

Course: Physics
Instructor: Mr. Kurtis Chan
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Text: Experience Physics, Savvas

Course Description:

Physics is a course designed for students to learn the why and how of physics ideas. Though mathematics is lightly touched upon, students are expected to have a basic understanding of algebra and geometry. In this course, students will be engaged in discussions, exams, quizzes, projects, and labs throughout the year.

Course Outline:

Semester 1

Unit	Content Covered	Content Specifics
1. Newton's Laws of Motion	Kinematics	Vectors, Velocity, Acceleration
	Forces	Force, Friction, Normal Force, Weight, Inertia, $F=ma$, action-reaction
	Torque	Lever arm, fulcrum, rotation
	Centripetal Forces	Centripetal, Centrifugal
2. Forces at a Distance	Law of Univ. Gravitation	Univ. Gravitation, Inverse Square Law
	Electrostatic Forces	Coulomb's Law, Charge, Attraction/Repelling
	Magnetic Forces	Magnetic Fields, Inducing Magnetism, Inducing Current
3. Energy - Momentum	Work and Energy	Work, Gaining of Energy
	Energy Types	Potential, Kinetic, and Elastic
	Transfer of Energy	Conservation of Energy

Semester 2

Unit	Content Covered	Content Specifics
4. Energy-	Momentum and Impulse	Momentum, Change of Momentum
	Conservation of Momentum	Collision Types, Conservation of Momentum and Energy

Momentum	Collisions in Earth's Crust	Earthquakes, Tectonic Plates
	Thermal Energy	Thermodynamic Law, Convection currents
5. Waves and Electromagnetic Radiation	Waves	Properties and Behavior, Optic Lenses, Refraction, Reflection
	Electromagnetic Radiation	Properties, Reflection, Refraction
6. Digital Information	Storing Information	SSD vs. HDD, Wireless technology
7. Nuclear	Atomic Forces	Strong/Weak Forces, Subatomic Particles, Fusion, Fission
	Radiation	Radioactive Decay, Carbon Dating, Geological Timing
	Stars	Formation of Stars, Energy Production, Big Bang Theory

Grade Distribution:

- A+ 97.0% or higher
- A 93.0% - 96.9%
- A - 90.0% - 92.9%
- B + 87.0% - 89.9%
- B 83.0% - 86.9 %
- B - 80.0% - 82.9%
- C + 77.0% - 79.9%
- C 73.0% - 76.9%
- C - 70.0% - 72.9%
- D + 67.0% - 69.9%
- D 63.0% - 66.9 %
- D - 60.0% - 62.9%
- F 59.9% or lower

Components of the Grade:

Assessments/Projects	70%
Labs/Coursework	30%

If you have a concern about a grade, please visit Google Classroom to submit a form to bring this to my attention. This is the best method in communicating concerns.

Student Responsibilities:

Students are expected to be prepared and ready to participate in class activities on a daily basis. This participation includes, but is not limited to, completion of class-assigned homework to be turned in, possession of pencils/pens, participation in class and group discussions, and behaving in a respectful and professional manner.

Academic Dishonesty

Any student(s) found exhibiting academic dishonesty, which include but not limited to, plagiarism, use of unauthorized material(s), prohibited communication, etc. will be subject to failure of assignment and/or course without the possibility of a retake or remake of assignment, project, assessment, or course credit.

Assignment Submissions:

Students are expected to turn in all course work by the assigned deadline. I ask that students who are having challenges with submitting assignments by the deadline to communicate to me well before the deadline so we can explore a possible resolution. Assignments submitted late may be accepted for credit with a possibly reduced marked score. Regardless of submission, all students will receive some feedback either individually or as a group on the assignment.

Late and Absent Work

Any student who misses a day of school due to a school approved reason (sick, bereavement, etc.) has **three days after returning** to complete the assignment and/or exam, and **five days to complete a lab** before or after school. Any student turning in late work will without an approved reason may receive reduced credit for the assignment.

Technology Used by the Students

The primary use of technology will be in the laboratory. Students will gather data by using various types of electronic equipment such as the Pasco® Smart Timer™ or the Vernier® LabQuest™ Data Collection Interface together with Vernier's Logger Pro® software package. Students can then use Logger Pro®, Excel® or TI® graphing calculators to perform calculations on their data for analysis. Students will also use TI® graphing calculators ranging from the 83 up to the 89 model to compute numerical answers to textbook problems. Occasionally, students will use computers in class to access websites such as AP Central, Google Classroom, G-Suite, and PHET that feature Java Applets®/HTML5 which simulate physical situations, allowing them to vary one variable to see the effect on another variable.

Digital Etiquette:

All students are to conduct themselves in accordance with district and school policies in all forms of digital communication and student learning management systems (i.e. Google Classroom, Zoom, Google Meets, etc.). Students are expected to attend each class virtually when applicable and check Google Classroom daily for the most up-to-date information and assignments in the course.

Technology Used by the Instructor

The instructor will use much of the equipment described in the student technology section to perform demonstrations of principles that are otherwise difficult to grasp. The instructor will use Google Classroom and G-Suite as an aide in lecturing and delivering curriculum to the students.

Office Hours

The instructor will be available 30 minutes before first period and during snack. Students can request for appointments to meet.

Parents/Guardians:

I encourage every student's parents and/or guardians to be actively engaged with their student's progress. Please feel free to reach out to me via email and I highly recommend joining your student's [Google Classroom](#) to receive weekly progress updates.

Please see the [Student Handbook](#) for detailed school policies.

Syllabus Disclaimer

The syllabus is a statement of intent and serves as an implicit agreement between the instructor and the student. Every effort will be made to avoid changing the course schedule but the possibility exists that unforeseen events will make syllabus changes necessary. Remember to check your BOHS email and Google Classroom site often.