

Program Review

Executive Summary

Information Technology: Software Development and Information Management

Majors Reviewed:

- *Software Development and Information Management (BSI), B.S.*

July 2021



Pennsylvania
College of Technology
A Penn State Affiliate

The Software Development and Information Management program has been offered at Pennsylvania College of Technology since 2012. Its broad application development focus and depth of database coverage with a well-rounded Information Technology (IT) base makes this program a unique offering that supports the continually growing demand of local, state, and national industry. The reinforcement of the strong theoretical base with hands-on, real-world applications supports the College's mission and prepares students for various in-demand careers such as application/software developer, software engineer, programmer, analyst, web developer, database administrator, data engineer, database developer, and data analyst.

The program has undergone many changes as a result of the 2016 program review and advisory board recommendations. These changes included streamlining the program goals and several course outcomes in addition to increasing the math requirement to Calculus I, incorporating a data science component, and supporting security-specific program goals by including a course on secure software development and testing. Additionally, adoption of the College's new core education model was completed in 2019. Course assessments continue to guide changes to the curriculum and its delivery. The program-level assessments show that the students are meeting the program-level goals, but that some modifications are needed to better assess the curriculum at the program-level.

Demand for this program and student placement remain strong. Graduate surveys indicate a 100% positive placement from 2015 to 2019. A 22% growth in relevant careers such as software developers is projected between 2019 and 2029 nationally while a 21% increase is expected locally for the same period of time. Additionally, members of the advisory board cite a strong demand for this program.

This program also serves the College by providing many key IT classes needed by the College's four other IT programs. Additionally, the capital equipment needs of this program are minimal given that students are required to have their own laptops and that many of the industry standard tools utilized in this curriculum are open-source and freely available. This curriculum is also supported by a wide range of IT faculty, each with specializations in various program areas that provide a phenomenal mix of knowledge and industry experience. Faculty also assist with a wide range of recruitment and outreach activities. Students in this program also benefit from a closely associated and active club--Association of Professional Programmers as well as Penn College NOW applicable offerings. Developmental needs for entering students appear to be declining along with probation rates. While FTE enrollment has decreased by 21% from Fall 2016 to Fall 2019, retention levels have increased by 27%.

Recommendations to maintain program excellence include:

- Pursue ABET/CSAB accreditation
- Continue alignment of program goals with courses to facilitate better assessment
- Continue to support faculty professional development in emerging areas
- Explore development of a minor
- Investigate renaming the program so that it is more recognizable to incoming students

- Address lack of problem-solving and logic skills of incoming students
- Implement recommendations from advisory board concerning modern software engineering concepts
- Develop means to better share student accomplishments