

School of Sciences

Biology Degree (B.A./B.S.) Assessment (2020-2025)

I. Mission statement

The mission of the School of Sciences is to provide students with the undergraduate academic, research, and experiential background that will enable them to pursue meaningful careers in science-, mathematics- and informatics-related fields or to meet general education or program requirements in their major. The purposeful combination of theoretical and practical educational experiences, coupled with the flexibility of the available degrees will enable students to prepare for a wide variety of graduate programs, professional schools, secondary school teaching careers, and/or entry into the workplace. Students graduating from the School of Sciences will be lifelong learners and able to make positive contributions in a world where quantitative and scientific literacy, sustainability, and environmental quality are being challenged.

As part of the broader mission of the School of Sciences, the mission of the biology program is to provide students with the opportunity to explore the broad range of basic disciplines and topics in the biological sciences including biodiversity and human interactions. Students will learn techniques and methods through experiential learning activities, experiments, and projects.

II. Student learning outcomes

Learning outcomes related to “core content”

Learning outcome 1: Students will describe the phylogenetic interrelationships between living organisms.

Learning outcome 2: The students will explain similar/identical features of living systems.

Learning outcome 3: Students will describe chemical and molecular processes fundamental to living organisms.

Learning outcome 4: Students will describe the interaction of various living organisms and their environment.

Learning outcome 5: Students will describe the cellular and molecular basis of genetics.

Learning outcomes related to “methodology and techniques”

Learning outcome 6: Students will demonstrate the basic laboratory methods biologists use to explore living organisms.

Learning outcome 7: Students will develop hypotheses and design experiments related to biological systems.

Learning outcome 8: Students will evaluate the outcomes of scientific experiments.

Learning outcome 9: Students will be able to effectively communicate scientific ideas and concepts.

Learning outcomes related to “biodiversity and human interactions”

Learning outcome 10: The students will explain biodiversity.

Learning outcome 11: The students will discuss the effect of the natural environment on humans.

Learning outcome 12: The students will evaluate the implications of human modification of the environment and assess consequences.

Learning outcomes related to “diversity” (these learning outcomes were approved by the School of Sciences faculty for use in all degree programs within the School and will be assessed annually)

Learning outcome 13: As future leaders, administrators, policymakers, and managers in pure and applied sciences, students will demonstrate an understanding of high impact practices and policies that foster greater diversity in these fields.

Learning outcome 14: Students will recognize the relevance and significance of the contributions of and collaborations with different cultural groups within various pure and applied sciences disciplines.

Learning outcome 15: Students will explain the disproportionate impacts of sustainability issues (e.g., climate change, population growth, waste disposal, loss of biodiversity, renewable energy, etc.) on various human populations and ecosystems.