

CONCEPTUAL PHYSICS

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“All things denote there is a God; yea, even the earth, and all things that are upon the face of it, yea, and its motion, yea, and also all the planets which move in their regular form do witness that there is a Supreme Creator” (Alma 30:44)

Course Descriptions

Physics will be taught as a conceptual subject, removing a majority of the algebraic manipulation, trigonometry, and advanced problem solving. In its place we will have assigned readings, group work, and inquiry labs. We will be able to cover a large breadth of material in less depth than a traditional physics course. We will be using Paul Hewitt's 8th edition of Conceptual Physics as our course guide and reading material.

Scope and Sequence

Conceptual Physics will be taught in the following sequence:

1. Mechanics: Linear Motion, Projectile Motion, Newton's Laws, Rotational Mechanics, Momentum, Energy
2. Matter: Atoms, Solids, Liquids, Gases, Phase Changes, Heat, Thermodynamics
3. Acoustics: Waves, Oscillatory Motion, Sound, Musical Instrumentation
4. Optics: Particle Theory of Light, Geometric Optics with Lenses and Mirrors
5. Electricity and Magnetism: Circuits, Magnets, Electromagnets
6. Modern: Nuclear, Reactions, Relativity

Expectations and Prerequisites

Students are expected to come to class prepared, having completed their reading and assigned practice problems. Students can expect to have ten to twenty minutes of reading and/or practice problem every night. Students are also expected to be prepared for their weekly quizzes, given every Friday in class.

Homework and reading schedules will be given out each Friday for the coming week. All materials will be uploaded and posted to the blog. Students should keep up with the class when absent to the best of their ability.

Grade Breakdown

Quizzes – 35%	A = 94% - 100%	B- = 80% - 84%
Tests – 35%	A- = 90% - 94%	C+ = 77% - 80%
Labs – 20%	B+ = 87% - 90%	C = 74% - 77%
Course Notebook – 10%	B = 84% - 87%	C- = 70% - 74%

Assessment

Students can expect to have about two tests per term (one at midterm, one at term final), with a quiz every Friday. Quizzes will be based on the weekly concept covered, and tests will cover the cumulative material from previous quizzes. We will take practice and group quizzes on Mon-Thurs that will not be worth point value, but will help students gauge their understanding.

We will cover about one chapter of the book each week. Students will have practice problems and assignments leading up to the quiz that will prepare them for the quizzes. Each quiz is worth 40 points and will consist of 10 questions that will be graded using the following criteria:

- 4 points: Problem is done correctly with no errors
- 3 points: The student shows an understanding of the concept but made a minor error (algebra, calculation, units, etc.)
- 2 points: The student made two or more minor errors or a major error (wrong equation, wrong values, misread question, etc.)
- 1 point: The student shows little to no understanding of the concepts, but at least made an honest attempt.

Students may retake each quiz once. They must first come in and work with me on the concept. Quizzes must be retaken within two weeks of the original quiz. The quiz will only be administered after the student has shown increased understanding. Students will receive the higher of the two scores.

Notebook

Students are to keep a notebook with all of their lab work, homework, notes, and quizzes in it. Loose papers can be taped in. The notebook should be labeled clearly by day and concept. The notebook will be checked twice a term for completion of assignments, notes, labs, and neatness. These checks will be done on the day that the tests are given and will be worth. Homework should be corrected and scored out of ten points according to the guidelines in the homework section below. Each notebook check will be worth 100 points.

An example notebook will be kept on Mrs. Wilson's desk so that the students can keep up with missed work and look at answers for their homework assignments.

Classroom Policies

Late Work: I do not accept late work on labs. Homework is not submitted for a grade, so it is up to the student to gain the understanding they need before quizzes are given. On test days, I will collect students' notebooks. Those may not be turned in late.

Absence: When students are absent, they should email or talk to me as soon as possible so they can receive the material missed. In general, students will have two days to turn in missed work for every one day they were gone from class. Because of the high focus on group and lab work, it can be detrimental to students' success in the course if they are frequently absent. If students are absent on quiz day, they can come in after school and during lunch within two weeks of the original test date to take the quiz.

Punctuality: It is a sign of respect to be on-time to class. Tardiness will result in loss of points.

Materials: Students are expected to have their notebook with them each day of class. Textbooks are to be left at home for reading assignments and homework.

Honesty: Much of the class will be based on the "honor system." Students will self- and peer-grade and will be expected to report scores with complete honesty. Cheating and plagiarism will not be tolerated to any extent.

Grading: I try to be a fair grader, and most of physics is objective in nature. If students ever feel there is a mistake or misjudgment on my part, it is important that they come and speak with me to work it out.

Homework Procedure and Style Guidelines

Students will self-grade and record their homework score based on completion at the beginning of the class period it is due. I will periodically collect homework to check honesty. The self-grading policy is as follows:

- 10 points given if the entire assignment is complete
- 1 point deduction for every answer that is wrong
- Score is given out of 10 points
- Score cannot be negative

Homework should be professional in appearance. Assignments should be completed in the student's notebook with the date and name of assignment at the top of the page. Students should work vertically down the page in 1 or 2 columns. Adequate space should be left between problems for ease of reading. Handwriting should be neat and legible. Students who do not adhere to these requirements will lose points on their homework assignments.

Contact

Daily Classroom Schedule

Period 1: Room 404
Period 2: Room 404
Period 3: Room 404
Period 4: Room 401 (MWF) Art Room (T/Th)
Lunch: Room 404 or Room 410
Period 5: Room 403
Period 6: Room 406
Period 7: Room 411

After School Schedule (to receive help/tutoring)

Monday (3:15 - 5:30): Room 404/410
Tuesday (3:15 - 4:15): Room 404/410
Wednesday (3:15 - 4:15): Room 404/410
Thursday (3:15 - 5:30): Room 404/410
Friday (3:15 - 4:15): Room 404/410