

INTEGRATIVE SCIENCE, B.S. (CAPITAL)

Begin Campus: Any Penn State Campus

End Campus: Harrisburg

Program Learning Objectives

- **Interdisciplinary Thinking:** Integrate knowledge among science subfields and between science and other disciplines in theoretical and practical ways.
- **Overall Program:** See how well the students think the program is providing them support and opportunities in several key learning outcomes.
- **Process of Science:** Apply the elements of the process of science such as posing questions, generating novel hypotheses based on the scientific literature; developing appropriate technical skills for research; designing/conducting experiments to test hypotheses in laboratory and/or field settings; summarizing/interpreting data; integrating/evaluating findings in the broader scientific field to construct new knowledge; and/or participating in the peer review/revision process.
- **Quantitative Reasoning and Data Science:** Apply basic quantitative competencies such as algebra, probability, statistics, unit conversions, and fundamental principles; organize, summarize, and interpret quantitative data; use modeling/simulation to approach problems from across various scales; and/or find and analyze large databases using statistical methods and/or other approaches.
- **Science and Society:** Explore the impacts of scientific research on society and the environment and how society influences/relies on research to inform decision-making; evaluate the ethical implications of scientific research; recognize ethical issues in a variety of settings; and/or describe how different perspectives and the resulting alternative approaches might be evaluated using ethical principles to identify a solution to an issue.
- **Verbal Communication:** Logically present scientific concepts in a compelling manner suited to the audience with appropriate language, supporting material and references.
- **Written Communication:** Logically document/relate scientific concepts in a compelling manner suited to the audience with appropriate supporting data and references.