Central Washington University  
Assessment of Student Learning  
Department and Program Report

Please enter the appropriate information concerning your student learning assessment activities for this year.

Academic Year of Report: __2009–2010_ College: _Sciences___________  
Department _Mathematics____________________ Program: _B.S._______________

1. What student learning outcomes were assessed this year, and why?

We assessed Goal 3 (Outcomes 5, 7). These were chosen because they have not previously been assessed and because they assess student writing which is an upcoming area of assessment for General Education. Please refer to the Mathematics Department Assessment Plan for complete statements of these Goals and Outcomes as well as their linkage with the Goals and Outcomes of the Department, College, and University.

2. How were they assessed?  
A) What methods were used?  
B) Who was assessed?  
C) When was it assessed?

For both outcomes, we assessed student papers submitted in the Winter 2010 MATH 499S course using two rubrics: the rubric included in the Department Assessment Plan and the University Writing rubric. The Department rubric is a 10-point scale with a score of 8 or better required to be considered satisfactory. The University Writing rubric is a 5-part rubric with each part deemed “passing” or “not-passing.”

3. What was learned?

For Goal 3 (Outcome 5: application of understanding of mathematics to fields outside of mathematics), we determined that most students are capable of applying their mathematical knowledge outside of the discipline. Two papers (each deemed satisfactory, 8/10 and 9/10) provided calculus-based applications (one in electrical engineering and the other in aviation). The third paper (deemed unsatisfactory) provided an algebra-based application (in genetics). The third paper was deemed as unsatisfactory (4/10) primarily due to the limited level of mathematics required for the presented application.

For Goal 3 (Outcome 7: communication of mathematical ideas through writing), we determined that all students were able to communicate mathematical ideas through writing. All papers were successful at communicating mathematical ideas.

When using the University Writing rubric, one paper passed in all areas. The other two papers were rated non-passing in two areas each. The first paper with non-passing elements was the one
rated unsatisfactory based on the Mathematics Department’s rubric. This paper failed to pass the “Content” element (due to the level of the topic) and the “Conventions and Presentations” element. The second paper with non-passing elements was rated satisfactory by the Mathematics Department’s rubric. However, it failed to pass the “Reasoning” and the “Rhetoric of the Discipline” areas.

4. **What will the department or program do as a result of that information?**

Faculty members teaching intermediate and advanced (300 & 400-level) courses will be encouraged to include a written assignment into their curriculum to provide students with more practice writing mathematical prose.

5. **What did the department or program do in response to last year’s assessment information?**

The 2008–2009 Assessment Report proposed two changes: first, the addition of 300-level transition courses. As predicted in that report, these courses were cancelled in response to the budget cuts. However, we have (optimistically) scheduled these courses for the 2010–2011 academic year.

The 2008–2009 Assessment Report proposed increasing the proof writing content for MATH 365. The instructor for MATH 365 in 2009–2010 placed more emphasis on this component of the course. The instructor for 2010–2011 also intends to increase the emphasis in the upcoming course.

The 2008–2009 Assessment Report proposed an increased emphasis on student presentations at the 400-level. The Topology Sequence (451–453) included a significant number of student presentations as part of their graded work during this academic year.

6. **Questions or suggestions concerning Assessment of Student Learning at Central Washington University:**