

Physics I Syllabus

Fall 2017-2018

Instructor: Angie L. Culberson-Espinosa
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Room: 402
Conference Period: 2nd Block
Tutoring: Tues & Thur 7:30-8:00 AM

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 5 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. 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 up to 3 additional school days to redo a failing major assignment, but the grade will be no higher than a 70. 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: Sig Figs, Accuracy Precision, Equation Solving, Rounding, 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	Static vs. Current Electricity; Calculate electric force, current, potential difference and resistance.	Chapter 16, 17
Week 8	Series vs. Parallel Circuits; Complex circuits; calculate current, potential difference and resistance. Fundamental forces, magnetic field lines.	Ch 18, 19, 20, 22
Week 9	Semester Exam	Ch. 1-4, 7, 16-17, 19-20, 22
<u>Unit 3</u> Week 10	Calculate work, KE, and PE, and power.	Ch. 5
Week 11	Conservation of Momentum, Impulse Momentum Theorem	Ch. 6
Week 12	Elastic vs. Inelastic collisions, Temperature, Specific Heat, Conduction, Convection, Radiation.	Ch. 6, 9, 10
<u>Unit 4</u> Week 13	Properties of waves, Transverse Vs. Longitudinal, Calculate wave speed.	Ch. 11-15
Week 14	Reflection, refraction, diffraction, interference, resonance, Doppler Effect, Thin Lens equation, Duality of Light, Photoelectric Effect	Ch. 11-15, 21, 22
Week 15	Group Presentations	
Week 16	Semester Exam	Ch. 5-6, 11-15, 21-22