Honors Physics Syllabus

Instructor: Mr. Steven Reife **Year:** 2025-2026 **School:** Katz Yeshiva High School

Course Description

Welcome to Honors Physics! This is a challenging and rewarding course designed to provide a comprehensive and quantitative understanding of the fundamental principles that govern the physical world. The curriculum will build upon your mathematical foundation to explore concepts from classical mechanics to modern physics. This course emphasizes problem-solving, critical thinking, and laboratory investigations to help you develop a deeper appreciation for the laws of nature.

Course Objectives

By the end of this course, students will be able to:

- Apply the principles of physics to solve complex, quantitative problems.
- Analyze and interpret data from laboratory experiments.
- Develop strong critical thinking and analytical skills.
- Communicate scientific ideas clearly and effectively, both verbally and in writing.
- Understand the connections between various fields of physics and their applications in the real world.

Units of Study

The course is divided into the following major units, each with a corresponding project or lab component:

- **Unit 1: Introduction to Physics**
- **Unit 2: Motion in 1 Dimension**
- **Unit 3: Forces and Newton's Laws of Motion**
- **Unit 4: Motion in Two Dimensions**
- **Unit 5: Circular Motion and Gravity**
- **Unit 6: Conservation Laws**

- **Unit 7: Simple Machines**
- **Unit 8: Rotational Motion**

Course Text

The primary course text is the CK-12 Physics Flexbook 2.0. You can access it online here: CK-12 Physics Flexbook 2.0

Grading Policy

Your final grade will be determined by: (**Total Points Earned / Total Points Assigned) x 100**

It should be expected that **60-70%** of the points will come from assessments.

- **Tests**
- **Quizzes**
- **Homework/Assignments**
- **Labs/Projects**

Required Materials

- Either a folder with prongs or a 3-ring binder for guided notes, handouts, and lab worksheets/writeups
- Notebook or looseleaf paper
- Scientific calculator (graphing calculator recommended)

Classroom Expectations

1. **Be Prepared:** Come to class on time with all necessary materials.
2. **Participate:** Engage in class discussions, ask questions, and collaborate respectfully with your peers.
3. **Be Punctual:** All assignments are due on the date specified. Late work will be subject to a penalty.
4. **Academic Integrity:** All work must be your own. Cheating or plagiarism will result in a zero for the assignment and a report to the administration.
5. **Device Policy:** Phones are prohibited in class. Laptops and tablets are typically not needed during class time. It is advised that you have your device with you, just in case. If devices become a distraction, we will move to a device-free class period.

Academic Integrity

In recent years, we have all gained access to various levels of artificial intelligence, a rapidly evolving tool impacting many areas of society. While society is still establishing rules and laws surrounding AI, I believe this technology can enhance learning when used responsibly, but it must be safeguarded against disrupting education. I recognize

there is a fine line between acceptable and unacceptable use. Therefore, I will provide clear guidelines regarding AI usage when assigning work and study tasks.

If you are ever unsure whether it's appropriate to use AI or another form of technology, please ask! I am happy to clarify the rules for any specific assignment. Some uses, like copying and pasting AI-generated responses, constitute cheating. Others, such as using AI to clarify confusing source material, can be acceptable. If it is not explicit in the instructions, ask before using!

It is NEVER okay to pass something created by AI off as your own, independent thinking. I will teach you how to cite a language model as a source and include it in **your** work.

Lab Safety

Learning by doing in the lab is a core part of this course and key to your success.

1. **Safety First:** Students must always follow written safety rules and directions.
2. **Follow Procedures:** Lab procedures must be followed exactly as instructed. Equipment is to be used only as directed. If you have a creative idea that goes beyond the given procedure, bring it to me first! I will gladly help you develop your own experiment, and we'll work safely together.
3. **Stay Focused:** Labs are a fun and important opportunity for hands-on learning, which is a valuable and rare experience. Distractions in the lab are as disruptive as talking during a test—they prevent you and others from fully engaging in this crucial learning process. Such behavior will be treated accordingly.
4. **Behavior and Consequences:**
    - Students who violate classroom protocols will be given a warning.
    - Continued disregard for the rules will result in an email to your parents and, if necessary, removal from the lab. Disrespectful or disruptive behavior will result in a "0" for the day's work.

This should never happen! If issues arise, I am confident that by working together, we can find a safe and fair resolution.

Please read through this syllabus completely, along with your parents, and return it to class signed below. This will be kept in your notebook, **as the first page**, throughout the year.

I, _____, have read the above syllabus. I understand the information given and I agree to adhere to the expectations listed within it.

Name_____Date_____