

Annual Assessment Report

Department: Mathematics and Computer Science

Academic Year: 2016

Date of Submission: 11.01.16

Department Chair: Ray Rosentrater

I. Response to the previous year PRC's recommendations

Item:	Response:
Notes: There are no previous-year recommendations from the PRC. We are responding to the external reviewer's recommendations in sections IIB and IV.	

II A. Program Learning Outcome (PLO) assessment

If your department participated in the ILO assessment you may use this section to report on your student learning in relation to the assessed ILO. The assessment data can be requested from the Dean of Curriculum and Educational Effectiveness.

Program Learning Outcome	Quantitative Literacy
Who is in Charge /Involved?	QL task force: Steve Contakes (chair), Enrico Manlapig, Ray Rosentrater
<u>Direct Assessment Methods</u>	The Bowdoin College-developed Quantitative Literacy Reasoning Assessment (QLRA) test was administered fall 2014 and spring 2015.
<u>Indirect</u>	A review of QAR course offerings and syllabi as well as relevant NSSE responses was conducted in the spring of 2015.

<u>Assessment Methods</u>	
Major Findings for the Math/CS dept.	<p>Observations/Reflections:</p> <ol style="list-style-type: none"> 1. The results of the QAR assessment do not indicate any significant issues in the instruction for this GE/ILO area. While specific goals have not been established, Westmont students are scoring reasonably well on the Quantitative Literacy Reasoning Assessment (QLRA) instrument developed at Bowdoin College. 2. While the QLRA was administered to calculus classes using a pre/post protocol, the QLRA is not very relevant to the types of topics covered in many of the courses offered by our department. Our calculus-based classes provide tools for using quantitative data in decision making. However, these tools are more sophisticated than those assessed by the QLRA. As such, the QLRA does not provide useful information about the effectiveness of instruction in these courses. Moreover, after seeing the test before taking a calculus class, calculus students are not likely to see the relevance of the test to their studies in calculus and are unlikely to voluntarily take the exam again. The QLRA is relevant to the material presented in MA 005 and MA 165.
Closing the Loop Activities in Math/CS dept.	<p>Planned responses:</p> <ol style="list-style-type: none"> 1. The QAR report recommends increased use of active learning in QAR courses. The department has already been moving in this direction in MA/CS 015, MA 009, MA 010, and MA 019 and will continue to use active learning (specifically IBL techniques) in these courses. 2. Our unfilled departmental position has resulted in heavy use of adjuncts to cover MA 005. Consequently, the instruction in MA 005 has been largely lecture-based. We expect to implement significantly more active learning in MA 005 once we have filled our open position. 3. We plan to slightly modify the instruction in the calculus-based courses by emphasizing the way that functions (a major focus of study in these courses) can be treated as data and are used to capture the nature of a set of data.
<p>Collaboration and Communication</p> <p>The chair of the math/cs department served on the QL task force. The math/cs department reviewed and discussed the QL task force report in in two department meetings. Members of the math/cs department are available to assist in active-learning workshops if needed.</p>	

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or/and

II B. Key Questions

Key Question	How can we increase the applied offerings in our department while maintaining a solid set of courses needed for graduate-school-bound students?
Who is in Charge/Involved?	Chair will solicit ideas for applied courses.
<u>Direct Assessment Methods</u>	We will monitor student enrollment and satisfaction with the courses. Courses gaining strong enrollments and student interest will be placed into a standard rotation.
<u>Indirect Assessment Methods</u>	
Major Findings	We are offering one new applied course (Cryptography) this term and will be piloting another course (Data Science) in the spring.
Recommendations	
Collaboration and Communication	

III. Follow-ups

Program Learning Outcome or Key Question	
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Who was involved in implementation?	
What was decided or addressed?	
How were the recommendations implemented?	
Collaboration and Communication	

IV. Other assessment or Key Questions related projects

Project	Rewrite course descriptions to be more inviting
Who is in Charge /Involved?	All department members
Major Findings	
Action	The course descriptions were rewritten and appear in the current catalog
Collaboration and Communication	
Project	How can we increase student research opportunities?

Who is in Charge /Involved?	All department members
Major Findings	
Action	We used funds from the Provost office, from a Tensor grant, and from the departmental restricted fund to support four summer research student in the summer of 2016. Long term, we cannot support this level of activity in the same manner. The Tensor grant was a one-time opportunity and the restricted funds are not being replenished.
Collaboration and Communication	

V. Adjustments to the Multi-year Assessment Plan (optional)

Proposed adjustment	Rationale	Timing

VI. Appendices

- A. Prompts or instruments used to collect the data
- B. Rubrics used to evaluate the data
- C. Relevant assessment-related documents (optional)