**Annual Academic Assessment Plan**

Math Department Program Outcomes

Five Year Plan

November 2017

During the “meta-assessment” in the 2016-2017 academic year, the math department concluded that our current system for assessing our Program Learning Outcomes has been working well, and we see no reason to change it.

As in past cycles, our plan is to divide up our PLOs into the next five years, and assess two year and one per year thereafter. Assessments are given to students during winter quarter, and the results analyzed at the end of that quarter and in the spring.

For the next five years, our (tentative) plan is the following:

**Year 1 (17/18)**

3. Determine and carry out an appropriate algorithm to solve problems that are amenable to mathematical solutions.

4. Communicate mathematical information formally, using appropriate math notation and terminology, and informally by using everyday language to express ideas

The assessment will consist of solving a single problem that could be solved algorithmically. There are several different approaches students could take to solving the problem.

We will administer the assessment in three different modes. Students who have mode A work independently and are given 20 minutes to solve the problem. Students who have mode B are also given 20 minutes to solve the problem but work in small groups. Students who have mode C will take the question home overnight with no specified time limit and work independently

**Year 2 (18/19)**

6. Students who successfully complete a prerequisite mathematics course will have the skills and knowledge necessary to successfully complete the subsequent math course

Student data will be collected for several sections of Math 90 during Winter quarter 2019. The data will be statistically analyzed in a variety of ways to determine what groups of students successfully complete Math 90 as well as how well successful completion of the prerequisite (Math 85) predicts success in Math 90.

**Year 3 (19/20)**

2. Determine, create, and use appropriate and reasonable mathematical constructs to model, understand, and explain phenomena encountered in the world

A variety of questions will be selected to test students' ability to make and use mathematical models. Questions will vary depending on the specific math class. Randomly selected classes will have these questions incorporated into their final exams. The student responses will be scored according to a rubric.

**Year 4 (20/21)**

1. Create, interpret, and analyze graphs and charts that communicate quantitative or relational information.

A random sample of students enrolled in all introductory college level math courses will be given an instrument to assessing their ability to create graphs and charts as well as interpret and analyze graphs and charts. The instrument will be scored according to a rubric.

**Year 5 (21/22)**

5. Use technology to analyze and solve mathematical problems and to effectively communicate solutions to problems, particularly those that cannot be solved efficiently by other means.

A variety of questions will be selected to test students' ability to appropriately use a graphing calculator. Questions will vary depending on the specific math class. Randomly selected classes will have these questions incorporated into their final exams. The student responses will be scored according to a rubric.