

Physics and Honors Physics - Course Syllabus & Policies

(Remote learning version)

Welcome to physics! This year you will be introduced to the finest of all the sciences, indeed the foundation upon which all other sciences are built! You will learn about some of the most influential and significant ideas developed by humankind, empowering you to have a much better understanding of the universe. In fact, a famous physicist, Ernest Rutherford, once said, "All science is either physics or stamp collecting." No matter if your natural talents are in math and science, or you're more apt to study art or humanities, you'll likely gain fondness for physics and have new skills for life!

SYLLABUS – SIX UNITS OF STUDY

Fall Semester

1. KINEMATICS

- A. Motion in One Dimension
- B. Motion in Two Dimensions
- C. Relative Motion

2. DYNAMICS

- A. Newton's Law of Motion
- B. Torque and Rotation
- C. Circular Motion
- D. Gravitation

3. ENERGY, MOMENTUM, RELATIVITY

- A. Work and Energy
- B. Impulse and Momentum
- C. Conservation Laws
- D. Special and General Relativity

Spring Semester

4. OPTICS

- A. Reflection & Mirrors
- B. Refraction & Lenses
- C. Optical Phenomena
- D. Human Vision

5. WAVES

- A. Wave Properties
- B. Sound
- C. Diffraction & Interference
- D. Wave Phenomena

6. ELECTRICITY

- A. Static Electricity
- B. Current Electricity
- C. Electrical Circuits

PHYSICS LAB NOTEBOOK & OTHER MATERIALS

Every day you will need to have:

- A 3-ring binder for physics, with lined paper for homework, and a section for labs.
- Pencils and a ruler for lab data collection and analysis.
- A calculator with trigonometric functions, preferably a TI-84, or a low-cost TI-36. If you do not have a graphing calculator, please download to your iPhone an app called "Calculate 84" which simulates the TI-84 on your phone. Alternatively you can try "Graphing Calculator X84" which is available on Google Play for Android devices.

GRADING

Grading is based on total accumulated points within *weighted* categories. Minimum for letter grades are shown below.

Categories (Percentages):

- Attendance & Participation (10%)
- Concept Builders (15%)
- Homework (30%)
- Quizzes (25%)
- Labs (20%)

Grading Scale:

A+	97%	C+	77%
A	93%	C	73%
A-	90%	C-	70%
B+	87%	D+	67%
B	83%	D	63%
B-	80%	D-	60% (F below 60%)

GOOGLE CLASSROOM

The learning management system (LMS) for all physics classes is Google Classroom. By now you are likely familiar with Google Classroom, and you each should have a GC account. All assignments will be posted on GC, but many of them are completed using other websites (see details on next page for Concept Builders, Homework, and Quizzes).

WEBSITE & EMAIL

The web page for all physics classes is redwood.org/nash, and the email is dnash@tamdistrict.org. Web page and email updates will occur every Monday. **Please read these weekly emails and review the agenda online!**

Always use **your district gmail** for communication, and also for registering for any physics accounts for class.

ONLINE LEARNING EXPECTATIONS USING ZOOM

The TUHSD Distance Learning Video Conference Responsible Use Agreements is found [here](#). Key points:

- Display my first and last name (teachers will not allow unrecognized names to join).
- Position my camera to show my face.
- Keep my background simple and classroom appropriate to minimize distractions
- Dress as if attending class in-person with my teacher and classmates.

I added one more: **Do not use your cell phone for text, email or social media** during class. Of course, your phone may be used as the camera for Zoom, but no other device can be used to for text, email, or other communication

ATTENDANCE & PARTICIPATION (10% of your grade)

Each class meeting will be worth 5 points. Possible reduction in points include:

- 1 point for being less than 5 minutes late to a class meeting
- 2 points for being 5-15 minutes late to a class meeting
- 3 points for being more than 15 minutes late to a class meeting
- 5 points for an unexcused absence from a meeting. Your parents must excuse an absence *before* a class meeting.
- 1-5 points violating rules for online learning listed above, including not participating in class discussion or breakout rooms; using other prohibited devices during a meeting; not having your camera turned on; causing distractions, etc.

CONCEPT BUILDERS (15% of your grade)

You will soon get familiar with the website **physicsclassroom.com**. The section called “Concept Builders” is an excellent way to accomplish just what it says: developing a conceptual understanding of physics. Some of these are qualitative (ideas, no numbers) and some are quantitative (“light” computations). **The Concept Builders are to be completed before homework assignments are attempted.** Concept Builders will mostly be assigned on Mondays.

You will have to set up an account and login to physicsclassroom.com to get credit for the Concept Builders. The scores upon completion will be automatically reported to the teacher, and then added to the class gradebook for each grading period. Instructions for setting up your account are shown below:

- go to physicsclassroom.com and click on My Account, then click on Register as a Student
- use your **district email account**, enter First name, Last name, Course Code (see below) and create a password
- course codes: Period 1: 94939_1; Period 2: 94939_2; Period 3: 94939_3; Period 4: 94939_4; Period 5: 94939_5

HOMEWORK (30% of your grade)

Homework **reading assignments** will be given via physicsclassroom.com, using the Tutorials sections and also via slideshows posted within online daily agendas. Homework assignments will be given using the website **positivephysics.org**, which is an effective resource for teachers and students, especially during remote teaching and learning. You will have to set up an account and login to positivephysics.org to get credit for the homework. The scores upon completion will be automatically reported to the teacher, and then added to the class gradebook for each grading period. Instructions for setting up your account are shown below:

- go to positivephysics.org and click on Students – Join Here!
- username: please enter last name and first initial. For example, sondheimd
- password: you might want to make it the same as the one you used for physicsclassroom.com!
- click and drop down to your section/class period
- teacher code: 94939 (for all classes)

To complete homework assignments, you should first do assigned reading from physicsclassroom.com, watch videos on positivephysics.org (there are more videos on flippingphysics.com). This [alignment document](#) helps us organize.

The homework assignments are set up to allow for hints, but try to do the work without looking at the hint first! When you do the homework, you get a completion score and an accuracy score. If you get all the problems right without making a mistake, you get 100%! If you make a mistake, you’re allowed to try again until you get it right, but your accuracy score goes down, so try to get it right the first time! The grade for homework will be 70% based on completion, and 30% based on accuracy. If you finish every problem, you will score a minimum of 70%. Your score goes up from there based on how many you get right on the first try 😊

QUIZZES (25% of your grade)

Quizzes will cover the homework assignments, using the “assessment” section on **positivephysics.org**. Expect a quiz about every other week. There are also review problems in the “extra practice” section that you can try before the quiz to check understanding. These are optional.

Absence: A missed quiz must be made up within two days, so a quiz given on a block day (usually Tu/Wed) must be made up the next block day (Wed/Fri). If you do not make up a quiz, it will be marked as “missing” in the grade book, which will result in zero points for that grade.

LABS (20% of your grade)

As often as once per week, you will have an online simulation lab (a virtual lab) that typically includes data collection, data analysis and calculations, and answers to relevant questions. There are no “formal” lab reports. You will be provided with a lab worksheet. A lab may be completed with a partner over Zoom, FaceTime or other video software, and each student turns in their own work. A lab may also be done alone if you prefer.

LATE WORK - 10% penalty per day for all late work, so, do not make late work a habit