UNIVERSITY OF WISCONSIN
WHITEWATER

ACADEMIC ASSESSMENT

Bioinformatics minor

Mission Statement

The Bioinformatics Minor provides students with marketable skills that are required to solve computational problems in biological, biochemical, biomedical, and psychological research and in related fields. The curriculum of the bioinformatics minor is firmly rooted in interdisciplinary education, applying coursework from several disciplines to introduce conceptual, computational, and quantitative methods used in this rapidly growing field. Through coursework, hands-on training, and experiential learning, including independent study and undergraduate research, students will become aware of the challenges and opportunities inherent in interdisciplinary bioinformatic research. Beyond the core requirements for the minor, students will develop an in-depth understanding of one or more areas of their own choosing, including but not limited to biology, biochemistry, computer science, health science, mathematical biology, and psychology.

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.

Students who successfully complete the Bioinformatics Minor will be able to:

- Demonstrate knowledge of the role of high-throughput, large-scale research projects in contemporary inquiry in biology and biology-related fields, the range of problems that are under active investigation, and the need for continual learning and skill development.
- Demonstrate knowledge of database construction and manipulation and the role of large-scale databases in analysis of biological and biology-related research problems.
- Competently implement algorithms and statistical strategies used in analysis of biological and biology-related research problems.

- Be proficient in the use of Python, an interpreted programming language, to implement computational solutions to biological and biology-related research problems.

- Be proficient in the use of a compiled programming language (e.g., Java or C++) to implement computational solutions to biological and biology-related research problems.

- Integrate these skills in the design of effective strategies for use in biological, biochemical, medical, and psychological research.