

EASTERN OKLAHOMA STATE COLLEGE

ASSOCIATE OF SCIENCE MATHEMATICS PROGRAM REVIEW (027) 2023

**PREPARED FOR OKLAHOMA STATE REGENTS FOR HIGHER LEARNING
500 EDUCATION BUILDING
STATE CAPITOL COMPLEX
OKLAHOMA CITY, OKLAHOMA 73105**

**Program Review Report
3.7 Academic Program Review
Mathematics Program Review**

Institution Name: Eastern Oklahoma State College

Program Name and State Regents Code: Mathematics; Program code 027; HEGIS code 1701; CIP code 27.0101.

List Program Options: Mathematics AS

List Embedded Certificates included in this review: N/A

Previous Review

Date (Year) of Last Review 2018

1. Summarize key findings from previous internal and/or external reviews of this program.

(1) The enhanced role of Eastern Oklahoma State College at the SOSU McCurtain County Campus teaching site necessitates a full-time mathematics faculty on site. (2) The number of math credits offered at EOSC McAlester teaching campus also indicates need of a full-time faculty. (3) Corequisite mathematics courses added for College Algebra need to be extended to encompass all Mathematics Pathway courses. (4) Placement of general education mathematics needs to move from the traditional College Algebra placement to the Mathematics Pathway model.

2. What developments and actions have taken place since the last review?

The dramatic changes that occurred during and following COVID in the spring 2020 term, including declines in enrollment, changed the needs of the department concerning staffing. Faculty requirements at the McCurtain County Campus teaching site and the McAlester campus continue to be met with adjunct instructors. Course coverage for corequisite mathematics courses has been extended to account for all four Mathematics Pathway courses, and the addition of multiple measure placement for new students has lessened the need for remediation in general. The majority of general education mathematics placement is still in the traditional College Algebra track, but there is progress to guide students into the other general education mathematics pathway courses (Survey of Mathematics, Elementary Statistics, and Functions and Modeling.)

Current Review

Date (Year) of Current Review 2023

Review Criteria (*Institutions should address each criterion of OSRHE policy 3.7.5 as directed below*).

A. Centrality of the Program to the Institution's 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 cultivate growth, create futures and change lives. 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 or corequisite courses to address the needs of students who show math deficiencies, to prepare them for success in college credit math courses.

B. Vitality of the Program:

B.1. Program Objectives and Goals:

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.

B.2. Minimum Productivity Indicators:

Time Frame (e.g.: 5-year span)	Enrollment Headcount (FTE)	Graduates
2018-2019	10 (5.33)	3
2019-2020	6 (3.57)	2
2020-2021	9 (3.76)	1
2021-2022	8 (4.53)	0
2022-2023	6 (4.53)	0

Other Quantitative Measures:

- b.4.a.** Number and enrollment of courses taught exclusively for the major for each of the last five years:

MATH-1513 College Algebra (3 credits—general education requirement)

MATH-1613 Trigonometry (3 credits)

MATH-2233 Elementary Statistics (3 credits)

MATH-2235 Calculus I (5 credits)

MATH-2245 Calculus II (5 credits)

MATH-2354 Calculus III (3 credits)

(All courses listed for majors in mathematics are also used by students in other majors and may appear as required courses in other majors, both within the Science and Mathematics Division as well as other campus divisions.)

- b.4.b.** Direct instructional costs for the program during the review period:

The education budget for the Mathematics Department averaged \$1296.50 over the 2018 thru 2022 fiscal years. In reviewing this distribution of funds based on the enrollment in the department's program, the average expenditures were approximately \$162.75/student majoring in mathematics; however, much of the Mathematics Department budget expenditures are for materials that are also used in the general education and degree supporting mathematics courses and benefit students beyond the departments' student majors

- b.4.c.** The number of credits and credit hours generated in the program that support the general education component and other degree programs including certificates:

MATH-1503 Survey of Mathematics* (3 credits)

MATH-1513 College Algebra* (3 credits)

MATH-1523 Functions and Modeling* (3 credits)

MATH-1613 Trigonometry (3 credits)

MATH-2213 Problem Solving for Elementary Education (3 credits)

MATH-2223 Geometry for Elementary Education (3 credits)

MATH-2233 Elementary Statistics* (3 credits)

MATH-2235 Calculus I (5 credits)

MATH-2245 Calculus II (5 credits)

MATH-2354 Calculus III (3 credits)

*general education Math Pathways courses

b.4.d. A roster of faculty members, faculty credentials and faculty credential institution(s). Also include the number of full-time equivalent faculty in the specialized courses within the curriculum:

Faculty	Credential (i.e. MFA, PhD)	Institution that granted degree
Philip Hawthorne, Math Instructor, Department Chair	M.S. 1994	Oklahoma State University
Kathy Howe, Math Instructor, Developmental Coordinator	B.S. 2004	Oklahoma State University

B.3. Duplication and Demand:

In cases where program titles imply duplication, programs should be carefully compared to determine the extent of the duplication and the extent to which that duplication is unnecessary. An assessment of the demand for a program considers the aspirations and expectations of students, faculty, administration, and the various constituents served by the program. Demand reflects the desire of people for what the program has to offer and the needs of individuals and society to be served by the program.

Address Duplication: N/A

Address Demand: N/A

B.4. Effective Use of Resources:

The Eastern Oklahoma State College library maintains periodicals, and electronic media resources for students' use in support of their curricular requirements.

The mathematics program uses graphing calculators, computers with appropriate learning software, printers, classroom projection systems, and manipulatives for elementary math education.

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 course from instructors outside of class at regularly scheduled office hours or by appointment.

Recommendation(s)

A. Recommendation for the Program (3.7.7.A.4):

- Maintain the program at the current level.
- Continue the program with modifications as noted below and detailed in the comment section below.
 - Expand the program
 - Reduce program in size or scope
 - Merge or consolidate program
 - Reorganize program/curricular modifications*
- Suspend program to allow an opportunity to consider recommendations detailed in the section below*
- Delete program*

**Requires a Request for Degree Program Modification and governing board approval.*

B. Specific comments regarding recommendations:

(Provide detailed recommendations for the program as a result of this thorough review and how these recommendations will be implemented, as well as the timeline for key elements. Recommendations to suspend or modify the program should include measurable goals and a timeline for monitoring the program in one-, two-, three-, or four-year increments)

Recommendations	Implementation Plan	Target Date
Implement more use of IT NSpire calculators and TI-Navigator software in courses. (Students in Eastern’s service area are quite familiar with this technology due to Gear Up grants.)	Eastern’s math instructors will receive training and begin implementing the use of TI NSpire and Navigator technology in course work. This may also require an update to the technology hardware (replacement batteries for the NSpire calculators)	Fall 2025
Encourage students and work with advisors to enroll students more broadly in the Math Pathway most applicable to the student’s preferred major.	Faculty and advisors need to be up to date on the degree pathways options that are available at transfer institutions. Mathematics faculty need to make the Math Pathway courses available through scheduling at times conducive to targeted enrollment.	Fall 2027 (ongoing)

Department/
Program Head *Philip Hawthorne* Date: **10/30/2023**
(Signature)

Dean *Dr. Andrea Green* Date: **10/31/2023**
(Signature)

Chief
Academic
Officer _____ Date: [Click here to enter a date](#)
(Signature)

President _____ Date: [Click here to enter a date](#)
(Signature)