# WSHS Physics Courses at a Glance

| | Active Physics | Regular Physics 1 (Gr. 11-12) | AP Physics 1 (Gr. 11-12) | AP Physics 2 (Gr. 11-12) | AP Physics C: Mechanics (Gr. 11-12) | Astronomy (Gr. 11 - 12) |
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| **Description of Course** | Students explore physics using hands-on approach expect that there will be demonstration and experimentation throughout the course. | Topics include traditional physics subjects of motion, dynamics, energy momentum, electricity and magnetism & waves. | Students explore principles of Newtonian Mechanics (including topics related to motion, dynamics, work, energy, rotational motion, power, and simple harmonic motion) and fluids | Students explore their understanding of physical models and phenomena in thermodynamics, electricity, magnetism, geometric optics, acoustics, and modern physics | Students will learn about various Mechanics topics, such as kinematics, forces, rotation, energy, momentum, and wave motion. Introductory integral and differential calculus is used throughout this course. | Astronomy addresses such topics as the universe, universal laws, galaxies, stellar evolution, the solar system and its motion, and the exploration of space. This course is designed to be an in depth study of the concepts of astronomy. |
| **Are there any prerequisites or Corequisites?** | **Prerequisite:** None | **Prerequisite:** Biology 1 or Chemistry 1 **Co-requisite** Geometry | **Co-requisite:** Algebra II **Recommended:** Concurrent enrollment in Pre-calculus | **Prerequisite:** AP Physics 1 **Can be taken concurrently with AP C: Mechanics | **Prerequisite:** Chemistry **Corequisite:** Concurrent enrollment in, or completion of, either AP Calculus AB or BC and/or Multivar | **Prerequisite:** Biology and another science |
| **Recommended Course History** | | Pass Geometry with a minimum of a C- or better<br>If Algebra II with a minimum of a C- or better<br>Chem with a minimum of a C- or better | Have taken Honors Algebra 2 or Pre-Calc and passed with a minimum of C<br>Honors Chem/Reg Physics with a minimum of a C or better<br>or a B in Reg. Chem and Reg. Algebra 2 | Have taken Honors Algebra 2 or Pre-Calc and passed with a minimum of C<br>C in Honors Chem/Reg Physics or a B in Reg. Chem | Precalc and<br>AP Physics 1 earning a C or Physics 1 earning a B<br>Concurrently taking AP Calculus or above | |
| **Recommended Skills** | ● Be able to substitute values for a variable in an equation<br>● Be able to identify important information in a word problem | ● Solving problems by using multiple equations<br>● Be able to solve Algebraic/Trig skills (i.e. Be able to solve | ● Solve algebraic equations by isolating a variable and solve for the unknown<br>● Be able to solve by using equation substitution<br>● Be able to solve | ● Solve algebraic equations by isolating a variable and solve for the unknown<br>● Be able to solve by using equation substitution<br>● Be able to solve | Be able to apply multiple physics concepts to solve a given scenario | ● Read a multi paragraph paper and be able to identify important information<br>● Substitute values into an equation and solve using algebra<br>● Engage in group activities and experiments and remain |

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| | ● Engage in group activities and experiments and remain on task given a finite time constraint<br>● Completing and organizing assignments/homework as defined by the teacher | ● ∆d=1/2v+votand solve for v)<br>● Analyze data and draw conclusions in order to answer questions by connecting the data to content covered in class<br>● Conduct labs and produce conclusions based on lab results<br>● | Algebraic/Trig skills (i.e. Be able to solve<br>● ∆d=1/2v+vot and solve for v)<br>● Synthesizing core ideas from written material<br>● Analyze data and draw conclusions in order to answer open ended questions by connecting the data to content covered in class<br>● Design and conduct inquiry based labs and produce formal lab conclusions/explanations | Algebraic/Trig skills (i.e. Be able to solve<br>● ∆d=1/2v+vot and solve for v)<br>● Synthesizing core ideas from written material<br>● Analyze data and draw conclusions in order to answer open ended questions by connecting the data to content covered in class<br>● Design and conduct inquiry based labs and produce formal lab conclusions/explanations | | on task given a finite time constraint<br>● Completing and organizing assignments/homework as defined by the teacher |
| **Will I do labs?** | **Minimum of 1 Lab per Unit** | **Minimum of 1 Lab per Unit** | **~ 1 Lab activity per week** | **~ 1 Lab activity per week** | **~ 1 Lab activity per week** | |
| **Assessments** | **Unit based tests/quizzes** | **Unit based tests/quizzes** | **Cumulative tests every 3-5 weeks** | **Cumulative tests every 3-5 weeks** | **Cumulative tests every 3-5 weeks** | **Unit based tests/quizzes** |
| **Can I earn College Credit?** | **No** | **No** | **Potential credit with a qualifying score on AP exam. Equivalent to a general science credit for an algebra based course for non-STEM majors** | **Potential credit with a qualifying score on AP Exam, with possible placement out of 1st semester calculus based Physics course for STEM majors.** | **Potential credit with a qualifying score on AP Exam, with possible placement out of 1st semester calculus based Physics course for STEM majors.** | |