapters: 7 and 8

Specific Outcomes (Objectives/Standards)
C. Work, energy, power
F. Oscillations and gravitation
1.Simple harmonic motion
2.Mass on a spring
3.Pendulum and other oscillations

VII. Unit Title: Linear Momentum
Begin and End Dates: 12 – 07, 12 - 18

Chapters: 9

Specific Outcomes (Objectives/Standards)

D. Systems of particles, linear momentum

1. Center of mass
2. Impulse and momentum
3. Conservation of linear momentum, collisions

Unit Assessment: Test

VIII. Unit Title: Gravity
Begin and End Dates: 01 – 20, 02 - 02
Chapters: 12

Specific Outcomes (Objectives/Standards)

F. Oscillations and gravitation
4. Newton's law of gravity
5.Orbits of planets and satellites
a. Circular
b. General

Unit Assessment: Test

IX. Unit Title: Circular Motion
Begin and End Dates: 02 – 03, 02 - 10
Chapters:

Specific Outcomes (Objectives/Standards)

E. Circular motion and rotation
1. Uniform circular motion

Unit Assessment: Test

X. Unit Title: Statics
Begin and End Dates: 02 – 11, 02 - 18
Chapters: 12

Specific Outcomes (Objectives/Standards)

E. Circular motion and rotation
2. Torque and rotational statics

Unit Assessment: Test

XI. Unit Title: Rotation

Begin and End Dates: 02 – 19,
Chapters: 10 & 11, 03 - 19

Specific Outcomes (Objectives/Standards)
E. Circular motion and rotation
3. Rotational kinematics and dynamics
4. Angular momentum and its conservation

Unit Assessment: Test

XII. Unit Title: IB Energy Production
Begin and End Dates: 02 – 03, 05 - 03
Chapters: internet

Specific Outcomes (Objectives/Standards)
Topic 8: Energy, power and climate change

Unit Assessment: Test

XIII. Unit Title:
Begin and End Dates: 03 – 22, 05 - 03
Chapters:

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:

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

Major assessments will consist of: Tests and major projects

This course ___ is _x__ is not an EOCEP Course. The S.C. State Department of Education mandates that an EOC exam counts as 20% of the yearly grade.

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.