

REVIEW OF THE B.S. IN ENGINEERING TECHNOLOGY

Classification of Instruction Programs (CIP) Code: 15.0000

Engineering Technologies/Technicians, General

Review Outcome. The Academic Planning Committee, as a result of this review process, finds the B.S. in Engineering Technology to be in Good Standing.

The Academic Planning Committee recognizes that many of the efforts and activities that led to the development of the self-study report were accomplished during the time period coinciding with the COVID-19 pandemic. The committee appreciates the thoughtful and critical self-study report that incorporated ample evidence to support the claims that were made. The self-study process involved multiple stakeholders, including faculty, students, and alumni. Engineering Technology at Illinois State University is an applied program that allows students to integrate engineering principles with modern technology. Engineering Technology focuses on the management of processes and materials through hands-on, application-oriented experiences. The curriculum is delivered by faculty members who collaborate to provide foundational courses, specialized courses, and field experiences. The committee commends the program for its strong alignment with the missions and goals of the Department, College and University.

The committee commends faculty efforts to grow the program's enrollment during the period covering the program review cycle (from 90 to 110 students). This has included active participation in University events (e.g., open houses, Redbird Days, Presidential and University Scholar Days), individual tours of facilities during campus visits, student ambassadors, and an annual newsletter that is distributed to high schools and community colleges. We further commend the program faculty for their efforts that have resulted in consistent enrollment of students from traditionally underrepresented groups, ranging between 24 and 38 percent over the past five years, consistently above the Department and University averages. We also note the program's efforts towards securing student scholarships as part of fundraising through private and corporate donations also has aided in the Department's recruitment efforts during the current review cycle.

The committee recognizes the program faculty's commitment to activities that support student success. We commend the program on its ability to continue to limit enrollments in many of its courses, which is in keeping with the University's commitment to individualized attention by fostering a small-college atmosphere with large-university opportunities. The committee commends the program for the creative and varied co-curricular options it provides its students to meet their education and career goals. These include a wide variety of student organizations (e.g., Engineering Technology club), many of which provide students opportunities to be actively engaged with the community and local industry. The committee applauds the program for providing funding to support student travel to attend conferences. We commend the program faculty and staff for supporting students by providing high availability and access to specialized facilities and equipment that is central to the discipline. The committee commends the program for increasing student participation in the Honors program on campus (over the last five years participation has increased from 0 to 4.8 percent). We appreciate the Department's commitment to monitoring its undergraduate academic advising throughout the current review cycle and commend the program advisors for their efforts to support students transferring both into and out of the major. The committee notes the fall-to-fall retention rates are generally below university-wide rates overall for external transfer and especially first-time-in-college (FTIC) students. The committee notes an increase in students completing the degree in four years or less over the past five years (from 63.9 to 71.3 percent). We also note that the alumni employment data indicate strong outcomes for program graduates.

The committee commends the faculty's substantial work to revise the curriculum during the period of review based on feedback from multiple stakeholders to ensure that it is representative of current trends and needs within the engineering technology industry. These efforts included the development of two new courses, revisions to the core and elective course lists, course prerequisite revisions, an increase in required credit hours in the program from 75 to 78, and increasing achievement standards for some courses. We further commend the program faculty for their continued accreditation by the Association of Technology, Management, and Applied Engineering (ATMAE) and wish them well for their reaccreditation efforts in fall 2022.

The committee notes the faculty members for their scholarly contributions to the B.S. in Engineering Technology program. Faculty members are active researchers who publish in peer-reviewed journals, book chapters, and textbooks, and present primarily at domestic professional conferences.

The committee appreciates the in-depth analysis of aspirational programs. As part of this analysis, the program faculty identified multiple institutions with similar programs that excel in ways that our program may aspire to. The committee also recognizes that faculty developed specific action plans to implement similar initiatives as those to improve the program at Illinois State University.

Follow-up Report.

Comparator Analysis. The committee has included analyses of comparator and aspirational institutions in the self-study report outline to provide faculty members opportunities to consider the niche the program has among its peers and to gather information for program planning. The committee would like the program to revisit the comparator section of the self-study. Although the faculty did provide a table of metrics from comparator institutions, no analysis or interpretation of these metrics were presented. The committee asks that program faculty return to this analysis to identify the program niche among comparator programs at Illinois public institutions and to identify actions faculty could take to enhance the program with respect to the quality indicators faculty has prioritized. Accordingly, the committee asks faculty to revisit their discussions of comparator institutions and to summarize findings of those discussions in a report submitted to the Office of the Provost by May 15, 2022.

Recommendations. The Academic Planning Committee thanks faculty and staff of the B.S. in Engineering Technology program for the opportunity to provide input regarding the program at Illinois State University through consideration of the submitted self-study report. The following committee recommendations to be addressed within the next regularly scheduled review cycle are provided in a spirit of collaboration with program faculty and staff. In the next program review self-study report, tentatively due October 1, 2028, the committee asks the program to describe actions taken and results achieved for each recommendation.

Continue to focus on diversity, inclusion, and equity. While the committee notes that the percentage of underrepresented students enrolled in the program is consistently high, we also note that the percentage of women enrolled in the program is consistently low. The committee recommends that the program faculty develop a comprehensive plan to address issues of diversity, inclusion, and equity. We encourage the program to pursue its goals related to further developing a diverse, inclusive, and equitable environment that effectively supports students, faculty, and staff from diverse backgrounds. The committee urges the program to continue refining and implementing their plans for faculty and student recruitment, especially including in the plan strategies for increasing enrollment by students from gender, racial, and ethnic groups traditionally underrepresented in the program and discipline. We recommend that the program faculty examine ways to infuse diversity, equity, and inclusion issues into the curriculum. We encourage the program faculty to look to their other programs within the Department, as well as comparator and aspirational institutions, for indicators of enrollment growth impacts on program quality.

Examine the high schools and community colleges attended by students and adjust recruitment efforts as appropriate. The committee acknowledges the work faculty have completed regarding their recruitment efforts and that this work has been successful in enrolling both first-time-in-college students and external transfer students in the program. Given the time and energy that must be devoted to such recruitment activities, the committee notes that considering which locations are most likely to be successful in recruiting students and prioritizing those when recruiting can provide an efficient strategy to assist in guiding these efforts.

Develop a plan for student success and retention. The committee recommends that the program faculty develop a plan for student success. The plan should be used to increase transparency and communication around “student success” by defining the program’s goals for, assessment of, and actions towards supporting students enrolled in the program. The plan may provide an overarching structure for other plans (e.g., retention, curriculum, alumni engagement). The committee recognizes substantial work by former and current faculty members to review and update the program and its curriculum. The committee recommends continued periodic review of the program structure and content to remain current with changes in the field and to maintain program retention and graduation rates (including the percentage of graduates completing the program within four years). The committee recommends

that the program continue monitoring student retention, particularly of students from traditionally underrepresented groups. The committee encourages the program to continue developing opportunities for student scholarship and creative activities.

Increase faculty scholarship. The committee views ongoing faculty scholarship as critical to informing instruction of students and exposing them to the latest theories and trends in the discipline and field. Expanded analyses of comparator and aspirational programs, including aspirational programs nationwide, could help faculty develop strategies for addressing initiatives for the next review, such as increasing student-faculty research collaborations, expanding professional development opportunities for faculty members, and further increasing faculty scholarship.

Continue to upgrade laboratory equipment and facilities. The committee recognizes the importance of specialized laboratory facilities and equipment for supporting faculty and student research and for preparing students for work in industry positions. The committee supports faculty efforts to periodically upgrade the equipment to best support learning and research and to expose students to the technologies they will most likely encounter in the field after graduation. The committee suggests that the program consider involving its industry partners in efforts to upgrade laboratory equipment and maintain state-of-the art laboratory facilities.

Continue the collaborative work with Milner Library. The committee commends faculty and the subject liaison librarian for their work to integrate library instructional sessions with several courses. Given recent journal cancellations and expected increases in online and hybrid courses, the committee notes that the Department and Library should work to increase awareness of alternative access to resources, such as Interlibrary Loan and I-Share lending, among agriculture faculty and students. In addition, the committee notes that the program can work with the subject liaison librarian to develop a tiered approach for information fluency learning outcomes for the Department, align those outcomes to the curricula, and integrate those outcomes into the student learning outcomes assessment plan for the program.

Continue implementing and refining the student learning outcomes assessment plan. The committee commends faculty for their work to develop and begin implementing the assessment plan during the current review cycle. As part of this work, faculty have considered in which courses the learning outcomes are addressed and then assessed, have incorporated multiple indirect measures that are used to gather stakeholder feedback, and have used this information to guide the program changes that have been made. The committee notes that such work can assist in identifying areas for improvement by providing a more holistic perspective on student learning.

Design and implement a system for tracking alumni. The committee concurs with faculty in its plan to design and implement a system for tracking program alumni and then using the system to enhance alumni networking. Faculty might use information gleaned from its aspirational program analyses to help guide development of the plan. Faculty might also consult faculty from other academic programs in the Department regarding strategies used by those programs for alumni networking.