Welcome to physics! By choosing to be in physics, you have made a decision to enrich your understanding and appreciation of our physical world. I have very high expectations for everyone in this class. The only way that you will not succeed in this class is if you do not put forth your best effort.

Course Description
Physics is defined as, “the branch of science concerned with the nature, properties, and interactions of matter and energy.” The study of physics seeks to answer our most basic questions about our world and the phenomena that surround us. The Physics curriculum continues students’ investigations of the physical sciences. The course is designed to provide students with the necessary knowledge and skills in physics. Physics extends the physical sciences to more abstract concepts including interactions of matter and energy, velocity, acceleration, forces, energy, momentum, and charge. These concepts are investigated through laboratory experiences and fieldwork designed for students to develop appropriate knowledge and skills in science as inquiry.

Course Topics and Standards

<table>
<thead>
<tr>
<th>Unit of Study</th>
<th>Topics</th>
<th>Chapter(s)</th>
<th>Weeks</th>
<th>GSE</th>
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<tr>
<td>1: Characteristics of Science</td>
<td>Lab Safety, Modeling Physics Skills</td>
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<tr>
<td>2: 1 Dimensional Motion</td>
<td>1-Dimensional Motion: Relationship between position, velocity, acceleration, and time</td>
<td>2, 3</td>
<td>2</td>
<td>SP1: a, b, c</td>
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<tr>
<td>3: Forces and Motion</td>
<td>Newton’s Laws: Relationship between forces and motion</td>
<td>4, 5</td>
<td>4</td>
<td>SP2: a, b, c</td>
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<tr>
<td>4: 2-Dimensional Motion</td>
<td>2D Resultant Displacement, Resultant Velocity, and Projectile Motion</td>
<td>4</td>
<td>4</td>
<td>SP1: c, d</td>
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<tr>
<td>5: Circular Motion</td>
<td>Circular Motion: Centripetal Acceleration and Centripetal Force, Universal Gravity</td>
<td>9</td>
<td>1.5</td>
<td>SP2: d, e</td>
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<tr>
<td>6: Work and Energy</td>
<td>Conservation of Energy and the Work Energy Theorem, and Power</td>
<td>6</td>
<td>2</td>
<td>SP3: a, b, c</td>
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<tr>
<td>7: Momentum and Impulse</td>
<td>Momentum and Impulse, Conservation of Momentum, Collisions, and Explosions</td>
<td>7</td>
<td>3</td>
<td>SP3: b, d</td>
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<tr>
<td><strong>End of Semester 1</strong></td>
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<td>8: Electrostatics</td>
<td>Static Electricity and Electric Force</td>
<td>19, 20</td>
<td>2</td>
<td>SP5: a, b, c</td>
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<tr>
<td>9: Circuits</td>
<td>Current Electricity: relationship between potential difference, current, and resistance in a DC circuit and equivalent resistance in series and parallel circuits.</td>
<td>20, 21</td>
<td>3</td>
<td>SP5: d</td>
</tr>
<tr>
<td>10: Magnetism</td>
<td>Magnetism and the transfer of mechanical energy in to electrical energy</td>
<td>22, 23</td>
<td>2</td>
<td>SP5: e</td>
</tr>
<tr>
<td>11: Mechanical Waves</td>
<td>Production and Energy Transfer of Waves</td>
<td>13, 14</td>
<td>2</td>
<td>SP4: a, b, c</td>
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<tr>
<td>12: Light and Optics</td>
<td>Electromagnetic Waves Reflection, Refraction, and Diffraction Principal of Superposition</td>
<td>15, 16, 17, 18</td>
<td>3</td>
<td>SP4: a, b, d, e, f, g</td>
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Outcome Expectations

At the end of this course students should be able to:

1. Use appropriate scientific tools to observe, record, organize, analyze, interpret, write, and present the results of scientific investigations clearly and accurately.
2. Measure, calculate, analyze, and explain the relationships between forces, mass, gravity, and motion of objects; including objects in a state of static equilibrium.
3. Evaluate and explain the significance of energy in understanding the structure of matter and the universe as it relates to energies of fusion and fission.
4. Evaluate and explain the forms transformations and conservation of energy using the components of work-energy theorem, momentum, work, and power.
5. Determine the behavior of waves and processes involved in energy transfer of waves including electromagnetic waves.
6. Describe the transformations between mechanical, electrical, and magnetic energies.
7. Evaluate the relationships between electrical and magnetic forces.

Supplementary Materials

Notebook – a three ring binder that will contain all work done in this class. Students will also need a set of dividers to create the following sections: Handouts, Study Guides, Quizzes/Tests, Homework, and Labs. Students are expected to keep a neat and organized notebook.

Calculator – students should have their own calculator

Physics textbook – bring your textbook to class each day.

Writing utensil and notebook paper.

Lost Textbooks: Fulton County Board of Education policy says that if a student loses a textbook, replacement cost must be paid before another can be issued or credit given for the course. The cost of replacement of the textbook Pearson’s Physics is $97.97.

Grading

Fulton County Grading Policy:

Grades will be calculated based on the following:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A</td>
<td>90-100</td>
</tr>
<tr>
<td>B</td>
<td>80-89</td>
</tr>
<tr>
<td>C</td>
<td>70-79</td>
</tr>
<tr>
<td>F</td>
<td>below 70</td>
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Summative 40%
Formative 40%
Final Exam 20%

Unit Tests: One test will be given at the end of each unit taught in class and will count as a summative grade.

Formal Labs: One formal lab report is required each semester. Half of the grade will be based on the lab sheet and calculations, which may be completed as a lab group. The other half will be based on the typed lab report, which is an individual assignment. The formal lab grade will be counted as a summative.

Informal Labs: There will be a few informal labs each unit, which will be completed in groups of two or three students. While the labs will be done in groups questions and lab sheets are to be completed individually. Informal Labs will be included in the formative category.
**Homework:** Homework assignments will include small practice problem sets given on a regular basis and online unit homework assignments in mastering physics. Homework will count as a formative grade.

**Quizzes:** Several quizzes will be given during the course of the year to make sure that students have grasped concepts or memorized critical information. Quizzes will count as a formative grade.

**Final Exam:** A cumulative final exam will be given at the end of the semester.

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**Assignment Due Dates**

All assigned work is due at the beginning of class on the assigned due date. Any late assignment will be assessed a 10 point penalty. It is up to the teacher’s discretion to decide whether to accept the original assignment or require an alternative assignment for late work.

**Make up Work**

Make up work will be allowed without penalty in the case of an excused absence or tardy. Students have five school days to make up work in case of absences. Tests must be made up before or after school by appointment only, and students are responsible for transportation home after the tests. Most tests take 50 minutes to complete. If a student has an excused absence on the day homework is due, the homework must be turned in at the beginning of class on the first day of return. Students who miss labs are required to make up the lab before or after school.

**Recovery Policy**

*For students whose cumulative average is a 79% or below*

Students who are struggling in any class at Centennial have the opportunity to recover from a low cumulative average. First the student must initiate a conversation with their teacher about their grade. Then the student must turn in ALL missing assignments or alternatives to the missing assignments as determined by the teacher. Ten points will be taken off any late work. If the student’s cumulative average is still below an 80%, the student will meet with the teacher to discuss which assessments they would like to retake. The student must come in for a help session with the teacher before they are able to reassess. The reassessment assignment will be determined by the teacher and assessed with a maximum score of a 100%. If the student’s grade is still below an 80% the student can repeat this process. All recovery work must be completed within the current six week grading period and 10 days before the end of the semester.

**Honor Code**

As a community that values academic honesty and seeks to provide the highest levels of learning for students, the Centennial administration, faculty, parents, and students do not tolerate cheating.

As stated in Fulton County Board of Education Policy, cheating includes:

- Copying or borrowing from another source and submitting it as one’s own work – including plagiarizing sources from the internet
- Seeking or accepting unauthorized assistance from anyone on tests, projects, or other assignments
- Providing or receiving test questions in advance without permission
- Working collaboratively with other students when individual work is expected – including homework
• Other offenses as determined by administration

Consequences for copying or providing answers on an assignment which should have been completed by an individual student:
  First offense – zero on the assignment; teacher requires assignment completion for 70%; assignments not redone will remain a zero
  Second offense – zero on the assignment; parent notification; teacher requires assignment completion for 50%; assignments not redone will remain a zero
  Third and further offenses – zero on the assignment; parent notification; disciplinary referral to administrator; teacher requires assignment completion for 50%; assignments not redone will remain a zero

Consequences for plagiarism on a research paper or project; receiving or giving answers during a test or quiz:
  First offense – zero on the paper, project, or test; parent notification; teacher requires the original or an alternate assignment to be completed for 50%; time allowed will be half the original time assigned; assignments not redone will remain a zero
  Second and further offenses – zero on the paper, project, or test; parent notification; disciplinary referral to administrator; dismissal from leadership positions; exclusion or dismissal from honor societies; teacher requires the original or an alternate assignment to be completed for 50%; time allowed will be half the original time allowed; assignments not redone will remain a zero

The following violations shall result in immediate administrative referral and exclusion or expulsion from all honor societies: cheating on a final exam; altering or forging grades, gradebooks, progress reports, report cards, or academic records; fabricating data or signatures; theft of a test or other school resources. Students who commit an honor code violation could also lose leadership positions in clubs or organizations.

Consequences will be applied if cheating occurs on any work submitted by a Centennial student in an event, competition, or contest in which he represents the school system.

Additional possible consequences may include exclusion from interscholastic activities and extracurricular activities, as determined by the administrator.

Laboratories
No horseplay allowed in lab! The instructor reserves the right to remove any student that is a safety hazard from the lab. If a student is removed from the lab, the student will receive a zero for the lab day. No student may participate in lab without passing the safety quiz and turning in a safety contract signed by the student and their parent or guardian. If a student is not allowed to participate in a lab for this reason, he/she will receive a zero for that lab.

Student Responsibilities
- The student is responsible for completing all assignments, turning them in on time, and participating in all discussions and problem solving sessions.
- If the student is having trouble, it is the student’s responsibility to seek help during office hours.
- In case of absence, it is the student’s responsibility to find out what work, assignments, and notes he/she missed. The book does not always cover everything that is taught in class!
- Every student is required to bring a scientific calculator, writing utensil, and paper to class each day.
- Physics is a subject that builds on itself. Please keep up with each topic, or you will fall farther behind.

**Classroom Rules**

1. Follow all School Rules (see student handbook)
2. Respect others: if someone else is addressing the class, be quiet and listen
3. Come to class on time
4. No littering
5. No leaving the room without permission.

The instructor reserves the right to keep students for personal detention after school from 3:45 until 4:15 for failure to follow rules.

By signing below, I am indicating that I have read and understand the syllabus, and will be accountable for the information and guidelines therein.

Student Name (please print): _________________________________________________

Student Signature: _____________________________________ Date_______________

I have looked over the expectations for my child and I agree to work in partnership with Mr. Davis to ensure my child’s academic success. I will contact you should I have any questions or concerns throughout the semester. I understand that my child is responsible for adhering to these rules and procedures.

Parent/Guardian Name (please print)__________________________________________

Parent E-mail ____________________________________________________________

Daytime Number ________________________ Evening Number _____________________

Preferred Method of Contact ________________________________________________

Parent Signature: _______________________________________ Date_______________