**REVIEW OF THE B.S. IN TECHNOLOGY AND ENGINEERING EDUCATION**

Classification of Instruction Programs (CIP) Code: 13.1309
Technology Teacher Education/Industrial Arts Teacher Education

**<u>Review Outcome</u>.** The Academic Planning Committee, as a result of this review process, finds the B.S. in Technology and Engineering Education to be in <u>Good Standing</u>.

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. The committee commends the Technology and Engineering Education program at Illinois State University for being the only remaining program of its type in Illinois that emphasizes teaching students the application of technical skills and problem solving. The curriculum is designed to provide opportunities for students to develop technological literacy through coursework and experiences within the areas of robotics, electronics, biotechnologies, and manufacturing computer-aided design (CAD). The curriculum is delivered by faculty members who collaborate to provide foundational courses, specialized courses, field experiences, and student teaching experiences.

The committee notes that the program faculty indicates that their target enrollment is 60-70 students. We commend faculty efforts that have resulted in early enrollment growth during the period covering the program review cycle (from 21 in 2015 to 39 in 2019) despite a national trend of declining enrollments in teacher education preparation programs. The program faculty's recruiting efforts include the participation in University events (e.g., open houses, Redbird Days, Presidential and University Scholar Days), individual tours of facilities during campus visits, and faculty visits to community schools and STEM-related events. We also note the program's efforts towards securing student scholarships as part of fundraising through private and corporate donations have 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 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 many of which provide students opportunities to be actively engaged with the community and local industry (e.g., the Technology and Engineering Education Collegiate Association). We commend the program faculty and staff for supporting students by providing high availability and access to specialized facilities and equipment that are central to the discipline. The committee commends the program for increasing student participation in the University Honors program. 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 that most students complete the degree in five years or less (showing an increasing trend to 92.5 percent in 2015 and improving to 95.2 percent in 2019). We also note that the employment data indicate strong outcomes for program graduates and commend the program for an overall job placement rate that is nearly 100 percent.

The committee notes the faculty's work to revise the curriculum during the period of review. These efforts included the addition of a course that is focused on secondary special education and another that is focused on STEM education foundations. We further commend the program faculty for their continued accreditation by the Council for the Accreditation of Educator Preparation (CAEP).

The committee notes the faculty members of the program for their scholarly contributions to the B.S. in Technology and Engineering Education program. Faculty members are active researchers who publish textbooks, as well as in peer-reviewed journals and through scholarly presentations at 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 to which our program may aspire.

The committee also recognizes that faculty developed specific action plans to implement similar initiatives as those to improve the program at Illinois State University.

**Recommendations.** The Academic Planning Committee thanks faculty and staff of the B.S. in Technology and Engineering Education 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.** 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, including in the plan strategies for increasing enrollment by students from gender, racial, and ethnic groups traditionally underrepresented in the program and discipline. We encourage the program faculty to look to their comparator and aspirational institutions for indicators of enrollment growth impacts on program quality. We recommend that that the program faculty examine ways to infuse diversity, equity, and inclusion into the curriculum.

**Continue to monitor enrollment trends and develop a formal plan for recruitment and enrollment growth.** In light of the Illinois State Board of Education's (ISBE) concerns related to statewide teacher shortages, the committee encourages faculty to continue to actively evaluate the program's recruitment plans to ensure that Illinois State University is meeting the needs of both the program and the State of Illinois. The committee supports faculty efforts to explore further expansion of program enrollment. The committee encourages the program to continue to develop and implement a plan for student recruitment, including in the plan strategies for increasing enrollment of students from racial and ethnic groups traditionally underrepresented in the program and discipline. The committee recommends that the program work with University Marketing and Communications to pursue additional methods of recruiting.

**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 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. The committee suggests that faculty members investigate student interest and participation in the Honors program to ensure that students desiring to complete the program with honors have sufficient opportunities to do so.

**Complete a review and evaluation of the changes to the curriculum.** The committee encourages faculty to review and revise the curriculum to ensure that the program continues to meet student needs. As part of this review the committee recommends that the program faculty look for ways to strengthen the articulation of transfer courses that may help reduce time-to-degree for external transfer students, remove any courses that are no longer being offered from the catalog, and examine the timing of course offerings to identify whether there are other potential barriers (e.g., required courses only offered during the summer term).

**Consider potential of the development of cross unit collaborations.** We recommend that the program faculty consider the potential of collaborations among the Department and other programs and units at the University. Given the broad scope of technology and engineering education, the committee notes that working with those in other, similar fields may create synergy that could extend to faculty teaching, research, service, and outreach. One potentially beneficial collaboration might be that between the Department of Technology, the Department of Special Education, and the forthcoming engineering program at the University.

**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 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 implement the assessment plan during the current review cycle. As part of this work, faculty have considered the knowledge, performance, and disposition components of the learning outcomes and aligned those with the program courses; 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.