Annual Assessment Report

Academic Year: 2015-2016 (due September 15, 2016)

Department: Computer Science

Program(s):   B.S.

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 minor weaknesses in Outcome A (an ability to apply knowledge of computing and mathematics appropriate to the discipline), 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).

With respect to Outcome A, students were not able to consistently demonstrate a deep understanding of the time complexity analysis of mergesort or quicksort. With respect to Outcome H, students spent less time volunteering than we hoped. With respect to Outcome I, students were unable to describe the software development lifecycle model that they used to develop their professional option capstone projects.

4. How We Responded

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

To help our students better attain Outcome H, we will communicate volunteer opportunities to our student clubs (ACM and AWC) and encourage our students to become more involved on campus and in the community.

To help our students better attain Outcome I, software development lifecycle models will be briefly reviewed in CSCI 468 before teams of students set out to construct a compiler.