Amarillo College

# PET FORM
## Planning and Evaluation Tracking
### (2011-2012 Assessment Period)

Division of: Arts & Sciences -
Former Sciences and Engineering Division no longer exists

Person Responsible for this Division: Jerry Moller

Department of: Mathematics, Sciences, and Engineering

Person Responsible for this Form: Kathryn Wetzel

Purpose Statement (With Last Updated Date): The Mathematics and Engineering Department supports the goals of the Science and Engineering Division by providing educational opportunities for improvement in foundational mathematics skills and for success in transfer-level math and engineering courses required in a broad spectrum of technical fields and advanced degrees. 2006

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## Goal Statement #1:

Prepare developmental students for their next level mathematics course.

**Outcome/Objective Statement**
**(Be sure to include audience, behavior, conditions, degree/benchmark, and evaluation method):**
Upon successful completion of MATH 0302 (Beginning Algebra) with a grade of A-C, at least 60% of developmental students will score a minimum of 63 on the Accuplacer Test which is the required score for students who place directly into the next course MATH 0303 (Intermediate Algebra).

- Results (Provide Numbers and Percentages for Quantitative Data)
  - **2009-2010 Data:** Numbers = _404___ out of __699__ and Percentage = _57.8___%
  - **2010-2011 Data:** Numbers = _400___ out of __690__ and Percentage = _57.9___%

- Analysis
  Looking at the breakdown of individual teachers in 20009-2010, a wide range of results was seen from 20% of one class scoring 63 or higher to 100% in a class scoring 63 or higher. As can be seen from the 2010-2011 results, the results did not change significantly.

- Improvements
  - Teachers were individually informed as to their class results. A general discussion was initiated with the teachers discussing the importance of this benchmark, not as an end to itself but as an indication of the preparedness of the students. Some things mentioned was that the teachers felt they had not proper explained the importance of this end of the semester post test and in some cases, had downplayed it in an effort to help the students relax. The teachers requested hints and strategies from the higher pass rate teschers and these were distributed amongst all teachers including those that have had poor results.
  - The individual teachers of classes where less than 50% of the students made a 63 or higher on the Accuplacer met with the departent chair and developmental math coordinator for counseling and brianstorming of ways to improve. The individual teachers were then to prepare a statement

presenting the changes they would bring to the classroom to address this issue and for which they would be accountable this current year.
    - This does not affect our budget as the fee for the Accuplacer test is included in the student's fees.

- Recommendations/Actions for **2011-2012**
  - Person Responsible (Who will complete the action?): Edie Carter
  - Action Plan: Edie Carter will follow through with the teachers and the progress of their action plans for this and the spring semester.
  - Expected Time Frame Needed to Implement Action Plan (Please provide specific deadline date): The changes in the teacher's preparation and presentations will occur this semester and the next semester.
  - Budget Information Needed for Future Action (Cost/Details): None

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**Goal Statement # 2:**

Provide courses encompassing required math skills/knowledge to enable students to transfer and/or complete a degree or certificate program (AC Strategic Plan through 2015: Strategy 1.4).

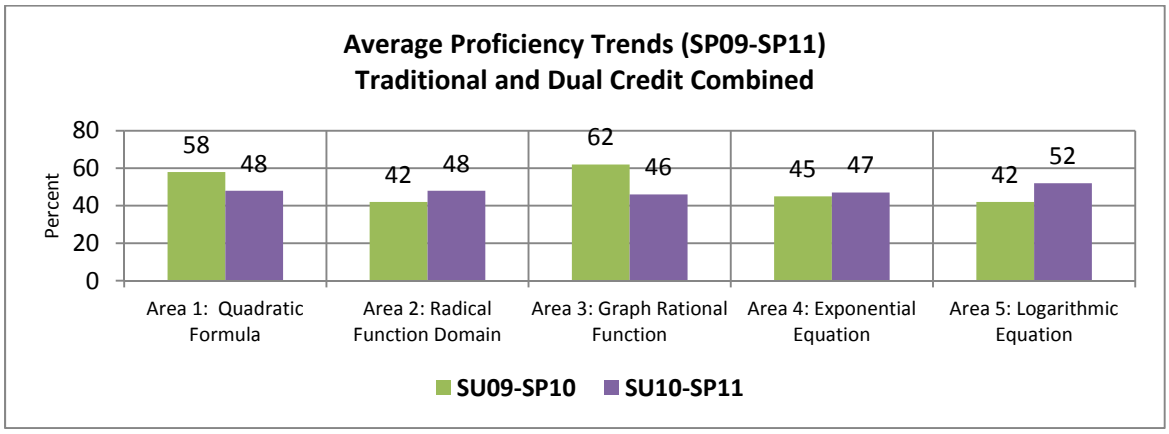
**Outcome/Objective Statement**

Upon completing Math 1314, students will demonstrate an overall 50% proficiency rating in five pre-identified areas. Students will be assessed through the use of embedded test questions and will be evaluated by instructors via rubric.

Results (Provide Numbers and Percentages for Quantitative Data)

Five areas evaluated in MATH 1314, one of the gateway courses at AC, have been assessed for the past two years.

These five areas include: 1.) Quadratic Formula, 2.) Radical Function Domain, 3.) Graph a Rational Function, 4.) Solve an Exponential Equation, and 5.) Solve a Logarithmic Equation.




- Analysis/Supplemental Information
  - Instructors choose one of three similarly structured problems from each of the five areas to embed on written classroom exams. (Online and dual credit instructors include these embedded questions on written midterm and final exams, and traditional instructors usually include them on periodic major exams and occasionally on the final exam.) Before grading the exams, instructors or student workers Xerox the problems, maintaining anonymity of students, and drop the problems in a designated area. All collected questions are then scored using a 5 point rubric. The rubrics rate problems on a scale of 0 to 5. A score of zero indicates no work at all, and a score of 4 or 5 is considered proficient

- The total of problems provided from the previous 2009-2010 academic year was 5490 while the department collected 6234 total problems in 2010-2011. In the SP10 semester, the goal was set to include off-campus dual credit instructors. Their (much appreciated) participation likely contributes to this increase. In addition, participation amongst full and part time faculty on the Amarillo and Hereford campuses remains excellent. The amount of data being collected is sufficient and legitimate for detecting trends, as it represents a wide sample of formats, instructors, and semesters.

- Improvements
  - The full time faculty of the Math and Engineering department reviewed the 2009-2010 results and determined that our goal was to have each of the five areas to have a 50% proficiency rating for 2010-2011. Methods to increase the students' knowledge in those areas were discussed as a department. It was decided that teachers should try methods of their own selection to increase the students' abilities in Areas 2, 4, and 5 as they were the lowest results.
  - Interestingly, the 3 areas we selected to emphasize did, indeed increase, but the other two areas decreased significantly. Some of this is thought to be due to the assumption that those areas would maintain previous levels while we "worked on" the other three. Another theory is that new volunteer graders (volunteers from the math faculty) for those areas were following the grading rubric and the experienced coordinator of the effort thought they may have graded more "harshly" than the previous graders.
- Provide the Budget Information Needed to Make Past Improvements (Cost/Details): None

- Recommendations/Actions for **2011-2012**
- Person Responsible (Who will complete the action?): Shannon Cornell and Kathryn Wetzel
- Action Plan: This year, we will try to emphasize all five areas using teaching and learning strategies to be selected by the various teachers and also train the graders more thoroughly.
- Expected Time Frame Needed to Implement Action Plan (Please provide specific deadline date): Two semesters in 2011-2012.
- Budget Information Needed for Future Action (Cost/Details): None.

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