UNIVERSITY OF WISCONSIN
WHITEWATER

ACADEMIC ASSESSMENT

Biological sciences- cell biology & physiology

Mission Statement

- Develop and deliver outstanding and diverse curricula; preparing students for careers in the biological sciences, for graduate training in biological sciences, and for entry into health professional programs.
- Offer up-to-date courses relevant to the needs of modern Biology that demand high standards of academic performance, preparing biology students for success in post-baccalaureate programs and in a global job market.
- Offer targeted Emphases in Biological Sciences majors; through imparting knowledge and developing skills requisite for careers within the biological sciences.
- Offer well-informed and accurate academic advising to students in the Biological Sciences majors, Combined Science Business major, General Science-Broadfield Biology major, and selected pre-health professional advising tracks; delivered in supportive and constructive advising sessions.
- Offer opportunities in research and career-related internships, recognizing that such activities are essential to a complete biology education.
- Improve science literacy for student citizens, consistent with the philosophy of liberal studies, and the needs of the College of Letters and Sciences and the University of Wisconsin – Whitewater.
- Develop and maintain a diverse community of scholars in the field of Biological Sciences.
- Require high standards in teaching, scholarship, and integrity for successful candidates for faculty positions, for continuing faculty and staff, and for tenure and promotion.
- Conduct original research in biology and in science pedagogy; presenting such research at regional, national, and international professional meetings and publishing them in peer-reviewed professional journals.
- Serve the College of Letters and Sciences, the University of Wisconsin-Whitewater, the University of Wisconsin System, and the greater community in committees and other structures development or advocacy organizations in our roles as educators, science professionals, university faculty, and community citizens.
- Accept committee work and other service opportunities at all levels of the University System consistent with our talents, training and interests.
- Serve as a community resource for biological information; hosting and visiting regional schools, youth and civic groups, and symposia.

Student Learning Outcomes

Student learning outcomes (SLOs) are statements of what a student will know or be able to do when they have completed a program. They represent the knowledge and skills a program has determined are most important for students to gain from that program. The most useful SLOs are specific and measurable so the program can accurately assess the degree to which students have achieved each outcome, and they align with college and institution mission and values. Data on achievement of SLOs is used to make improvements in the program and increase student success.

Biological Sciences Department Student Learning Goals (Cell Biology and Physiology):

- Demonstrate Knowledge of Major Biological Principles & Concepts:
    - Recall and apply core principles and concepts of suborganismal, organismal & interorganismal biological sciences
    - Recall and apply core principles and concepts of a subset of biological studies, according to the student's chosen emphasis
    - Possess an awareness of fields of biology and career opportunities in each
    - Understand the scientific method
- Apply Intellectual & Practical Biological Science Skills:
    - Use the scientific method for inquiry and analysis
    - Think critically and creatively about new information
    - Effectively communicate orally and in writing: write in a standard scientific research format, and present ideas in a standard scientific oral and visual presentation
    - Demonstrate quantitative literacy: perform and interpret basic statistical analyses of data and mathematical models of biological concepts as appropriate to the student's emphasis
    - Demonstrate biological information literacy: read, analyze & understand scientific articles & texts
    - Contribute to team/group problem solving: conduct, present, and peer-review research and other collaborative projects
    - Perform standard techniques and use standard equipment for field and laboratory research
- Integrate biology with personal & social responsibility, by applying biological principles, knowledge & skills to:
    - Understand biological impacts of local and global policies and actions
    - Understand how global and cultural differences can affect biological issues
    - Understand current bioethical issues
    - Learn and understand new biological breakthroughs & ideas as a foundation for lifelong learning
- Integrate knowledge from multiple fields and disciplines
    - Synthesize chemical and physical laws with biological phenomena
    - Synthesize suborganismal, organismal and superorganismal biological concepts
    - Synthesize basic evolutionary principles with all biological fields

In addition, students who major in Biological Sciences-Cell Biology and Physiology will also meet the following student learning outcomes:

Subject Matter

- Students have a broad knowledge base in a variety of areas in the biological sciences.
- Students understand major concepts and themes in biology.

- Students will relate chemical and physical laws to biological phenomena.

Cognitive Development

- Students will think critically and solve problems creatively
- Students will present effective oral and written persuasive arguments.
- Students will read and understand scientific articles and texts.
- Students will understand the different areas of biology and the career opportunities in each, in order to make well considered decisions about future studies and career goals.

Skills

- Students will develop hypotheses, collect and analyze data, and report results scientifically.
- Students will perform standard techniques, and use standard equipment for field and laboratory research.
- Students will conduct thorough reviews of biological literature germane to their selected sub discipline.