

**EASTERN OKLAHOMA STATE COLLEGE
PROGRAM REVIEW 2018
MATHEMATICS**

1. REVIEW PROCESS

Margaret Sorrell, Chair, Department of Mathematics

2. NAME OF PROGRAM

Mathematics; Program code 027; HEGIS code 1701; CIP code 270101

3. CENTRALITY OF THE PROGRAM TO THE INSTITUTIONAL MISSION

Eastern Oklahoma State College is organized to generate student learning through its associate degrees and other academic programs which effectively prepare graduates to complete baccalaureate degrees, obtain productive employment, and lead enriched lives of learning. It is simultaneously the mission of the College to engage in educational programming and related activities that promote regional economic and community development. The mathematics program is designed to meet the needs of the individual student, in keeping with the mission of the College as defined by the Regents of Eastern Oklahoma State College and as stated above.

The basic curriculum of the Associate of Science degree in Mathematics contains the traditional freshman and sophomore courses for students who wish to complete the four-year degree in mathematics and allows students to enter the four-year college as a junior. The curriculum also contains courses that are required in the General Education portion of most students' degree plans, and specific courses required in other degree plans (such as pre-elementary education) offered by Eastern. Additionally, the curriculum contains developmental courses to address the needs of students who show math deficiencies, in order to prepare them for entry into college credit math courses.

4. TYPE OF DEGREE

Associate of Science in Mathematics

5. GOALS AND OBJECTIVE OF DEGREE PROGRAMS

Students successfully completing the mathematics program at Eastern should be prepared to enter a four-year college or university at the junior year level and to continue success in their study of

mathematics. The program should also develop the mathematical skills needed in the study of sciences and other academic disciplines.

The curriculum will provide students the opportunity to reach a level of superior skills in Algebra, Plane Trigonometry, Analytic Geometry, and Statistics, Calculus, and math courses in the Elementary Education programs. The curriculum will also enhance students' critical thinking and systematic reasoning skills.

6. FACULTY AND QUALIFICATIONS

- Margaret Sorrell; Math Instructor; Dean, Division of Science and Mathematics, Chair, Department of Mathematics, M.S. 1986, Northeastern Oklahoma State University. Employed since 1986.
- Philip Hawthorne; Math Instructor; Coordinator of Institutional Research, M.S. 1994, Oklahoma State University. Employed since 1998.
- Kathy Howe; Developmental Math Instructor, Developmental Math Department Chair, B.S. 2004, Oklahoma State University. Employed since 2005.

Three to five adjunct faculties are employed in a given year.

7. RESOURCES

- Financial An annual budget is prepared each year to meet the financial requirements of the mathematics program.
- Library The Eastern Oklahoma State College library maintains books, periodicals, and electronic media resources for students use in support of their curricular requirements.
- Equipment The mathematics program uses graphic calculators, computers with appropriate learning software, printers, classroom projection systems, and manipulatives for elementary math education.
- Support services Students are supported in their efforts by a number of campus-based services. Computer labs are available for research, report writing and tutorial assistance. Tutors are hired by the math department through study and RCE programs. The Phi Theta Kappa honorary fraternity and the Presidential Scholars Program provide student tutors on a volunteer basis. Professional and peer math tutors are available through the Student Support Services (TRIO) program and the Pathways Grant based on both the Wilburton and McAlester campuses. Tutoring assistance is available for developmental courses through calculus. Students may obtain assistance in any courses from instructors outside of class at regularly scheduled office hours or by appointment.

8. FACULTY/STUDENT RATIO

Developmental courses

- Basic Algebra 1/20
- Intermediate Algebra 1/20; occasionally 1/25
- Co-requisite labs 3/15

Credit courses

- College Algebra 1/25
- Plane Trigonometry 1/20
- Elementary Education Math 1/10, 1/15
- Elementary Statistics 1/15
- Calculus 1/10

9. NUMBER OF MAJORS

YEAR	HEADCOUNT
2013-2014	15
2014-2015	18
2015-2016	13
2016-2017	16
2017-2018	8

Some students declare math as a major, then change to pre-secondary education with a math emphasis. Both degrees require the same number of math credits but differ in their supporting electives. These students are not included in the table above.

10. INSTRUCTIONAL COST

The estimated cost of instruction of the Math majors per FTE enrolled in the specialized courses is \$3,826.00

11. NUMBER OF FULL-TIME EQUIVALENT FACULTY

There are 3 full-time-equivalent faculty members in this program.

12. SUCCESS OF TRANSFER STUDENTS

The majority of Eastern students that complete this program transfer to a regional University. Students who were successful at Eastern have continued that success at regional Universities and many are currently teaching mathematics in the public schools.

13. METHOD OF CURRICULUM REVIEW AND EVALUATION OF PROGRAM

The curriculum is continually reviewed by instructors. This evaluation includes comparison of course content with other instructors in the state at various professional meetings, and by reviewing the newer texts available in the courses. The program content is reviewed by evaluating what is expected of the student at various transfer institutions. Additionally, informal discussions with past students are used to gauge the effectiveness of the individual courses in preparing the student for courses taken at the transfer institutions.

Changes in the institutional structure (enhanced role at the Southeastern State University branch campus at Idabel, teaching site at Antlers) are noted, as increased offerings of math courses are usually indicated.

15. NUMBER OF GRADUATES IN PAST FIVE YEARS

<u>YEAR</u>	<u>NUMBER OF GRADUATES</u>
2014	1
2015	3
2016	3
2017	1
2018	1

16. NUMBER OF CREDIT HOURS IN DEGREE PLAN

<u>PLAN DIVISIONS</u>	<u>NUMBER OF CREDIT HOURS</u>
In Program	63
General Education	42
Major Area	15
Supporting Electives	6

17. RECOMMENDATIONS

The program would be improved with an increase in the number of majors but, as noted above, the number of majors would double if Pre-Secondary Education Math majors were included.

A greater diversity of offerings by the program continues to be discussed, but limitations on the number faculty and resources to support instruction preclude action at this time.

The enhanced role of the institution in Idabel requires a full-time math instructor at that site. Due to lack of funding by the state of Oklahoma we have not been able to hire a full-time math faculty at the Idabel site. However, we are using adjuncts until the time comes available to hire a full-time instructor.

The developmental and credit math loads in McAlester require one or two more full-time instructors at that campus. But do to the lack of funding by the state of Oklahoma we have cut out full-time math faculty at McAlester and are using adjuncts to meet our needs as well as offering for the first time in the fall or 2018 a Co-requisite Lab for underprepared students.

The institution is coping with the systemic problem of mathematically under-prepared high school students. Sixty to seventy percent of entering freshmen do not qualify for credit math courses. Increases are also noted in the concurrent enrollment of high school students, both on-campus and through electronic media.

Considering the demand from the State Regents to implement and teach four Mathematical Pathways the department of Mathematics has made many changes over the past 3 years. The use of co-requisite labs to lessen the demand of so many developmental math courses at the Wilburton and McAlester teaching sites has been a wonderful answer for the Department of Mathematics and the student.

The co-req. labs are 2 hours non-credit baring courses designed to allow students with less than the traditional 19 ACT placement score to enroll in credit baring mathematics courses instead of taking a traditional Basic or Intermediate Algebra course first.

College Algebra has been the traditional placement for the General Education Mathematics requirement throughout the State of Oklahoma. With this in mind we began our Co-requisite labs as a supplement to the underprepared college student into a regular College Algebra Course and required all students with less than a 19 ACT score to enroll in the 2 hour non-credit lab (Co-requisite Lab). Our intentions are to offer the same labs to students who would for example take a Survey of Mathematics course, Statistics and/or Modeling course that meets the degree plan of the student.

As you see below of the 82 students that took College Algebra without the Co-requisite lab in the fall of 2017 of those 93% passed as compared to and 86% pass rate of students that took College Algebra with the Co-requisite Lab. We are looking forward to the comparison of the spring 2018 Co-requisite courses.

Co-Requisite College Algebra

College Algebra (FA 2017) without Co-Requisite Lab		College Algebra (FA 2017) with Co-Requisite Lab	
Total students completing course	82	Total students completing course	50
Passed	93%	Passed	86%
("C" or better)	86%	("C" or better)	82%
"C"	16%	"C"	28%
"B"	31%	"B"	26%
"A"	39%	"A"	28%
Failed	7%	Failed	14%

The Co-requisite model is working for Eastern and we look forward to embracing the co-requisite courses into the newly designed courses as institutions of higher learning in Oklahoma change our Pathways to meet the need of the student.