

Physics

Syllabus 2018-2019

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Course Description:

Physics uses scientifically tested ideas that reliably model nature as a system that follows simple rules. Learning physics is part of realizing your greatest possible contribution to society. Like nature, society is a system. Learning to see nature as a system and apply its rules to accomplish engineering goals gives insight into how to understand and influence more complicated systems such as your family, business, community and society. Throughout this course, we will use technology and engineering principles to build functional projects. And you will apply mathematical models to understand the rules of nature demonstrated by your projects.

Course Objectives:

Students will:

- Apply the NGSS practice of Engaging in Argument from Evidence to earn a Professional Growth grade.
- Use math to model nature.
- Test knowledge with science.
- Apply design and engineering principles to make functional projects.
- Learn to maintain a safe environment for people, equipment and projects.
- Transform a mathematical model of nature and recognize the same model in different arrangements.
- Prepare for success on the SAT and learn to understand scholarly writing.

Materials required: You must have these materials by Monday, September 11

- at least one writing utensil, preferably two types (exempli gratia [for example] a pencil and a pen).
- Physics Reference Sheet: A loose leaf sheet of paper dedicated to your most useful notes and equations.
- A notebook dedicated to this class and only this class.
- A folder dedicated to this class and only this class.
- A calculator with trig functions (let TK know if you do not have this from Math 90).

Units:

- 1) Science reading and science practices.
- 2) Units, measurements.
- 3) Hypothesis testing
- 4) Force and motion
- 5) Energy conversion and “renewable” energy
- 6) Circuits
- 7) Waves and light

Ideas for if you need help:

- 1) Check your notes for similar examples or helpful formulas.
- 2) Ask a friend to help you get started, but don't copy their work!
- 3) Go to <http://www.physicsclassroom.com/> or <http://hyperphysics.phy-astr.gsu.edu/hphys.html> or <https://www.khanacademy.org/science/physics>
- 4) Post your question in a discussion on our google classroom or email TK with your specific question.
- 5) Find TK for help during advisory (with permission from your advisor) or at 7:30 most mornings.
- 6) Arrange to meet after school or Saturday graffiti.
- 7) Attend Thursday Advanced Physics Workshop from 4:15 to 5 on Thursdays.

Academic Integrity:

- Scholars who have exactly the same work will both receive 0s.
- Students who are cheating on quizzes, tests, and exams will also receive a 0.
- Plagiarism will also result in a 0 on that assignment.
- If you are helping your friend, make sure that you don't tell them the answer. You can show them where they made a mistake, you can say that you got a different answer, you can ask questions, you can talk through examples together. If you don't know how to help without letting them copy your work, have them go ask TK for help.

Grading:

Grades will be determined using the following percentage breakdown:

Participation: 15%	A = 100% to 90%
Growth in Professionalism 10% (updating and sharing 'physics curriculum vitae')	AND a Physics Curriculum Vitae that shows excellence. NOTE: A student <u>cannot</u> get an A without providing evidence for the A in the curriculum vitae.
Homework: 15%	B = 89% to 80%
Mastery: 50%	C = 79% to 70%
Final Exam: 10%	D = 69% to 60%
	F = 59% and below

Curriculum Vitae (course of life or resume) to show Growth in Professionalism:

To practice Engaging in Argument from Evidence you will keep track of excellence (doing things for learning physics or helping people learn physics that are not directly graded). To earn an A grade or honor's credit, this document must show a record of your excellence.

Participation:

This part of your grade includes modeling growth mindset, do nows, being on task, honoring CLHS contract, maintaining equipment, safety, meeting in class deadlines, honesty, and excellence. This is worth more than a full letter grade. Barring, excused absences, this part of the grade must be earned by the day and cannot be made up. **Scholars must be punctual with required materials evident at the start of class to earn full credit for this 1 and a half grade level category.**

Homework:

Homework assignments will be given frequently. Your homework must be ready to turn in at the beginning of the class period. Homework turned in on time may, with teacher approval, be revised for increased credit. Late homework will receive, at most, half credit with no option for resubmission. **A science reading response will be due on the last day of class for every week that has at least one day of student attendance. The Science Reading Response may be turned in early.**

Mastery:

Your mastery grade will include equation transformation objectives, professional objectives, engineering objectives, communication objectives, art objectives and physics content objectives. These grades will come from quizzes, tests, **projects**, presentations, conferences, and other opportunities for you to show that you have mastered the content. Some standards will continue across units.

Final exam

The final exam will be a cumulative assessment at the end of the semester based on standards assessed throughout the semester. There will be no retakes on the final exam. Part of the final exam will be project based. The projects may require **more than a month of work**. Start on your final projects early. Expect problems and setbacks that will take longer to overcome than expected. In 2017-2018, students who waited for the last minute failed the project portion of the final. The best grades were earned by the first people to start projects.

Absences:

- If you are absent, you must copy the notes from someone on your own time- NOT during class. You also need to get the work you missed from your teacher.
- Students with **unexcused** absences will receive a zero for any assignments due the day of the absence as well as any participation or homework given the day missed.
- Students with **excused** absences must turn in assignments due the first day of the absence on the day of return, or be considered late. You will have one day for every day missed to complete all assignments given during your absence.

Late Work:

- Write TK a note or talk to TK in the morning, during lunch, or during advisory if there were exceptional circumstances. Give advance notice by email if possible.
- Late homework will receive half credit within one day of the due date with no credit after the second day.
 - Homework turned in after the start of class will be marked as late.
- Major assignments will be accepted late with a **10% penalty each day** up to 10 days (two school weeks) after the due date.

DUE THURSDAY, SEPTEMBER 7

Physics Syllabus Agreement

Please read the entire physics syllabus and ask questions if you do not understand something. Then have your parent/guardian fill out this information and sign below.

Parent/guardian name: _____

Relation of guardian to student: _____

Phone number: _____ Is this a cell phone? (circle) Yes No

Email address **of guardian** (write 'none' if not available): _____

Language spoken **by guardian** contact:

How much English do you speak?	(circle) None	Some	A lot
¿Cuánto inglés hablas?	(circulo) Nada	Poquito	Mucho

How much Spanish do you speak?	(circle) None	Some	A lot
¿Cuánto español hablas?	(circulo) Nada	Poquito	Mucho

What is the best time of day to reach you? _____

Do you prefer to be contacted via phone or email? _____

I have read this syllabus and I understand its contents. I agree to adhere to the policies and expectations of this class.

Student name

Student signature

Parent/guardian name

Parent/guardian signature