

# AP and Regular Physics Syllabus 2022-2023

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## **Introduction and Course Description:**

Welcome to Physics! Physics (/ˈfɪzɪks/), defined as the study of substances, begins your journey into the world of the advanced physical sciences.

**Course Overview:** Physics students will apply mathematics to real-world problem-solving situations, including the practical use of Algebra. It is also a course that requires a great deal of abstract thinking, visualization in three dimensions, and the use of logic and critical thinking skills. The goal of Physics is to provide students with a foundation to understand the structure and properties of chemical substances and to make predictions in regard to the movement of energy in a system. By nature, this course is lab-based with special emphasis on quantitative and qualitative methods of analysis. You are expected to be prepared to participate in completing the entrance question each day and participate in all class activities. *This is a very easy course to fall behind in quickly if you are not prepared and do not keep up with the pace of the course.* The following guidelines will be implemented throughout the school year

- New material will be presented every day
- Astronomy is cumulative – information from Day 1 will be used all year
- Algebra and a portion of Geometry will be integrated regularly
- 24-hour late assignment policy in place unless due to an excused absence 10% per day for a basement of 50%, an assignment during the grading period is always worth something. After the grading period, it may not be possible to have the assignment given credit. The end of terms are DEADlines that are not adjustable.
- Success comes from daily attendance and considerable effort inside and outside the classroom!

## **Required Expectations of Physics Students**

As a Physics student, you will be required to go above, and beyond the extent of what is expected in other science classes, you may have taken previously. You must possess or develop the following skills:

- High-Level Thinking – Can you think “outside the box” and piece together a method to solve a multi-step problem? Critical thinking and problem solving is an integral part of this course.
- Strict Work Ethic – Are you devoted enough to practice Physics problems outside of class?
- Conceptual Understanding – Can you get the “big picture” to connect concepts together?
- Meaningful Learning – Do not memorize and forget, learn, and grow to gain knowledge.

**Required Materials:** You will need Internet access and a web-accessible device. See the district if you need assistance. You will need a notebook, blank paper, writing instruments, a calculator, and a method of photographing your work. Any smartphone should meet all these requirements as an at-home substitute.

**Textbook Resource:** Mastering Physics is an online resource we used last year and I anticipate we will be using it again. We should also have a physical copy in the classroom. When I have the access codes for you, they will be announced, but it will not be long.

**Cornell Notes or Interactive Binder/Notebook Responsibility:** All students will be required to maintain an organized and functional interactive notebook (IAN), though I strongly suggest you use a binder therefore it is an IAB. IANs are used as a tool to help students organize their notes, vocabulary, lab activities, and other important information. When created and maintained correctly, students will benefit from its usage during the time of studying for exams and reviewing lab material. It is the responsibility of each student to update and bring their notebooks to class daily. I will allow students to keep their notebooks in the classroom on **assigned** days for storing purposes. Notes will be graded, see attached Rubric. If you choose to use a 3-ring binder, then you will have tabs, dividers, and a folder for all papers and must be able to access them on demand. This option is allowed if gluing, cutting, coloring, and such is just going to make you insane. However, you may notice that the process of organizing will require a similar effort level, as nothing is for free. You need to be consistent for the entire term, so choose wisely. Items will be uploaded into Schoology on an almost daily basis.

**Campus Planner:** You will be required to log in homework and important due dates in your campus planner. It will be checked frequently. If you do not receive homework, you will mark NO HMK in your calendar. Also, your planner will serve as a hall pass. You cannot leave the classroom without having your own personal planner. You are **allotted a limited number of passes** during **allotted campus passing periods** per nine weeks. There are ZERO passes allowed at certain parts of the day so do not ask. You are expected to have the binder to exchange for a pass. I would strongly encourage to handle business between classes. In some cases, you might want to meet me at the door check-in and get permission before the bell rings and avoid the 10/10 min no passing issues.

**Optional Science Fair Participation:** *All Physics students will be allowed to participate in the science fair.* It will be counted as extra credit/ low major grade replacement and a timeline of completed products will be provided. As more information becomes available on times and dates we will discuss participation options hopefully during the 2<sup>nd</sup> or 3<sup>rd</sup> week of this course during class if I have information, otherwise, see Ms. Owens for further information.

**Physics Course Outline:** The following FBISD outline is subject to change.

Fall Semester	Spring Semester
<b>1<sup>st</sup> Nine Weeks:</b> <ul style="list-style-type: none"> <li>➤ Unit Zero – Expectations, Scientific Method, Math &amp; Trig review/Crash Course, How to present your answers.</li> <li>➤ Kinematics &amp; Ballistics</li> </ul> <b>Science Fair:</b> Part I Due Dates	<b>Optional Science Fair Project is due!!!!!!!!!!</b> <b>Science Fair Exhibit</b> (2 <sup>nd</sup> week after winter break) <b>UH Science &amp; Engineering Regional Fair of Houston competition</b> <b>3<sup>rd</sup> Nine Weeks:</b> <ul style="list-style-type: none"> <li>➤ Impulse &amp; Momentum</li> <li>➤ Thermodynamics</li> <li>➤ Electrostatics</li> <li>➤ Electric Circuits</li> </ul>
<b>2<sup>nd</sup> Nine Weeks:</b> <ul style="list-style-type: none"> <li>➤ Dynamics – Force</li> <li>➤ Gravity and Circular Motion</li> <li>➤ Work Energy and Power &amp; Thermodynamics</li> </ul> <b>Science Fair:</b> Part II Due Dates	<b>4<sup>th</sup> Nine Weeks:</b> <ul style="list-style-type: none"> <li>➤ Electromagnetism</li> <li>➤ Waves</li> <li>➤ Optic</li> <li>➤ Quantum, Atomic and Nuclear</li> </ul>

AP Physics Fall Semester	AP Physics Spring Semester
<b>1<sup>st</sup> Nine Weeks:</b> <ul style="list-style-type: none"> <li>➤ Unit Zero – Expectations, Scientific Method, Math &amp; Trig review/Crash Course, How to present your answers. – T1</li> <li>➤ Kinematics –T1</li> <li>➤ Dynamics –</li> </ul> <b>Science Fair: Part I Due Dates</b>	<b>Optional Science Fair Project is due!!!!!!!!!!</b> <b>Science Fair Exhibit</b> (2 <sup>nd</sup> week after winter break) <b>UH Science &amp; Engineering Regional Fair of Houston competition</b> <b>3<sup>rd</sup> Nine Weeks:</b> <ul style="list-style-type: none"> <li>➤ Work Energy Power</li> <li>➤ Electromagnetism</li> </ul>
<b>2<sup>nd</sup> Nine Weeks:</b> <ul style="list-style-type: none"> <li>➤ Dynamics –</li> <li>➤ Circular Motion</li> <li>➤ Friction</li> </ul> <b>Science Fair: Part II Due Dates</b>	<b>4<sup>th</sup> Nine Weeks:</b> <ul style="list-style-type: none"> <li>➤ Coulomb's Law</li> <li>➤ Circuits</li> <li>➤ Waves</li> <li>➤ Optics</li> </ul>

### **Classroom Technology and Communication:**

All students and parents will have access to varied communication tools. I will utilize the following tools to keep you abreast of due dates, exams, quizzes, special labs, science fair due dates, and other critical information. (Remind @ashphysics, Teacher FBISD Website: and Skyward student assignments/Parent portal access for current student progress and a lot of **Schoology**) Students will be allowed to use their cell phones/notepads **only during authorized classroom assignments and certain formative assessments.** Failure to comply with the classroom technology and campus rules will automatically forfeit their privilege to use them. They will then use an alternate means of completing an assignment.

Schoology will be used in this course as the primary distribution and acceptance method of assignments.

### **FLINN SAFETY CLASSROOM REQUIREMENTS:**

ALL STUDENTS MUST PASS THE FLINN SAFETY EXAM AND LABORATORY EQUIPMENT PRACTICUM WITH AT LEAST 100% SUCCESS PRIOR TO BEING ALLOWED IN THE LABORATORY AREA by August 12, 2022. No Exceptions.

### **TUTORIAL SCHEDULE:**

Tuesday & Wednesday, 2:50 pm until 4:30 pm but you do need to let me know as if nobody shows up I do have other things to do.

All students must sign in and out.

\*Schedule may be modified during campus meetings and Eagle Tutorials schedule.

### **Grading Criteria:**

Daily Grades: 50% <b>Examples:</b> Cornell Style Notes (CNTS) Quizzes, <b>Notebook checks</b> Homework, In-Class assignments Online Assignments, Warm-Ups (IAN) Mini-projects, Certain Science Fair items: Title, Plan of Action, bibliography. Etc... Lab Reports Field Trip Studies writing reflections	Major Grades: 50% <b>Examples:</b> Unit Exams Final Exams Certain Major-Labs Other Daily items may be part of a Project for a major grade entry <b>Remember:</b> Your Science Fair Project <b><u>IS</u></b> optional Science Fair Project part I and II <b>Extra Credit/Low major grade replacement, make arrangements with Ms. Owens for participation in the Science Fair.</b>
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**Testing:** Major tests will be given at the end of each unit. Retesting will be allowed according to FBISD district policy. \*Please note: Retests are short answers and are more difficult than the original test, with a maximum grade of 75% allowed per district policy. Students are strongly encouraged to study well and be successful the first time the test is given. \* On test days, students will place their backpacks at the back of the room and all cell phones will be silenced and turned into the cell phone organizers in the front of the room. Earbuds are not allowed. Merely touching a cell phone, electronic item, backpack or any notes, etc, is an automatic zero, as the assumption is you cheated, and only got caught during part of the cheating action. Also, a discussion with admin about if additional disciplinary actions are to be assessed.

**Academic Dishonesty:** Students who engage in any form of academic dishonesty shall be subject to disciplinary action and/or grade penalties as determined by campus administration and outlined in the FBISD board policy. In the event that the disciplinary action allows for reassessment, a student shall be required to complete an alternate assignment/assessment with parallel learning objectives. Students will be required to demonstrate mastery of content and skills. Credit shall be denied (a zero recorded in the grade book) until an alternate assignment/assessment has been completed for a maximum grade of 70 if allowed by disciplinary policies. It is the responsibility of the student to communicate with the teacher to initiate an alternate assignment/assessment within 24 hours of being permitted the opportunity for reassessment. District and campus guidelines will be enforced. If arrangements are not made with the time limit, then the zero will remain as part of the grade. Reminder, even touching anything that could be study materials, cell phones, etc. during a test is automatically considered cheating and gets a zero. I may even let you finish and inform you when it will not adversely affect others who are testing.

#### **Make-Up Work:**

Students will be expected to make-up assignments and tests after an absence. Students are responsible for obtaining and completing the make-up work in a satisfactory manner. It is expected that if a student is absent, they will attend the next scheduled tutorial day. Please view my Schoology link for any updates, most assignments will be posted on Schoology so often you can do it without intervention. You need to comply with the school's policy for documenting excused from unexcused absences, to avoid pro-rating of grades.

**Late-Work:** No late work will be accepted for full credit. Students who turn in late work have a discount of 10% per day late until 50% maximum cap. After five days or the end of term, it may not be possible to accept late work. District policies regarding late work will be enforced as well as unexcused absences.

**Special Laboratory Announcement:** Laboratory work is an essential part of learning and understanding science concepts and is designed to enhance information given in class. Lab safety is non-negotiable. A safety contract must be signed by you and your parent/guardian indicating your awareness of ALL safety policies. You will not participate in lab experiments until this contract is signed. If you choose to violate lab safety policies, you may be subject to grade deductions, expulsion from the lab and/or a zero on that particular lab report. Each student is responsible for all of the material covered in the lab. Students must also complete (at home when prompted) a prelab assignment prior to entering the laboratory (failure to complete means a zero for the lab activity, not all labs can be made up due to supply and safety considerations) and must complete (at home) a post lab prior to submission for a grade. As lab experiment grades are usually major grades and often consist of multiple entries in the grade book, the impact on your overall grade and earning credit cannot be overstated.

**Expectations:** These policies are in place to ensure all students know my expectations and have an optimum learning environment.

- Show respect and abide by the social contract for all persons, and visitors in this classroom. There will be no derogatory comments/language about sex, gender, race, religion, or personal thought.
- Student Visitation is **not allowed** during any class period
- Arrive before the tardy bell and start on your warm-up activity immediately
- Deliver your best and honest work at all times
- Always use safe practices during **all** lab experiments
- Students will not be allowed to leave the classroom during the **first 10 minutes** of the class period nor the **last 10 minutes** of the class period, and not during other no passing periods per school policy.

- Bell to Bell instruction will be implemented. I am the bell as often the school bells have issues.
- All classroom, WHS campus, and FBISD district guidelines and policies will be implemented daily and consistently.
- You will put your phone in the digital daycare on arriving to class, until such time as I tell you to use them or you may have them back at the end of class. This may vary from on class-to-class period basis as sometimes we may be using them as part of the school activities. They can be useful educational tools but are also a distraction.

#### **A Note on Consequences:**

Following these policies and procedures will result in increased time to participate in “fun” or extra activities and increased privileges. Astronomy is a lot of fun, don’t do anything to ruin the fun. Students who do not abide by the procedures outlined above will experience negative consequences. The **first minor infraction** will receive a verbal warning, if more than just a minor a phone call can also occur. The **second minor** involves a parent phone call home. The **third**, a scheduled parent and teacher conference. If the student continues to have a problem, they will be referred to the administration for further action. **Immediate administration involvement results after a level 2 offense.**

#### **A Note to Students and Parents:**

I have found that when expectations are clearly outlined and explained to both students and parents it increases the success of a class. Therefore, students need to share these policies and procedures with their parents or guardians, get them signed, uploaded into Schoology, and return them to me by Friday, August 12, 2022. If there are any questions, please email me as soon as possible, [Michael.Ashleman@fortbendisd.com](mailto:Michael.Ashleman@fortbendisd.com). All students will connect electronically to the Remind app for continuous communication, regarding homework reminders and quiz/test dates. All Parents/Guardians will be able to connect as well.

**Astronomy Return Form/Materials Checklist: ALL Due by Friday, August 12, 2022. {Please note: This is a grade 1 in Skyward and the safety test is a Major grade}**

FLINN Safety Contract
Daily grade: max points 100

**This syllabus will be placed in your notebook. Do Not Lose This Syllabus.**