

**Starr's Mill High School**  
193 Panther Path, Fayetteville, GA 30215  
Office: 770-486-2710

**AP Physics C Mechanics 2016-2017**  
Instructor: Nicholas Gillies  
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Course Website: <http://gilliesphysics.weebly.com>

**Textbook Used:** **Physics for Scientists and Engineers**, Tipler and Mosca; Openstax College Physics

**Supplementary Texts or Special Materials:** Scientific Calculator with log, scientific notation and trig functions (Available at most office supplies and discount stores), 3-ring binder, Loose-leaf notebook, quad-ruled composition notebook (lab portfolio), and a pencil. Additional practice is available through AP Physics workbooks and online resources listed on the course website.

**Course Description/Student Achievement Targets:** AP Physics is a physical science laboratory course describing the physical laws governing the universe. The course involves a description of various types of motion, forces, energy, for both linear and rotational motion. Physics concepts will be further developed with the use of algebra, trigonometry, and calculus skills. Additionally, extensive laboratory research is conducted to reinforce the concepts studied. The course of study is designed to prepare the student to take the AP Physics C Mechanics exam.

**AP Physics Exam:** The AP Physics C Mechanics exam consists of two parts: a 35 question multiple-choice section and a free response section that contains 3 questions. Students are provided with a reference sheet and allowed the use of a calculator during the entire exam. However, if you do not understand the equations and how they work, the hunt and peck method will not be useful for you. The AP Physics C Mechanics Exam is designed to evaluate the depth of your conceptual understanding and application of physics concepts.

**Course Outline and Content:**

- One Dimensional Kinematics
- Vectors and Two Dimensional Kinematics
- Dynamics: Newton's Laws
- Work and Energy
- Linear Momentum
- Oscillations and Simple Harmonic Motion
- Uniform Circular Motion and Gravitation
- Torque and Static Equilibrium
- Rotational Kinematics & Dynamics

**Course Objectives can be found on the AP Central Physics C Mechanics website.**

## **Evaluation:**

### **Course Average (80% of final grade)**

- |                                       |     |
|---------------------------------------|-----|
| • Practice (Classwork/ Homework)      | 15% |
| • Lab reports and assignments         | 25% |
| • Assessments within a unit (quizzes) | 15% |
| • Summative Assessments               | 45% |

### **Final Exam (20% of final grade)**

## **Summative Assessments**

**Summative Assessments will occur once every three weeks on Thursdays unless otherwise announced. Assessments may cover multiple units or partial units. Summative assessment scores will replace quiz scores from the unit if the summative assessment score is higher.**

## **Lab Portfolio**

Hands on inquiry-based labs will be utilized throughout the year to reinforce the course objectives. All students are required to maintain a lab portfolio separate from your notebook. The quad-ruled composition notebook will serve as your lab portfolio. All lab work must be entered into the lab portfolio. In addition to the 12 inquiry based labs, we will also complete some quicker labs that will be completed within one class period or less. Inquiry based labs will require students to answer a question, such as, “How does one find the initial velocity of a horizontally launched projectile?” Students will be provided the materials and must design an experiment to gather data, organize the data, and analyze the data to form a conclusion. Some labs will cover concepts already covered in class, while others will introduce you to a new topic and get you thinking.

## **Grades Reports:**

Final grades are awarded at the end of second semester and a report card will be issued. It is the responsibility of the student and parent to monitor progress via Infinite Campus - grades are updated for this class in a timely manner. If you have concerns about your child’s progress please schedule a conference by contacting your child’s counselor.

## **Classroom Rules and Discipline Procedures:**

### **Rules:**

1. Be on time for class.
2. Be respectful of the teacher, and other students.
3. Be prepared for class.

**Academic Dishonesty will not be tolerated.** Academic Dishonesty includes copying another student’s homework, plagiarism, forging a parent signature, or cheating in any way on quizzes, tests, or exams. Plagiarism is described in the Student Code of Conduct as: “...a deliberate attempt on the part of a student to pass off as his or her own the writing or ideas of another person (student, parent, published or unpublished author, et al). This type of plagiarism generally consists of the straight copying or slight paraphrasing of a source that a student attempts to conceal.” The consequences for academic dishonesty are a grade of zero recorded for that assignment, disciplinary referral sent to an administrator, and parent notification.

**Make-up Work:**

- It is the student's responsibility to make arrangements for make-up work. These arrangements should be made at a time that does not disrupt instructional time. Make-up work will only be provided upon official notification of an excused absence.
- If a student receives an assignment but is absent on the day it is due then the assignment should be submitted immediately upon their return or it will be considered late.
- It is essential that students are present on lab days. Depending on the lab, availability of materials, and the number of students that are absent a make-up session may or may not be offered. An alternate assignment may also be substituted for that lab grade.

**Please keep in mind the following:**

***ALL MAKE-UP WORK MUST BE COMPLETED WITHIN FIVE SCHOOL DAYS AFTER THE STUDENT RETURNS. ALL MAKE-UP TESTS AND QUIZZES WILL BE SCHEDULED AT THE TEACHER'S CONVENIENCE WITH THE STUDENT HAVING AT LEAST 24-HOURS NOTICE. FIELD TRIP ABSENCES ONLY GET ONE DAY TO MAKE-UP THE WORK.***

Assignments will be assessed a penalty of 10% per school day late. Should you miss an assignment due to an excused absence you will have five school days to submit the work. After five days the assignment will be considered "late". Should you miss submitting an assignment due to a school sponsored field trip you will have one school day to submit the work.

**Lab Equipment policy:**

Students are responsible for checking off equipment at the beginning of lab and reporting missing equipment.

**To the parents:**

Please e-mail me at [gillies.nicholas@mail.fcboe.org](mailto:gillies.nicholas@mail.fcboe.org) once you have read through the syllabus. If you have any questions include those in your e-mail and I will respond in a timely manner.

### **Course Syllabus Acknowledgement Form**

By signing below I acknowledge the following:

- I have read and understand all of the objectives, requirements, and expectations outlined in the course syllabus for Mr. Gillies's AP Physics C Mechanics course.
- I may contact Mr. Gillies at Starr's Mill High School if I have any questions or concerns.
- This syllabus is subject to change at the teacher's discretion in order to meet the needs, interests, and abilities of students.

Student's Name (please print): \_\_\_\_\_ Class \_\_\_\_\_  
Period: \_\_\_\_\_

Student Signature \_\_\_\_\_ Date: \_\_\_\_\_

Parent's Name (please print): \_\_\_\_\_

Phone: \_\_\_\_\_

Parent/Guardian Signature \_\_\_\_\_ Date: \_\_\_\_\_

E-mail: \_\_\_\_\_