

NATURAL SCIENCES AREA, BACHELOR OF ARTS

Natural Sciences Area Major Requirements

(Also see Requirements of a Bachelor's Degree (<https://e-catalogue.jhu.edu/ksas-wse/undergraduate-policies/academic-policies/requirements-bachelors-degree/>.)

The Natural Sciences Area major allows students to combine appropriate upper-level courses in two different areas of natural science. Students may bridge biology and chemistry, chemistry and physics, or some other combination as long as the curriculum forms a coherent whole. The major prepares students for careers in various health sciences, such as medicine, dentistry, veterinary science, and more, providing that the introductory courses chosen by the student include those prescribed for admission to these professional schools.

Students selecting the Natural Sciences Area major can also go on to graduate study in a natural science. In some cases, they may have to take some additional prerequisite coursework for graduate school admissions, depending on courses completed as part of the major.

Minimum GPA Standards

Students must maintain an overall grade point average of 2.0 in their major. Satisfactory/unsatisfactory graded courses may not count towards major requirements.

Double Major Restrictions

Students majoring in another science major may not double major with the Natural Sciences Area Major. These majors are: Behavioral Biology, Biology, Biophysics, Chemistry, Cognitive Science, Earth and Planetary Sciences, Environmental Science, Environmental Studies, Physics, and Neuroscience. Students may also not double major with the Medicine, Science, and Humanities major.

Writing and Communication in the Major

Students must complete at least 6 credits of Writing and Communication foundational ability coursework in one major. For this major, students would be able to fulfill this requirement by selecting 6 credits of elective courses in the major that are designated as Writing and Communications courses.

The requirements of the natural sciences area major are:

Code	Title	Credits
Science and Math Core Courses		
AS.110.106 or AS.110.108	Calculus I (Biology and Social Sciences) Calculus I (Physical Sciences & Engineering)	4
AS.110.107 or AS.110.109 or AS.110.113	Calculus II (For Biological and Social Science) Calculus II (For Physical Sciences and Engineering) Honors Single Variable Calculus	4
AS.030.101 & AS.030.105	Introductory Chemistry I and Introductory Chemistry Laboratory I	4
AS.030.102 & AS.030.106 or AS.030.103	Introductory Chemistry II and Introductory Chemistry Laboratory II Applied Chemical Equilibrium and Reactivity w/lab	4

AS.171.101 or AS.171.103 or AS.171.107	General Physics: Physical Science Major I General Physics I for Biological Science Majors General Physics for Physical Sciences Majors (AL)	4
AS.171.102 or AS.171.104 or AS.171.108	General Physics: Physical Science Major II General Physics/Biology Majors II General Physics for Physical Science Majors (AL)	4
AS.173.111	General Physics Laboratory I	1
AS.173.112	General Physics Laboratory II	1
Science Electives		
Science and Math credits at any level ¹		18
At least five courses of upper level science electives at the 300- or 400-level in at most 2 departments ²		15
Humanities and Social Science Electives ³		
At least four courses (at least 3 credits each) of electives at the 300- or 400-level in at most 2 departments or cross-listed with a department carrying either a Culture and Aesthetics, Citizens and Society, or Ethics and Foundations foundational ability tags.		12
Total Credits		71

¹ While students typically take these credits at the 100- or 200-level, 300- or 400-level credits not used to fulfill the upper-level science elective credits may be used. Courses may be selected from the following departments: Behavioral Biology (AS.290.xxx), Biology (AS.020.xxx), Biophysics (AS.250.xxx), Chemistry (AS.030.xxx), Cognitive Science (AS.050.xxx), Earth and Planetary Sciences (AS.270.xxx), Neuroscience (AS.080.xxx), Physics (AS.171.xxx, AS.172.xxx, AS.173.xxx), Psychology (AS.200.xxx), and Mathematics (AS.110.xxx) and all courses must carry the Science and Data foundational ability tag.

² Laboratory, research, internship, and independent study courses may not be used. Permission to count courses from more than two departments is often granted if the material involved constitutes a coherent program (for example, biochemistry courses from Biology, Biophysics and Chemistry). Courses must be offered in the following departments or cross-listed with: Behavioral Biology, Biology, Biophysics, Chemistry, Cognitive Science, Earth & Planetary Sciences, Mathematics (6 cr limit), Neuroscience. Physics & Astronomy, or Psychological & Brain Sciences (6 cr limit), and all courses must carry the Science and Data foundational ability tag.

³ Courses from these departments, regardless of the foundational ability tag, are excluded from this requirement: Biology, Chemistry, Mathematics, Biophysics, Earth & Planetary Sciences, Public Health Studies, Physics & Astronomy, Neuroscience, Psychological & Brain Sciences, Behavioral Biology, or Cognitive Science.

At the time of catalogue publication, current laboratory courses excluded from the upper level science course requirement include: AS.020.340, AS.020.315, AS.020.316, AS.020.361, AS.020.377, AS.030.305, AS.030.306, AS.030.356, AS.290.303, AS.290.306, AS.250.383, AS.270.355, AS.080.328, and AS.173.308. Other laboratory courses may be excluded at any time. Research, internship and independent study courses excluded are all courses at the 500 level.