

Science Course Descriptions – updated January 2023

Background: In 2016, science teachers worked together in CT's to put together guidelines for students who wish to take specific courses (see below). The guidelines are based on careful longitudinal observations of commonalities among students that were successful in a specific course. Students that don't have these characteristics can be successful as well, however, they should think carefully about their course load and prior courses taken before selecting classes. This was revised when environmental science was added, and it has been updated this year as well (2022 -2023).

*****Most common course sequence (check requirements for each course below):**

9th grade: Biology or Honors Biology

10th grade: Chemistry or Honors Chemistry

11th grade: You have options! Physics (Honors and Standard), Geosystems (Honors and Standard), AP Chemistry, AP Biology, AP Environmental Science, Anatomy and Physiology, Genetics & Biotech

12th grade: Same as 11th grade, however, you could also take Astronomy or AP Physics C

Standard vs. Advanced diploma requirements:

Standard diploma:

- 3 sciences in at least two different science disciplines (Biology, Chemistry, Physics, Earth Science)

Advanced diploma:

- 4 sciences in at least three different science disciplines (Biology, Chemistry, Physics, Earth Science)

Environmental Science: We do NOT offer this for general education classes. We have an ES class for level ½ ESOL students and self-contained SPED ES classes. The purpose of this class is to help 9th graders that struggled in middle school and need to reignite their passion for science and regain confidence before taking Biology. Typically, the bio teachers can get students through Biology without a problem which is the reason we don't offer this class at Woodson.

Standard vs. Honors Biology: Students that are often successful in Honors Biology did well in their 7th and 8th grade science courses and are committed to designing and implementing a rigorous science fair project.

AP Biology: Students that are often successful in AP Biology received an A in Biology and Chemistry and are CURRENTLY succeeding in advanced classes. Students that are co-enrolled in Algebra II often struggle in AP Biology so it's recommended that they are in a math class that is at a higher level than Algebra II. In addition, these students show a strong attendance record. Finally, these students have time in their schedule to properly study. Excessive AP courses, extracurricular activities, or family/work commitments all can impact grades by taking away study time. There is **a lot** of reading in AP Biology so strong reading comprehension is essential.

Prereqs: Biology 1 and Chemistry 1

HAP: Student must be enrolled in 11th or 12th grade and must have completed Biology 1 and Chemistry 1. Most students can be successful in this class, however, there is a LOT of vocabulary involved and they should be good with dissections.

Genetics and Biotech: Students that are often successful in APES received an A in Standard Biology and Chemistry and a B or better in Honors Biology and Chemistry. In addition, these students earned a B or better in Algebra 1 and passed the Biology, Chemistry, Algebra and Geosystems SOL's (if taken). A strong attendance record is also important.

Prerequisite: Biology 1 and Chemistry 1

Standard vs. Honors Chemistry: Students that are often successful in Honors Chemistry should have received an A in Biology AND have a consistent record of good math grades. A strong attendance record is also important. *Prereqs: 1 lab science, Algebra 1 (in addition, Honors has a corequisite of Algebra 2)*

AP Chemistry: Students that are often successful in AP Chemistry passed Biology and Chemistry with an A and are CURRENTLY succeeding in advanced classes. These students show consistent records of good math grades and have a strong attendance record. Finally, these students have time in their schedule to properly study. Excessive AP courses, extracurricular activities, or family/work commitments all can impact grades by taking away study time.

Prerequisite: Chemistry 1 (recommended: Physics and Pre-calc)

Standard vs. Honors Physics: Students that are often successful in Honors Physics should have received an A in Standard Chemistry or a B or better in Honors Chemistry AND have a consistent record of good math grades and a strong attendance record. Students should also ask themselves; “If you are taking Pre-Calc or above, why aren’t you taking Honors Physics?”

Prerequisite: 2 lab sciences (in addition, Honors Physics has a corequisite of Precalculus and it is recommended that all students sin Physics have already completed Algebra 2)

AP Physics: Students that are often successful in AP Physics passed Standard Physics with an A or passed Honors Physics with a B or better. In addition, these students show consistent records of good math grades (in addition to a co-requisite of an AP Calculus class) and a strong attendance record. Finally, these students have time in their schedule to properly study. Excessive AP courses, extracurricular activities, or family/work commitments all can impact grades by taking away study time.

Prerequisite: Physics 1 (in addition, AP Physics has a corequisite of AP Calculus)

Astronomy: Student must be enrolled in 12th grade and must have completed two laboratory sciences. Most students can be successful in this class, however, it involves a very small amount of math.

Standard vs. Honors Geosystems: Students that are often successful in Honors Geosystems have earned a B or better in all previous science and math classes and have passed the Biology and Chemistry SOL’s. A strong attendance record is also important.

Prerequisite: Biology 1 and one other lab science!

AP Environmental Systems: Students that are often successful in APES received an A in Standard Biology and Chemistry and a B or better in Honors Biology and Chemistry. In addition, these students earned a B or better in Algebra 1 and passed the Biology, Chemistry, Algebra and Geosystems SOL’s (if taken). A strong attendance record is also important.

Prerequisite: Biology 1 and Chemistry 1
