Preliminary Annual Academic Assessment Report, AY 2024-2025

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Bachelor of Science in Biological Engineering (BSBE)

Student Learning Outcomes:

1. an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
2. an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
3. an ability to communicate effectively.
4. an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgements, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
5. an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
6. an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgement to draw conclusions.
7. an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Assessment and Evaluation: AY 2024-2025

The faculty of the Department of Biological & Agricultural Engineering is in the process of evaluating Student Outcomes assessment data via email and shared directories in May-Jun 2025, in anticipation of its annual faculty retreat, to be held August 13, 2025. These outcomes assessments and course self-review materials are in progress from course instructors. Our continuous quality improvement plan requires assessment of half of the student outcomes each year (which included Outcomes (1), (2), (5) and (7) in 2024-2025). The results of the analysis are forthcoming as course instructors are assembling their materials to incorporate student feedback.

Changes made to courses or instructional facilities following previous report:

1. We have replaced standing virtual machines in our department computer-lab/instruction room with docking stations for student laptops
2. The Professionalism course is now open to those with Junior standing

Additional data collection and anticipated changes to the degree program:

As part of our commitment to continuous improvement, we also received helpful feedback from our **external advisory board**, in a meeting held May 1, 2025.

This meeting helped provide input regarding departmental plans to teach 150 undergraduates and double the number of graduate students. The board recommended additional recruiting strategies and departmental support for activities like the ASABE student rally or opportunities such as first-year scholarships.

The board also supported our move towards dividing the two current 3-credit-hour (CH) Methods courses into six individual 1-hour courses, as well as offering additional 1CH courses as technical electives. The board especially encouraged courses on technical writing, computer programming, and problem solving.

The department will continue to monitor direct measurements from course materials, attend to other lines of evidence such as FE exam results, senior design team questionnaires, exit surveys, and feedback from alumni and stakeholder groups.