

Annual Assessment Report

Academic Year: 2016-2017 (due September 15, 2017)

Department: Computer Science

Program(s): B.S.

Assessment reports are to be submitted annually to report assessment activities and results by program. The reports are due every summer with a deadline of September 15th each year.

The use of this template is entirely optional.

Note: These reports have been required by MSU policy since 2004.

1. What Was Done

Each year, we evaluate our 11 program outcomes:

- Outcome A: an ability to apply knowledge of computing and mathematics appropriate to the discipline
- Outcome B: an ability to analyze a problem, and identify and define the computing requirements appropriate to its solution
- Outcome C: an ability to design, implement and evaluate a computer-based system, process, component, or program to meet desired needs
- Outcome D: an ability to function effectively on teams to accomplish a common goal
- Outcome E: an understanding of professional, ethical, legal, security, and social issues and responsibilities
- Outcome F: an ability to communicate effectively with a range of audiences
- Outcome G: an ability to analyze the local and global impact of computing on individuals, organizations and society
- Outcome H: recognition of the need for, and an ability to engage in, continuing professional development
- Outcome I: an ability to use current techniques, skills, and tools necessary for computing practices
- Outcome J: an ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices
- Outcome K: an ability to apply design and development principles in the construction of software systems of varying complexity

2. What Data Were Collected

We collect two forms of assessment data each year: (1) we administer a 10-question custom exam to graduating seniors and (2) we collect the capstone portfolios that students produce for our capstone courses. Our professional option capstone course is CSCI 468, Compilers and our interdisciplinary option capstone is CSCI 482/483, Interdisciplinary Project Instruction and Project. A random sample is assessed using rubrics that we have created.

3. What Was Learned

The custom exam and portfolio demonstrated a weakness in Outcome A (an ability to apply knowledge of computing and mathematics appropriate to the discipline). In 2016, weaknesses were also found in Outcome H (recognition of the need for, and an ability to engage in, continuing professional development) and Outcome I (an ability to use current techniques, skills, and tools necessary for computing practices). However, these weaknesses did not appear in 2017.

With respect to Outcome A, students were not able to consistently demonstrate a deep understanding of the time complexity analysis of mergesort or quicksort.

4. How We Responded

To help our students better attain Outcome A, recurrence relations will have graded assignments in CSCI 232, CSCI 246 and CSCI 432 and time complexity will have graded assignments in CSCI 132, CSCI 232 and CSCI 432.