Program Outcomes Guide

Program Title: Computer Science

Program Team: Trudy Gift

Expected Learning Outcomes

Students will:

1. Create an understanding of the principles of computer science and problem solving
2. Build an awareness of computing practices in industry and emerging technologies, emphasizing a working knowledge of current software design and development techniques
3. Provide a broad education that enables graduates to understand the impact of computing technologies in a social context
4. Provide a computer science education that enables our transfers to pursue continuation of study at a 4-year institution

Assessment (How do students demonstrate achievement of these outcomes?)

1. Create an understanding of the principles of computer science and problem solving.

Students will:

1. Demonstrate a fundamental understanding of algorithms, data structures, software design, concepts of programming languages, and computer organization and architecture, and an awareness of the evolution and dynamic nature of computer science
2. Demonstrate the ability to analyze and solve computing problems through mathematic and programming courses
3. Demonstrate knowledge of at least one programming languages and a proficiency
4. Demonstrate an understanding of discrete mathematics, differential and integral calculus, and probability and statistics by completing mathematical problems
5. Demonstrate the ability to collect, analyze, and interpret data

2. Build an awareness of computing practices in industry and emerging technologies, emphasizing a working knowledge of current software design and development techniques.

Students will:

1. Demonstrate an awareness of emerging technologies and the ability to evaluate and utilize currently available software development tools
2. Demonstrate knowledge of the principles and practices for software design and development in programming assignments
3. Demonstrate the ability to successfully apply the principles and practices for software design and development to simulated real world problems
4. Demonstrate the ability to communicate effectively, both orally and in written form, and work in a team environment

3. Provide a broad education that enables graduates to understand the impact of computing technologies in a societal context.

Students will:

1. Demonstrate familiarity with basic concepts, emerging technologies, and contemporary issues relating to the societal impacts of computing by taking courses outside of computer science (cloud computing, cybersecurity, forensics, etc)
2. Demonstrate an understanding of professional and ethical considerations related to computing

4. Provide a computer science education that enables our transfers to pursue continuation of study at a transfer institution.

Students will:

1. Identify and transfer to a 4-year institution with a computer science curriculum program in computing
2. Demonstrate an ability to acquire new knowledge in the computing discipline and to engage in the continuation of study

Assessments tools currently being used:

1. Writing and documenting business oriented programs containing complex math algorithms
2. Solve mathematic problems using the tools developed in their math courses
3. Completing activity sheets requiring correct commands to achieve stated outcomes
4. Presentations of assigned topics based on research, develop of program, documentation of a problem
5. Multiple choice exams that present scenarios rather textbook based questions that promote critical thinking and not rote memorization
6. Practice exams for certification (Net+, Security+)

Validation (What methods are used to validate your assessment?)

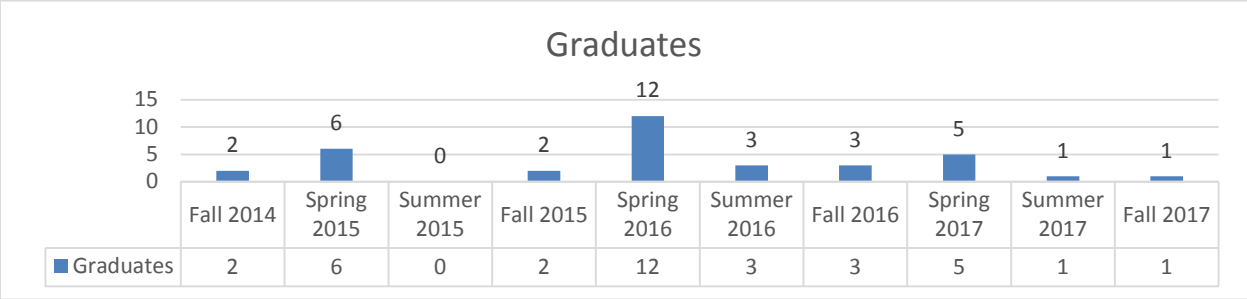
1. Faculty Review
2. Computer Science Departments of Transfer Institutions

Results (What do the data show?)

For the past year, HCC courses were evaluated and the current courses reflect an open selection model where students can choose their transfer institution and take courses that will transfer. Since implementing an open end schedule where students select courses based on their transfer institute, there have been fewer (no problems that I am aware or were brought to my attention of transferring. There is always a strong recommendation that students check with their transfer institutions prior to signing up for courses.

Follow-up (How have you used the data to improve student learning?)

The transfer process is working.



The actual numbers for Fall 2017 will increase as this chart is dated 5/10/2017, 7 months before graduation applications are due.

Budget Justification

(What resources are necessary to improve student learning?)

The MSDNAA software supplies free downloads to students which contain the compilers we use. There are no budget requests at this time.