**In review of the spring 2012 report**, the following goals for academic year 2013-2014 were established:

* Continue to monitor the success rates in subsequent courses for students successfully completing MT0204.
* Continue to increase offerings of self-paced courses and assess the success rates in the course and subsequent courses.
* Revise final exam and final exam review for MT1303.
* Create a departmental pretest for MT1303 to assess incoming and exiting skill levels.
* Adding course objectives in MT1303 to help improve success in MT1403.
* Continue to offer summer bridge options to improve placement and follow success rates of participants in subsequent courses.
* Examine more 4-hour course options in developmental classes.
* Continue to explore other redesign options, including a floor for students entering the algebra sequence.
* Continue to focus on enrollment numbers in MT1083 by corresponding with other departments and promoting MT1083’s benefits to students.

The department has made progress towards these goals as follows:

* Increased offerings of self-paced courses with assessment of success rates to be conducted in spring 2015.
* Revised final exam and final exam review for MT1303.
* Created a departmental pretest for MT1303 and will assess incoming and exiting skill levels in spring 2015.
* In the process of adding course objectives in MT1303 to help improve success in MT1403. These objectives will align with the new text and will be implemented in spring 2014.
* Increased offerings of the summer bridge to improve placement. Ninety-two percent of the participants from summer 2012 improved their placement, of those students 50% were successful in the course following the summer bridge program.
* Restructured Introductory Algebra to a four credit hour class.
* Ongoing discussions continue regarding a floor for students entering the algebra sequence and the enrollment numbers in MT1083.

**For spring 2013**, the department (as per the assessment plan) reviewed data regarding College Algebra (MT1403), Real Numbers System (MT1313), and Metric and Nonmetric Geometry (MT1333).

**College Algebra (MT1403)** is designed to meet the needs of the student wishing to satisfy the general education math requirement or planning to enroll in additional mathematics courses. Topics covered in [MT 1403](http://www.eastcentral.edu/acad/classes/catalog/deptPages/MT.html#MT1403) include: functions, domain, range, complex numbers, logs and exponents, polynomials, rational expressions, radicals, solving equations and inequalities, graphing equations and inequalities. The use of the graphing calculator and its application to the topics of College Algebra will be emphasized.

College Algebra is taught by full-time and adjunct instructors at the main campus (Union campus) and at three satellite sites (Rolla, Sullivan, and Washington – Four Rivers). Additionally, it is taught as a dual credit course in five local high schools with a sixth starting fall 2013. The course is overseen by the Mathematics Department and currently requires the use of a departmental syllabus containing a list of required material, as well as requiring a department mandated text, final, and certain grading practices (including a cap on the homework percentage and the final exam having a minimum requirement of 20% of the final grade). MT1403 is offered every semester (including summer) throughout the day and evening, and is predominately taught in a traditional format, with one online section offered each semester.

In Fall 2011, the department adopted a new ACT score for placement into MT1403. The math ACT score was lowered from a minimum of 24 to a minimum of 23. In addition to lowering the math ACT score, the minimum composite sore of 24 to place using ACT was also removed. This change was a result of placement score alignment initiated by the Presidents’ group from member colleges of MCCA and researched and established through the CAO group. The department analyzed the success rate of students with a math ACT of 24 as compared to a math ACT of 23.

In addition to comparing ACT scores, the department also analyzed success rates of students based upon overall placement. The following observations were made.

The overall success rate (A, B, or C) for MT1403 was 47.2%. However, for a majority of degrees a D is sufficient for a degree to be awarded. When including a D, the overall success rate rises to 61.2%, to 73.6% for those placing directly into MT1403, to 58.0% for those only taking one prerequisite course (MT1303), and 59.8% for those taking two previous prerequisite courses (MT0203 and MT1303).

In reviewing the final exam results, the department compared the percent incorrect for the first half of the course versus the second half in an attempt to identify the concepts that students struggled with most frequently. It was found the percent incorrect to be virtually the same. One contributing reason may be a result of students entering the course not as prepared.

As a result of this data, the department is going to review ways to help improve the success rates of students by exploring the option of more credit hours for College Algebra (either through lecture or a lecture/lab combination), mandatory problem solving sessions, increased departmentally infused reviews of prerequisite material, infused mastery testing throughout the course, and alternate modes of delivery and homework management.

**Real Number System (MT1313) and Metric and Non-Metric Geometry (MT1333)** are courses intended for elementary education majors. MT1313 is designed to familiarize students with the various mathematical topics taught in an elementary school environment, such as sets, logic, number theory, the development of the set of real numbers and real number operations, number bases and various algorithms. MT1333 is designed to familiarize students with the various mathematical topics, such as measurements, plane and solid geometry, statistics and probability. Although the department recommends MT1313 before MT1333, these courses may be taken in either order and both have Intermediate Algebra (MT1303) as a prerequisite.

MT1313 and MT1333 are taught by full-time and adjunct instructors at the main campus (Union campus) and at two satellite sites (Rolla and Sullivan). Although due to a decreased number of education majors at our Rolla site has resulted in the cancellation of classes at the Rolla site. The courses are overseen by the Mathematics Department and currently require the use of a departmental syllabus containing a list of required material, as well as requiring a department mandated text and activity manual, proficiency of prerequisite skills, and a departmental final. Since 2011, MT1313 has been offered every fall semester at the Union campus and every spring at the Sullivan site. MT1333 has been offered in spring at the Union campus and in the fall at the Sullivan site. These courses focus on theoretical concepts needed for teaching elementary school mathematics, and are not strictly application based. They a taught in a traditional format, and rely heavily on the use of activities and discovery.

In reviewing success rates from Fall 2009 to Fall 2012, MT1313 had an overall 69.0% success rate (A, B, or C) and MT1333’s overall success rate was 62.6%. The following charts show first, the success rates for MT1313 of those students who took MT1303 versus those who placed into MT1313, and second the success rate for MT1333 of those who took MT1303 versus those who placed in, as well as the success rates of those who took MT1313 before MT1333 (as recommended by the department).

Given the significant improvement in success rates in MT1333 for students who took MT1313 prior, the department will investigate making MT1313 the prerequisite for MT1333. Early data suggests MT1403 may also improve the likelihood of success in MT1313. The following chart depicts the average CBASE math score over the past 5 year. In comparison to available data for two year institutions nationally for 2011, our students ranked in the 72nd percentile.

 In response to success rates, changes in graduation requirements of education majors (which will result in a B as a minimum grade for success), and desire to continue producing students performing above the mean on the state standardized exam (currently CBASE), the department has already begun implementing mastery based testing of core numerical skills and adopted a new textbook. Additionally, the department is looking for ways to improve external academic support, and increase exposure to new standards in mathematics (which include common core standards, smarter balance questions, and the replacement exam for CBASE, and state requirements of minimum g.p.a. and course grade). As well as continue departmental collaboration between the mathematics and education departments.