

School of Sciences
Biological and Physical Sciences Degree (B.A./B.S.)
Assessment (2020-2025)

I. Mission statement

The mission the Biological and Physical Science (BIPH) program is to provide a broad background in the sciences, mathematics and informatics that is uniquely suited to a student's specific educational needs, and to prepare students for entrance/admission to professional programs (medicine, dentistry, optometry, etc.). The mission is consistent with the IU Kokomo Mission Statement.

II. Student learning outcomes

Learning outcomes related to understanding scientific truth

Learning Outcome 1: Students will explain the role of data collection and analysis in the development of scientific knowledge

Learning Outcome 2: Students will explain the self-correcting nature of science

Learning Outcome 3: Students will collect meaningful data from an experiment

Learning Outcome 4: Students will apply mathematical techniques to analyze collected data using current technology

Learning Outcome 5: Students will draw relevant conclusions from experimental results

Learning outcomes related to communicating in the scientific tradition

Learning Outcome 6: Students will utilize scientific terminology correctly

Learning Outcome 7: Students will express the results of scientific work clearly and concisely

Learning Outcome 8: Students will explain the solutions to problems using correct mathematical vocabulary and mathematical notation

Learning outcomes related to basic principles of the biological sciences OR the physical sciences OR the mathematical sciences OR informatics.

Learning outcomes for Biology

Learning Outcome 9: Students will explain similar/identical features of living systems

Learning Outcome 10: Students will explain biodiversity

Learning Outcome 11: Students will describe the cellular and molecular basis of genetics

Learning outcomes for the Physical Sciences

Learning Outcome 12: Students will explain the relationship between the structure of substances and their physical properties and reactivity at the molecular and atomic levels

Learning Outcome 13: Students will explain the interaction of the forces of nature, such as electromagnetism, gravity, and nuclear forces

Learning Outcome 14: Students will explain the unifying principle of plate tectonics and how it relates to the origin of Earth's physical phenomena, including rocks, volcanoes, and earthquakes

Outcome for the Mathematical Sciences

Learning Outcome 15: Students will perform algorithmic and logical procedures

Learning Outcome 16: Students will interpret the results of their computations

Learning Outcome 17: Students will use appropriate technology

Learning Outcome 18: Students will formulate a hypothesis and determine its validity

Outcome for Informatics

Learning Outcome 19: Students will utilize computing terminology correctly

Learning Outcome 20: Students will explain benefits/risks of technology reliance in society

Learning Outcome 21: Students will use fundamental programming elements