



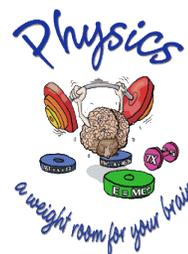
Honors Physics

Syllabus

Mr. Webber

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www.Physics-is-Phun.org/home



Course Description

You can't play a game if you don't know the rules, and the more you know the rules the more you enjoy the game. Physics is the study of nature's "rules" – the rules and laws governing the universe in which you are a part. So, to learn physics is to learn about ourselves and the arena of physical and natural laws that govern all aspects of our lives, from the atoms within our cells to the motions of galaxies and the energies in distant quasars!

Honors Physics 1 examines, in depth, topics in Classical Mechanics, Electromagnetism, and physics. My goal is not to "teach to the test;" rather, it is to teach the subject and cognitive skills that go along with it. When striving for that goal, testing becomes secondary and a natural extension of the learning process.

This course will also teach you to become critical thinkers and develop analytical reasoning that will give you problem-solving skills that apply across all disciplines. To that end, an inquiry-based instructional environment is utilized, one in which the traditional practice of "I do-we do-you do" is reversed. There will be many practice problems, assessments, and homework assignments – it is imperative that you complete all work to the best of your ability. Physics is learned by doing, not by watching.

Cell Phone Policy

It is St. Johns Classical Academy's policy that cell phones are to be turned off and out-of-sight during the school day (including lunch) and in the building before and after school. Earbuds may only be worn before and after school, outside of the building, with one only one ear covered. This is for your safety and for the safety of others.

Major Units of Study

Characteristics of Science, Motion, Forces, Work and Energy, Heat and Thermodynamics, Waves, Electricity, Magnetism, modern and atomic physics

Materials

Textbook: "Physics" by Serway, Raymond and Faughn, Jerry. Houghton Mifflin Harcourt Publishing Company. A class set is available.

Student Supply Information: Notebook and binder, pencil (mechanical serves best), calculator (scientific)

Grading

Participation: 10% Formative Assessments: 20% Lab/Projects: 20% Summative Assessments: 50%

For a formative assessment, each question/problem is worth 10 points. All work must be shown. In general, the following rubric is used:

- Solution is completely wrong, but an attempt was made with work shown: 2-4 points
- The physics used is correct but with a math error: 8 points
- Answer provided with no work (correct): 5 points
- Answer provided with no work (incorrect): 0 points
- Question or problem left blank: 0 points

Summative assessments (quizzes and tests) are often a combination of multiple choice, short answer, and problems, worth 1-2 points each.

In following with St. Johns Classical Academy's guidelines, grades will be assigned as follows:

A: 100-90 B: 89-80 C: 79-70 D: 69-60 F: 59-0

Attendance and Tardies

- As with any educational endeavor, attendance, participation, and involvement are essential to the learning process. Your comprehension and understanding depends on you being here.
- You are expected to be in your seat and ready to begin when the bell rings. If not, you will be marked absent. Three absences will result in disciplinary action.

Honors Physics Late and Missed Work

- Work is expected to be turned in on the due date. You will have class time to work on formative assessments, and they are often due at the beginning of class the following day. Late work will be reduced to 50% of the grade earned. No work will be accepted after a unit test and will result in a 0 in the gradebook.
- If you are absent, it is your responsibility to reach out to either the instructor or a colleague for any missed notes or assignments.
- If you miss a laboratory exercise with an excused absence, you may be exempted from the work (to be determined by the instructor).
- The Student Handbook outlines the policies regarding excused absences and make-up work. Communication and transparency with me is very important.
- If you have an excused absence and need to make up a test or quiz, it is by appointment only outside of class.

Bathroom Passes

- Use the bathroom before coming to class.
- To be excused, I must sign your planner.
- When leaving class, you must leave your cell phone with the instructor.

Food and Drink

- In accordance with Florida Law, no food, gum, or drink is allowed in a lab room.
- Any water bottles or other containers must remain closed at all times.

General Classroom Guidelines

- We practice and expect respect at all times – to our teacher, our classmates, and ourselves.
- We come to class prepared and excited to learn.
- We appreciate the value of education.
- We work to maintain a positive learning environment.
- We strive to do our best.
- We believe in academic integrity.
- We will keep our classroom and supplies neat.

General Classroom Procedures

- We arrive to class on time, enter in a respectful way, and begin any bell work.
- We raise our hands to be recognized.
- We do not leave our seats unless given permission.
- We do not leave our trash on the floor. Trash is to be thrown out at the end of class.
- We do not eat, drink, or chew gum in this classroom.
- No cell phones or tablets!

General Classroom Policies

- Work is to be turned in on the due date. Late work is subject to a 50% penalty.
- No work will be accepted after the unit test.
- Any act of cheating results in a grade of 0.
- Do not arrive late for class.
- Behavior that is not compliant with the student handbook will be addressed by the procedures outlined in the handbook.

Year-At-A-Glance

1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
<p><u>Unit 1: Nature of Science</u> A. Safety and Scientific Methods B. Measurements in Experiments C. The Language of Physics (EMBEDDED THROUGHOUT THE YEAR)</p> <p><u>Unit 2: Motion in One Dimension</u> A. Introduction to Vectors B. Displacement and Velocity C. Acceleration D. Falling Objects</p> <p><u>Unit 3: Two-Dimensional Motion and Vectors</u> A. Vector Operation B. Projectile Motion C. Relative Motion</p> <p><u>Unit 4: Forces and the Laws of Motion</u> A. Changes in Motion B. Projectile Motion C. Newton's Second and Third Laws D. Everyday Forces</p>	<p><u>Unit 5: Work and Energy</u> A. Work B. Energy C. Conservation of Energy D. Power</p> <p><u>Unit 6: Momentum and Collisions</u> A. Momentum and Impulse B. Conservation of Momentum C. Elastic and Inelastic Collisions</p> <p><u>Unit 7: Circular Motion and Gravitation</u> A. Circular Motion B. Newton's Law of Universal Gravitation C. Motion in Space</p> <p><u>Unit 8: Vibration and Waves</u> A. Simple Harmonic Motion B. Measuring Simple Harmonic Motion C. Properties of Waves D. Wave Interactions</p> <p><u>Unit 9: Sound</u> A. Sound Waves B. Sound Intensity and Resonance C. Harmonics</p>	<p><u>ADI Unit 9 Review: Harmonics</u></p> <p><u>Unit 10: Light</u> A. Electromagnetic Waves B. Characteristics of Light C. Types of Mirrors D. Color and Polarization</p> <p><u>Unit 11: Interactions of Light</u> A. Refractions B. Thin Lenses C. Optical Phenomena D. Interference E. Diffraction</p> <p><u>Unit 12: Electricity</u> A. Electric Charge and Force B. The Electric Field C. Electric Potential D. Current Resistance and Power</p> <p><u>Unit 13: Circuits and Circuit Elements</u> A. Schematic Diagrams and Circuits B. Resistors in Series or Parallel C. Complex Resistor Combinations</p>	<p><u>Unit 14: Magnetism (HONORS ONLY)</u> A. Magnets and Magnetic Fields B. Magnetism from Electricity C. Magnetic Force D. Electricity from Magnetism</p> <p><u>Unit 15: Fluid Mechanics</u> A. Fluids and Buoyant Force B. Fluid Pressure C. Fluids in Motion</p> <p><u>Unit 16: Thermodynamics</u> A. Temperature and Thermal Equilibrium B. Changes in Temperature and Phase C. Relationships Between Heat and Work D. The Laws of Thermodynamics</p> <p><u>Unit 17: Subatomic & Atomic Physics (HONORS ONLY B-F)</u> A. Models of the Atom & the Nucleus B. Nuclear Decay C. Nuclear Reactions D. Particle Physics E. Quantization of Energy F. Quantum Mechanics</p>

NOTES

Acknowledgements

Please read and fill out this acknowledgement page and return to Mr. Webber. Keep the syllabus for your records.

I, _____, have read the syllabus for Honors Physics

Name of Student

1. I understand Mr. Webber's Guidelines, Procedures, and Policies, including the use of cell phones and tablets, and the expectations of me, including the time and work expected outside of class. I also understand the discipline and academic consequences for not living up to those expectations. I recognize that the science of physics is very demanding and rigorous and that it will require discipline, planning, and studying on my part.

Signature of Student

Date

As the parent(s)/guardian(s) of the above named student, I/we also understand the Guidelines, Procedures, and Policies of Mr. Webber's class. In addition, I/we understand the academic demands of the course and will provide support to our student, Mr. Webber and the class as a whole.

Signature of Parent/Guardian

Date

Parent/Guardian Email

Phone