

Undergraduate Academic Assessment Executive Summary

Department: Mathematics/Computer Science. Academic Year: 2013-14

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- I. Background:** A significant percentage of incoming students seem to be lacking the necessary mathematical skills to successfully complete the courses in the calculus sequence. During the summer of 2013 we developed a diagnostic calculus readiness test.
- II. Question:** Do students have the necessary skills in pre-calculus mathematics to successfully complete the calculus sequence?
- III. Methodology:** This test was administered during the first week of the semester to all students in Math 184 and Math 186. The test contains topics from algebra, geometry and trigonometry. Members of the department scored the tests and compiled the data.
- IV. Summary of results:** This was the first year of data collection. The results from this will provide a baseline. We intend to administer the test in future years to obtain additional data. As we hypothesized, the students did not perform as well as we would like.

The students in Math 186 scored higher than the students in Math 184. This is to be expected since most of the students in Math 186 took calculus in high school indicating they have stronger mathematical backgrounds and abilities. Students in Math 184 typically did not take calculus in high school.

There was also a much higher correlation between performance on the test and the overall course grade for the Math 186 students compared to the 184 students.

- V. Conclusions:** A lack of solid pre-calculus preparation continues to be a concern for our department. This reality could continue to make it difficult to attract students who will have a reasonable chance of successfully complete and mathematics or computer science program. It seems that we will need to continue to emphasize remediation in Math 184 and possibly in subsequent math courses. The long term viability of our programs might depend on this.
- VI. Action Plan:** It is the intent of our department to continue to offer this diagnostic test. We are also considering developing a preparedness test for students beginning Math 186. This test would cover topics from Math 184. We will

continue to consider the data to determine if any programmatic changes need to be made.