Computer Science + Engineering (CSE) Doctoral Degree
REPORT PREPARED by: Pei, Yong
ACADEMIC YEAR COVERED BY THIS REPORT: 2021-2022

I. PROGRAM LEARNING OUTCOMES

The Doctor of Philosophy degree in Computer Science and Engineering is the highest degree awarded by the Department of Computer Science and Engineering at Wright State University. This pinnacle academic credential shows that graduates have mastered a body of skills and knowledge in their field of study. It prepares a graduate for a career as an independent and productive scholar. The Ph.D. degree is awarded for demonstrated, scholarly excellence in study and research that provides a significant contribution to the fields of Computer Science or Computer Engineering. The program requires a concentration of study and research in specific areas of Computer Science and Engineering. Programmatic strength lies in the unique blend of faculty expertise, in the combination of theory with software and hardware design, and in the laboratory facilities available to the program. Program Learning Outcomes Graduates of the Doctor of Philosophy degree in Computer Science and Engineering program will be able to • Contribute to high-quality, peer-reviewed publications in venues appropriate to their field of study; • Establish independent research programs in their area of expertise; • Effectively communicate technical concepts to their peers. The program learning outcomes are further mapped into the following specific outcome measures • Number of student publications in journals and conferences/workshops • Dissertation Committee evaluations of proposal/dissertation and presentation quality • Number of student talks, seminars, and other presentations of scholarship

II. PROCEDURES USED FOR ASSESSMENT

A. Direct Assessment

(i) Assessment Schedule Completed Program Learning Outcome Data Collection Term Review Term 1. high quality independent research Annual Fall 2020 and Fall 2021 2. effective communication Annual Fall 2020 and Fall 2021 (ii) Alignment of program learning outcome to course learning outcomes 1. high quality independent

research •Number of student publications in journals and conferences/workshops •Dissertation Committee evaluations of proposal/dissertation and presentation quality 2. effective communication •Number of student publications in journals and conferences/workshops •Number of student talks, seminars, and other presentations of scholarship •Dissertation Committee evaluations of proposal/dissertation and presentation quality (iii) Collection of student artifacts assessed Term Collection Method Fall 2019-Summer 2021 •Number of student publications in journals and conferences/workshops •Dissertation Committee evaluations of proposal/dissertation and presentation quality •Dissertation Committee evaluations of proposal/dissertation and presentation quality •Exit Survey

B. Scoring of Student Work

The program learning outcomes are mapped to specific outcome measures that reflect student's progress toward Satisfying Ph.D. Requirements Checklist (https//engineering-computer-science.wright.edu/computer-science-and-engineering/phd-in-computer-science-and-engineering).
Learning outcomes are directly assessed by both quantitative and qualitative performance in corresponding measures.

C. Indirect Assessment

The program educational outcomes were established with input from and review by the external advisory board (EAB). In addition, the advisory board has reviewed and expressed approval of all major program changes made in the last five years. The Department of Computer Science and Engineering external advisory board includes representatives of local, regional and other businesses that historically hire Department graduates, as well as successful alumni of our programs. The board meets each Fall and Spring semester to review program objectives, curriculum and program changes, and new programs and courses. They make both high-level strategic recommendations and specific course and curriculum suggestions to the program. "PhD in Computer Science and Engineering Assessment of Learning Outcomes - Exit Interview" surveys are used as additional measures for indirect assessment. Survey is instrumented to collect graduating student assessment of self-efficacy for the learning outcomes. For each outcome students are asked to rate their own level of ability/achievement.

III. ASSESSMENT RESULTS/INFORMATION:

Number of student publications in journals and conferences/ workshops. Dissertation Committee evaluations of proposal/dissertation and presentation quality. Number of student talks, seminars, and other presentations of scholarship

All PhD graduates have significantly higher number of publications than the required minimum (two refereed conference papers or one journal paper). Learning outcome achieved. No concern is raised. Learning outcome achieved. No concern is raised. Learning outcome achieved. No concern is raised.

1. high quality independent research 2. effective communication 1. high quality independent research 2. effective communication 2. effective communication

IV. ACTIONS TO IMPROVE STUDENT LEARNING

The program institutes a formal assessment program involving the collection of students performance checkpoint data related to each educational outcome of the program. Data have been collected since Fall, 2018. A formal program assessment was conducted by the Graduate Studies Committee of the Department of Computer Science and Engineering in Fall 2020 and Fall 2021. This data and assessment results are shared through Pilot among the GSC faculty members and student advisors. The GSC faculty and student advisors review all program courses every three years to ensure that student learning objectives are accurate. The Ph.D. program is a research-intensive program. Students with an M.S. degree in Computer Science or Engineering take as few as six formal courses in completing the program. The Ph.D. degree is awarded for demonstrated, scholarly excellence in study and research that provides a significant contribution to the fields of Computer Science or Computer Engineering. No major changes to the program's course curriculum have been enacted in the past five years.

V. SUPPORTING DOCUMENTS
Additional documentation, when provided, is stored in the internal Academic Program Assessment of Student Learning SharePoint site.