



Physics I Syllabus 2021-2022

Instructor: Orlando Montalvo
Phone: 580-5300 ext. 1435
Email: see website

Room: 405
Conference Period: 5th Block
Tutoring: Tues & Thursday 7:30am-8:00am

Course Description: This is a 1st year general physics course and will include the topics of kinematics, force & motion, energy, momentum, heat, thermodynamics, light, sound, electricity, magnetism, electromagnetism, and modern physics concepts.

Course Information: The course is an algebra-based physics and use of math is required. The student must have pencils or pens, a scientific calculator, (a TI-30 is more than adequate), and a 3-subject notebook. Occasionally, the teacher will provide all lab elements; therefore, not all labs will be formally written up.

Course Outline: Instructional days will include checking/reviewing assignments, quizzes, writing assignments, lecture/explanation, lab activities and individual practice/questions/feedback.

Textbook and Resources: Serway & Faughn Physics, teacher-made, Serway & Faughn and LTF Labs, science/technology-based videos and documentaries, internet, scientific periodicals, newspapers, and other relevant media.

Instructional Procedures and Support: The teacher will be available for tutoring in the morning. It is the student's responsibility to ask for help when needed and for making the required transportation arrangements. Retesting will be available in accordance with SISD High School Grading Policies.

Classroom Management Procedures: District Policy Will Be Enforced.

Classroom Expectations:

As per district policy, major exams/assignments/lab write-ups will account for 60% of the student's grade. Lab questions, quizzes, and home/class work will account for the remaining 40%. All students will be given 2 additional days to make up a major assignment if late (with a progressive grade penalty of 15 points per day).

Statement for Academic Dishonesty

Academic integrity is fundamental to the activities and principles of our school. No student shall cheat or copy the work of another. Plagiarism, the use of another person's original ideas or writing as one's own without giving credit to the true author, will be considered cheating, and the student will be subject to academic discipline that may include loss of credit for the work in question.

Course Schedule:

<u>Week</u>	<u>Topic</u>	<u>Required Reading</u>
<u>Unit 1</u>		
Week 1	Review Week: Accuracy Precision, Equation Solving, Rounding, Units/Variables, Scientific Notation, and Scales.	Chapter 1
Week 2,3	Construct/Interpret graphs; calculate displacement, velocity and acceleration in 1-Dimension.	Chapter 2
Week 4	Scalar vs. Vector; Calculate displacement, velocity and acceleration in 2-Dimensions.	Chapter 3
Week 5	Forces; Calculate net external force, acceleration and mass of an object; Newton's Laws.	Chapter 4
Week 6	Finish Newton's Laws; calculate tangential velocity, centripetal acceleration and force that maintains circular motion.	Chapter 4, 7
<u>Unit 2</u>		
Week 7	Calculate work, kinetic energy & potential energy.	Ch. 5
Week 8	Conservation of mechanical energy & power.	Ch. 5
Week 9	Semester Exam	Ch. 1-5, 7
<u>Unit 3</u>		
Week 10	Conservation of Momentum, Impulse Momentum Theorem	Ch. 6
Week 11	Elastic vs. Inelastic collisions, Temperature, Specific Heat, Conduction, Convection, Radiation.	Ch. 6, 9, 10
Week 12	Simple Harmonic Motion, Properties of waves, Transverse Vs. Longitudinal, Calculate wave speed.	Ch. 11-15
<u>Unit 4</u>		
Week 13	Reflection, refraction, diffraction, interference, resonance, Doppler Effect, Thin Lens equation, Duality of Light, Photoelectric Effect	Ch. 11-15, 21, 22
Week 14	Static vs. Current Electricity; Calculate electric force, current, potential difference and resistance.	Chapter 16, 17
Week 15	Series vs. Parallel Circuits; Complex circuits; calculate current, potential difference and resistance. Fundamental forces, magnetic field lines.	Ch. 18, 19, 20, 22
Week 16	Semester Exam	Ch. 6, 9-22