JOHN F. KENNEDY HIGH SCHOOL
6715 GLORIA DRIVE SACRAMENTO CA 95831
JFK.SCUSD.EDU
916.395.5090
HOME OF THE COUGARS

2024-2025 PHYSICS SYLLABUS

Course description: Physics (10 Credits)
Physics P is a two-semester course covering general physics, which is designed to meet the needs of students pursuing a university or college education. The course encompasses general principles of classical physics. These major areas will overlap to reemphasize and build a sound foundation in physics. The laboratory portion will correlate with the instructional units of this course. This course meets the A-G Requirements for the University of California and is aligned with the Next Generation Science Standards.

Contact Information
- Name: Mr. Hill
- Email: Stephen-Hill@scusd.edu
- Phone: 916-395-5090 ext 506124
- Class Website: Google Classroom

Textbook:
- STEMScopes CA-NGSS 3-D (Rice) 2019. Physics in the Universe: Student STEMscopedia.
- Student Textbook and Materials will be available online via the student Classlink account (SCUSD)

Required Materials - PLEASE BRING TO CLASS DAILY:
- 3-Ring Binder or folders to organize handouts
- Notebook – **If I write it on the board, write it in your notebook!**
- Pencil
- Calculator (any kind)

Course Outline: Next Generation Science Standards [NGSS]: Concepts & Performance Expectations
- The Science and Engineering Practices are what scientists/engineers DO.
- The Disciplinary Core Ideas are what scientists/engineers KNOW.
- The Crosscutting Concepts are HOW scientists/engineers THINK.

Crosscutting Concepts:
1. Patterns
2. Cause and effect
3. Scale, proportion, and quantity
4. Systems and system models
5. Energy and matter: flow cycles and conservation
6. Structure and function
7. Stability and change of systems

Science and Engineering Practices:
1. Asking questions (for science) and defining problems (for engineering)
2. Developing and using models
3. Planning and carrying out investigations
4. Analyzing and interpreting data
5. Using mathematics and computational thinking
6. Constructing explanations (for science) and designing solutions

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Disciplinary Core Ideas:
1. Forces and Motion
2. Forces at a Distance
3. Energy and Energy Conservation
4. Waves & Electromagnetism
5. Nuclear Processes
6. Stars & Universe

Unit Structure & Order of Topics
1. Motion and Forces
    a. Kinematics
    b. Force, Mass, Acceleration
2. Momentum and Collisions
    a. Momentum
    b. Collisions – tectonic plates
    c. Egg drop
3. Forces at Distance
    a. Gravity/Planetary
    b. Electrostatic force
    c. Forces in materials
4. Energy Conversion
    a. Conservation of energy
    b. Work
5. Electricity and Magnetism
    a. Electricity
    b. Magnetism
    c. Electrical energy
6. Waves
    a. Waves and matter
    b. Sound
    c. Earthquakes
    d. EM radiation
    e. Information and energy transfer
7. Nuclear Processes
    a. Nucleus
    b. Radiometric dating
8. Stars and Universe
    a. Stars/space
    b. Big Bang

Grade Breakdown
A = 89.5-100%
B = 79.5-89.4%
C = 69.5-79.4%
D = 59.5-69.4%
F = 50.0 -59.4%

Grading
Classwork, Labs and Homework (50%)
Quizzes, Tests, Final (50%)

Late work, Make-up Work
- Late work will be deducted by 5% per day
- Unexcused absence: see line above
- Excused absence: For each day of absence, you have one day of make-up time.
- As soon as you return to class, check the daily wall folders and ask Mr. Hill what you missed.
- When you know you will be absent, make arrangements with Mr. Hill in advance.

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Class Expectations:

- Arrive ON TIME and be prepared for class.
- Be respectful of other students and Mr. Hill. Assume that others have good intentions and try to understand 1st. When you disagree with what someone says, do so without insults or personal attacks. For example: it's okay to say "I disagree" or "that's wrong" but not "are you stupid?" or "you're dumb."
- No traces of any food or drinks should be left in the classroom. I don't want food or drink to distract or detract from learning.
- **If I write it on the board, write it in your notebook!**
- Practice Academic Integrity: Plagiarism, Cheating, and Dishonesty will not be tolerated (Zero Grade)
  If you copy, or if you let someone copy from you, BOTH of you will get zero credit.
  Do NOT let other students read or handle your homework papers.
  Looking at another student's written homework (in any form) is copying.
  You may help another student by talking about ideas, but **do NOT show your paper**.
- Be engaged and participate in class discussions and activities – focus on physics and not other classes/activities. Take notes. Ask questions. Answer questions. Use materials in appropriate ways.
- Remove ear buds and head phones before class starts.
- Don't touch other students. (Fist bumps are okay)
- **Cell phones should be all the way off and put into backpacks.** They should not be seen or heard.
  1st time: I'll ask you to shut off the phone and put it in your backpack.
  2nd time: I'll take the phone and return it after class.
  3rd time: I'll take the phone and return it after class.
  4th time: I'll take the phone and give it to the campus climate office. They will put you on a phone contract which includes further disciplinary actions.

If this phone policy doesn't work for 2 or more students in the class, I will start collecting ALL phones at the start of class and keep them all at the front of the room during class.

Physics can be very challenging!

Get help:

- Email: Stephen-Hill@scusd.edu with short questions or to set up a time for tutoring for longer ones.
- Check websites such as Khan Academy or the Physics Classroom.
- Get a tutor.
- Get help from each other.

Parent or Guardian Name: _____

Signature: _____ **Date:** _____

Comments or questions? Write them below or email Stephen-Hill@scusd.edu