

**Colorado State University – Pueblo Academic Program Assessment Report for AY 2016-2017**

**Due: June 1, 2017**

**Program:** Mathematics BA/BS

**Date:** June 1, 2017

**Completed by:** Bruce N. Lundberg

**Assessment contributors (other faculty involved in this program's assessment):** None

Introduction: For the 2016-2017 academic year, Dr. Lundberg evaluate the program's SLOs and other aspects using results of an "exit survey" as well as student commends gathered from the 5-year program review. Only three of 14 AY16-17 Math Program graduates have so far returned a completed exit survey which was sent out and/or hand delivered to all AY16-17 graduates (2 more that last year's 1) in April. See below for copies of the three exit survey submissions.

Results for 9 students who took the MFAT (Major Field Achievement Test) in mathematics were received since June 2016 assessment activities. The data collected give strong corroboration to Spring 17 graduate's submitted statements and ratings of program quality, effectiveness, and student satisfaction.

Faculty review of ungraded and unidentified final exams is scheduled again for next year. Doing this next year, let along more frequently, has been seriously hampered by the loss math faculty (loss of 5 of 20 FT Math Faculty from Spring 13 versus AY15-16 and AY 16-17.), and the extra work of supporting physics losses by borrowing Math Faculty time. Nevertheless, I have retained this exercise in the assessment plan, but have dropped the portfolio idea as unrealistic given current tenure-track staffing levels.

Note that the Math Program has **14 gradutes in AY16-17.**

**I. Program student learning outcomes (SLOs) assessed in this cycle, processes, results, and recommendations.**

A. Which of the program SLOs were assessed during this cycle? <b>Please include the outcome(s) verbatim from the assessment plan.</b>	B. When was this SLO last assessed?	C. What method was used for assessing the SLO? <b>Please include a copy of any rubrics used in the assessment process.</b>	D. Who was assessed? Please fully describe the student group.	E. What is the expected achievement level and how many students should be at it?	F. What were the results of the assessment?	G. What were the department's conclusions about student performance?	H. What changes/improvements to the <u>program</u> are planned based on this assessment?
1. Learn, understand and apply mathematics from the core mathematical disciplines of calculus, abstract algebra, analysis, modeling, differential equations, geometry, probability, and statistics.	AY 5-16	The Mathematics Major Field Achievement Test, given to each student at the end of their second capstone course (Math 421 and Math 427).	All(9) students in either Math 421 or Math 427 who were completing the second of these two capstone courses during the Spring 16or Fall 16 term. These are generally students who will graduate in this or the subsequent term. (Scores for the MFAT test given Spring 17 are not yet available).	A 90% of students above the 50 <sup>th</sup> percentile in the national rankings.  Unfortunately, the number of test takers and/or the expense prevents us from obtaining sub-score analysis.	The national percentile rankings on the Math MFAT for the 9 students tested were: 85, 74, 63(2), 48, 17(2), 11, 3. The median percentile ranking was 48. Also, 4 of the 9 (55%) of students were at or above the 48 <sup>th</sup> percentile. .  For comparison, last year's scores for 15 tested were: 96, 89, 84(4), 81, 74, 69, 56(2), 25(2), 18, 3; with a median of 74 %-tile, with, 11 of the 15 (73%) at or above the 56 <sup>th</sup> percentile. .	Four students of 15 (44%) were far below the 50 <sup>th</sup> percentile rank, with one very low.outliner. On rare occasions students do not take this test seriously – since it does not count in their grade (the scores arriving too late). Given the goal of 10% or less below 50 <sup>th</sup> percentile, the program may need to strengthen (or revise) standards and support for C students to attain greater competency and care.  There is evidence the program is very successful in leading ad aiding most students to learn, understand and apply the core mathematical disciplines listed, which are tested on the MFAT.  Two students demonstrated very good achievement in comparison to national peers. <b>We had several very strong graduates Spring 17. Spring 17 MFAT's, scores, as usual, have yet to appear.</b>	We plan to continue discussions and changes in AY17-18 which we began this year, regarding further changes to strengthen the upper end and the breath of our applied offerings and curriculum, to attract more majors and minors and to help more students to achieve in the top half on the MFAT.

**B. Follow-up (closing the loop) on results and activities from previous assessment cycles. In this section, please describe actions taken during this cycle that were based on, or implemented to address, the results of assessment from previous cycles.**

A. What SLO(s) did you address? Please include the outcome(s) verbatim from the assessment plan.	B. When was this SLO last assessed?	C. What were the recommendations for change from the previous assessment?	D. Were the recommendations for change acted upon? If not, why?	E. What were the results of the changes? If the changes were not effective, what are the next steps or the new recommendations?
1. Learn, understand and apply mathematics from the core mathematical disciplines of calculus, abstract algebra, analysis, modeling, differential equations, geometry, probability, and statistics..	AY 15-16	In AY 15-16 committees began extensive analysis, discussion of, and possible changes in, our mid level (soph. and jr) courses of Math 126-224-325, 207-307. We plan to continue discussions of these in early Fall 16, considering proposals to strengthen the mid level courses to help more to achieve in the top half on the MFAT.	Yes! We continue discussions of these in early Fall 16, considering proposals to strengthen the mid level courses to help more to achieve in the top half on the MFAT. We passed proposals leading to CAP board approved changes in several courses and in the curriculum, especially in our mid level (soph. and jr) courses of Math 126-224-325, 207-307.  3. Yes	<p><b>A.</b> CAP board approved changes in several courses and in the curriculum, especially in our mid level (soph. and jr) courses of Math 126-224-325, 207-307. We plan to continue discussions of these in early Fall 16, considering proposals to strengthen the mid level courses to help more to achieve in the top half on the MFAT.</p> <p><b>B.</b> The chair continued to discuss, enhance and promoted a “teaching resources” book shelf in the department office. Contributions of books and articles were requested and obtained from faculty.</p> <p><b>C.</b> The chair emphasized and sustained a theme mathematical beauty and “why people work” themes. The chair recruited and scheduled some research talks by visiting faculty, as well as promoting teaching grants and workshops..</p>

Comments: We have greatly benefitted this year from the presence of three new (though non-TT) PhD’s: Tracey Blanco (math ed.), Corey Lyons (algebra), and Shamim Akhtar (nucl. Phys). We are pleased to have leave replacement and physics position funding to keep the latter two for next AY! But, as I write we have just received the resignation of the very highly qualified and high quality MLC Coordinator, Dr. Blanco, due to inadequate salary and rewards. Much time was spent this year on the Math Program 5-Year Review, a Tenure-Track search in Mathematics to replace the retiring (and VERY hard working) Professor Janet Barnett, a search for an interim and then full time Administrative Assistant to replace the promoted Mary Sandoval, and the hosting of the MAA Rocky Mt. Section meeting, along with extensive curricular and faculty evaluation changes. All of these revisions have kept the departmental curriculum committees and Chair very busy, especially amid 3 FTE on leave or reassignment.

**Department of Mathematics and Physics**

**Colorado State University - Pueblo  
Mathematics Exit Interview**

Name: \_\_\_\_\_ Telephone: \_\_\_\_\_

Email: \_\_\_\_\_

Program of Study: \_\_\_\_\_

Mark the planned semester and year for graduation:

Spring 2016 \_\_\_\_\_ Summer 20 \_\_\_\_\_ Fall 20 \_\_\_\_\_

**See separate document for survey results.**

