

## I. **SUMMARY OF ASSESSMENT (about 1 page)**

### A. Program Student Learning Outcomes

1. Apply knowledge of mathematics and computational theory to appropriate problems in computer science (ILO 2 & 6)
2. Analyze a problem, and identify and define the resources and requirements needed for its solution (ILO 1)
3. Design and implement a program to meet stated needs (ILO 6)
4. Develop and maintain computer-based systems, processes, and platforms (ILO 1 & 6)
5. Recognize and distinguish the mechanisms, components and architecture of computing systems (ILO1 & 6)
6. Employ current techniques, skills, and tools necessary for computing practice (ILO 1 & 2)
7. Identify professional, ethical, legal, and security issues and responsibilities and the impact of computing on individuals, organizations, and society (ILO 5)
8. Perform successfully on teams to accomplish a common goal, and communicate effectively in written and oral form (ILO 4)

### **Program Student Learning Outcome(s) Assessed**

Last year we evaluated PLO 1 and PLO 6. This year we evaluated PLO 2 / ILO - Quantitative Reasoning. This will be the first time assessing this ILO.

### B. Summary of Assessment Process

**Instrument(s):** (*include if new or old instrument, how developed, description of content*)  
Class assignment.

#### **Sampling Procedure:**

#### **ILO - Quantitative Reasoning:**

Ten randomly chosen students are chosen. Scores are assigned to each of the 10 students for each of the assessment categories.

#### **Sample Characteristics:**

This year, we will be using the average score for each assessment category of the ILO. Scoring for each category done with the ILO Quantitative Reasoning Rubric approved by the Academic Senate dated March 19, 2019. This will be the first year this assessment procedure will be used.

#### **Data Collection:** (*include when, who, and how collected*)

Instructor gathers results and sends them to the undergraduate assessment coordinator, Varick Erickson.

#### **Data Analysis:**

Assessment coordinator compiles the results in tabular form. This data is shared with the undergraduate committee for curricular changes, areas of concern, and general comment.

## C. Summary of Assessment Results

### Main Findings:

#### **CS413 – Analysis of Algorithms (1 section, 10 students)**

This year Department assessed ILO Quantitative Reasoning, which was assessed in CS413.

#### **ILO Quantitative Reasoning**

The four ILO categories were chosen for assessment. The following are the results for each category. Each result are average scores out of 4.

Problem Formulation:	3.1
Representation/Visualization:	3.2
Quantitative Analysis:	3.4
Overall Communication:	3.2

#### **Recommendations for Program Improvement:** (*changes in course content, course sequence, student advising*)

Overall, students did reasonably well on the assessment. The lowest score was 3.1 (76%) for problem formulation. This I feel was in part due to assessment methodology (see comments below).

#### **Next Step(s) for Closing the Loop:** (*recommendations to address findings, how & when*)

For changes made to close the loop, new PLO's have been created for semester conversion. We have created standardized assessment quizzes for all required courses. Each quiz addresses a single PLO. With the assessments established, we plan to start looking for trends as data is collected and develop actionable strategies to address issues we find.

For this year, this was the first time assessing Quantitative Reasoning. It was difficult to find a single assignment that was able to capture all 4 these particular categories. In the future, I would recommend choosing questions across multiple assignments or create standardized questions that are assigned to students across all sections of CS413.

#### **Other Reflections:**

New lecturers are not always aware of the assessments and do not give them. We have created a standard repository for the assessment quizzes for easier deployment in the future. We also now have a lecturer handbook and this procedure is now included in the handbook.

## D. Assessment Plans for Next Year

*Summarize your assessment plans for the next year, including the PLO(s) you plan to assess, any revisions to the program assessment plan presented in your last five-year plan self-study, and any other relevant information.*

Next year we will be assessing PLO 3. We will continue examine and revise curriculum and assessments based on the data gathered.



