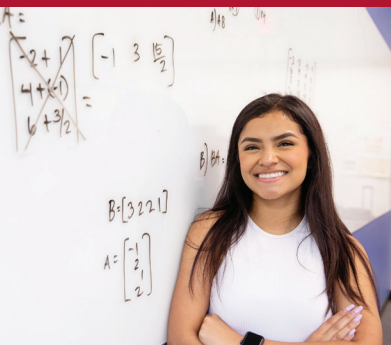


**Quality Enhancement Plan
Comprehensive Review 2020 - 2022**

MATH

to a

DEGREE



LAMAR UNIVERSITY

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Math to a Degree

Quality Enhancement Plan

Comprehensive Review 2020 - 2022

Lamar University

November 2022

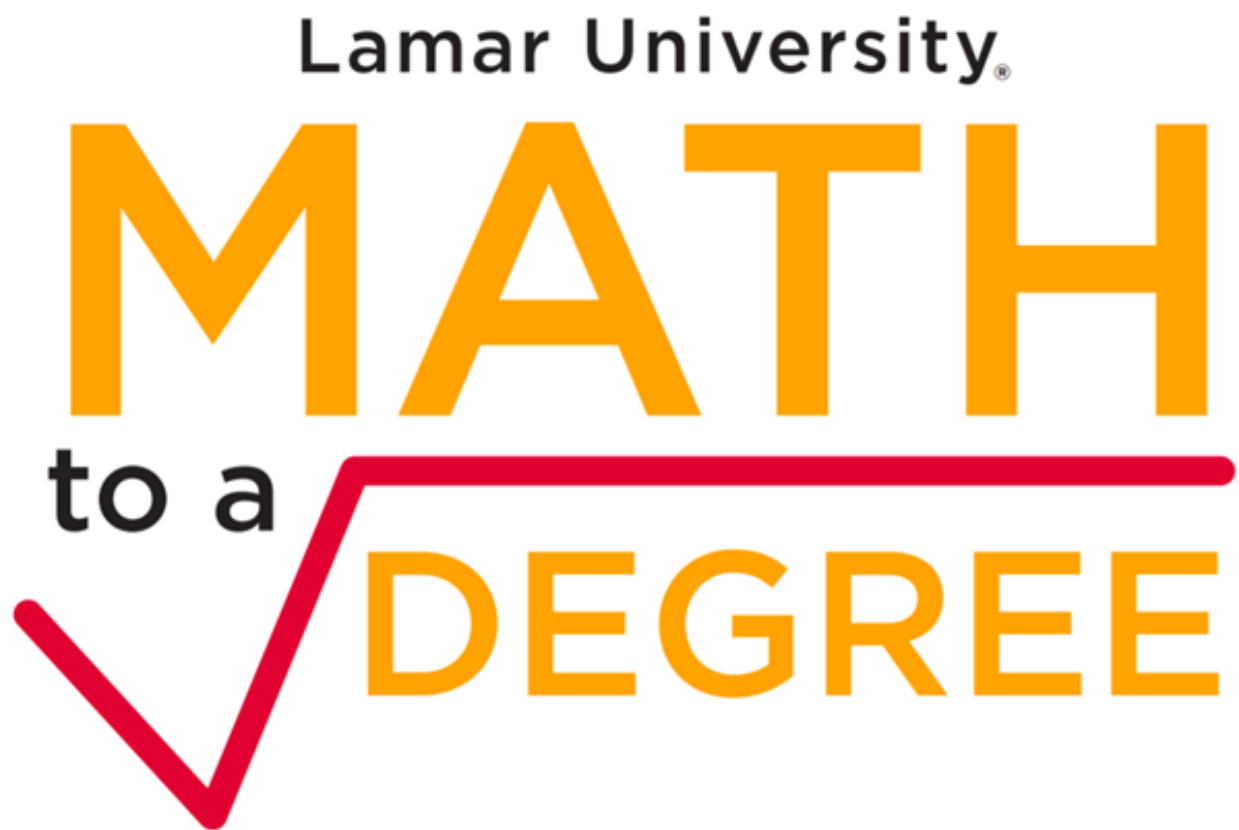


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EXECUTIVE SUMMARY

Lamar University's Quality Enhancement Plan (QEP) fulfills the University's mission to support "student success by engaging and empowering students with the skills and knowledge to thrive in their personal lives and chosen fields of endeavor." Furthermore, Lamar's proposed QEP seeks to improve student performance by reducing barriers to success in mathematics courses by placing students in courses appropriate to their field of study. Through collaborative efforts in involving institutional constituencies, progress has been made toward accomplishing the goals set forth in the QEP. Specifically, progress has been enhanced by utilizing effective centralized advising and a systematic process implemented by faculty and department chairs based on best practices inherent in mathematics pathways principles. This comprehensive review looks back at the past two years and highlights both the progress and changes that have been made to effectively implement this plan and improve student success at Lamar University.

The student success outcomes and goals set forth by the QEP are outlined below:

QEP STUDENT SUCCESS OUTCOMES (SSOs)

SSO #1: All department chairs will sign a Declaration of Intent identifying a Mathematics Pathway for their students. Produce one-page visual handouts recommending pathways.

SSO #2: Fall-to-fall Retention of First Time in College (FTIC) Students will improve from a five-year baseline of 61%.

SSO #3: Percentage of FTIC students who complete their first college-level mathematics course within the first two semesters will increase from a five-year baseline of 58%.

SSO #4: Percentage of FTIC students who complete two college-level mathematics courses within the first two years will increase from a five-year baseline of 18%.

SSO #5: Number of college readiness mathematics hours taken by FTIC students will decrease from a two-year baseline rate* of 0.97 credit hours per FTIC student.

QEP GOALS

Following consultations with program faculty, each department chair will select a Mathematics Pathway for program majors that aligns with their chosen area of study. Non-STEM department chairs will choose a non-algebraic pathway.

The success of Math to a Degree will depend largely on centralized advising that is respectful of students' needs. The systematic process begins when faculty and department chairs agree upon which mathematics pathway best suits the academic and career goals of their majors. By enrolling in the appropriate pathway, students will save time and financial resources on the way to degree completion.

*The Texas State Legislature passed House Bill 2223 that requires 25% - 75% of eligible students being in co-requisite courses starting in 2018. The impact of this legislature on this outcome led to a baseline rate based on two years of data since 2018.

ASSESSMENT DATA

SSO #1: Declarations of Intent by College

College	Number of programs	Completed Declarations of Intent	Completion rate
COFAC	24	24	100%
COEHD	17	10	59%
COE	6	6	100%
COAS	32	25	78%
COB	19	19	100%
Total	98	84	86%

SSO #2: Fall-to-fall Retention Rates of FTIC Students

Starting term	FTIC students	Enrolled next fall	Retention rate
Fall 2020	1,287	677	53%
Fall 2021	1,356	769	57%

SSO #3: Completion of First College-Level Math Course in Their First Year

Starting term	FTIC students	Completion	Completion rate
Fall 2020	1,287	712	55%
Fall 2021	1,356	813	60%

SSO #4: Core Math Completion of FTIC Students in Their First Two Years

Starting term	FTIC students	Completion	Completion rate
Fall 2020	1,287	293	23%

SSO #5: College Readiness Math Hours Taken By FTIC Students

Starting term	FTIC students	Total College Readiness Math hours taken	Total college Readiness Math hours / FTIC student
Fall 2020	1,287	658	0.51 hrs / student

The QEP Assessment Committee

The Assessment Committee began their data assessment work at the meeting with the members of the Steering Committee, the Senior Business Analyst from Information Technology, and the Data Analyst for the QEP in October 2021. A half-time data analyst for the QEP was hired in September 2021. At the meeting the data requirements for the QEP Student Success Outcomes were established. The senior business analyst provided the first dataset to the assessment

committee in November 2021, later updating it in January 2022. With the updated dataset, the assessment committee had a meeting to evaluate the initial data's findings and to discuss new data requirements in the recommendations from the external evaluator. The assessment committee concluded that the additional data requirements justified new datasets. Concurrently the data analyst, using the initial dataset, produced the first preliminary report on assessment data in April 2022. Upon reviewing the report, the assessment committee decided to pursue additional data at the meeting in June 2022 and recognized a challenge in data collection. After the second preliminary report in August 2022, the Director of Institutional Research and Reporting agreed to undertake the task of data collection for the QEP in September 2022, and later became a member of the QEP assessment committee. In October 2022, the assessment committee produced the third preliminary report on assessment data that fulfilled the data requirements. Based on the last preliminary report, the assessment committee plans to communicate the findings with the QEP faculty in Spring 2023.

MATH TO A DEGREE: SNAPSHOT BY THE NUMBERS

Summary of Student Success Outcomes

SSO	Measure	Baseline	Rate	Rate - Baseline
SSO #1	Completion of Declarations of Intent	100%	86%	-14%
SSO #2	Fall-to-fall retention rate	61%	55%	-6%
SSO #3	First college math completion in one year	58%	58%	0%
SSO #4	Core completion in math in two years	18%	23%	+5%
SSO #5	College readiness hours / FTIC student	0.97 hrs	0.51 hrs	-0.46 hrs

FTIC Student Distribution by Earned Credit Hours (ECH) in Their First Year

Starting term	FTIC students	ECH \geq 30	ECH \geq 24	ECH \geq 18
Fall 2020	1,287	160 (12%)	498 (39%)	684 (53%)

Approximate translation of Earned Credit Hours into time to graduation: ECH \geq 30 ~ 4-years to graduation, ECH \geq 24 ~ 5-years to graduation, and ECH \geq 18 ~ 6-years or longer to graduation.

Total Number of Students in QEP Courses

Year	Non-algebraic	Algebraic	Total
2019 - 2020	919	2,853	3,772
2020 - 2021	787	2,645	3,432
2021 - 2022	759	3,062	3,821

Success rates of both non-algebraic and algebraic courses vary narrowly between 72% and 74%.

LESSONS LEARNED AND RECOMMENDATIONS

Challenges in Logistics and Execution

The ultimate goal of the QEP is to place students in appropriate pathways. The logistics of moving forward from the signed Declarations of Intent to the delivery of major-specific pathways to the advisors was one challenge. The second challenge is the buy-in of the advisors. Advisors actively work with and enroll students in courses, whether they are in their chosen pathways or not. We need to convince advisors that the recommended pathway is in their students' best interest.

The Implementation Committee recognized these challenges and included five action items in the original QEP. Thus, our recommendations are to refocus our resources on these action items. They are as follows:

Recommendations (1-3):

- We acknowledge getting a complete list of Declarations of Intent and degree plans with chosen math pathways is a moving target. We create a system to track changes to degree plans, but we move forward with the most up-to-date lists.
- We continually update a post with the up-to-date major-specific pathway information online and make it available to advisors at all times.
- We create one-page visual handouts for each pathway and the major degree programs aligned with it. We emphasize “why” the chosen pathway and its courses are in their students' best interest.

Need for Just-in-Time Homework Help for Students

The QEP focuses on student success in mathematics courses on their way to degree completion. The Math Shop, a drop-in math tutoring center, has been an important student support component. However, there is a need for extended student support outside normal operating hours. Homework is an integral part of all mathematics courses, and most students work on their homework problems outside campus during evening hours when tutoring service is unavailable. Rather than waiting for a traditional tutoring session, students need just-in-time help when they get stuck. For this reason, we recommend the following pilot project.

Recommendations (4-5):

- We launch a pilot program in two QEP courses online that enables the following features:
 - a) a student takes a picture of their work in progress and submits it, b) one of the tutors writes a just-in-time hint on the picture and returns it to the student.
- Following a successful pilot program, we extend the program to multiple QEP courses.

Need for Smaller Cohorts in College Readiness Courses

Students in college readiness courses must be co-enrolled in a college credit-bearing course. This pairing provides students with the foundational content hand-in-hand. Success in the college readiness course implies student success in the paired college level course. A key component of college readiness courses is students' engagement in interactive learning with their peers and an instructor. To promote active learning in the classroom, we recommend smaller cohorts in the QEP college readiness courses.

CHANGE IS INEVITABLE

The QEP involves continuous improvement and requires flexibility and an openness to change as the plan is implemented and subject to new challenges. Instead of resisting changes triggered by these challenges, the University has embraced new strategies to be accessible to all stakeholders while still producing valuable Student Success Outcomes.

MODIFICATIONS TO THE PLAN

Examination of the Plan

- The QEP will be modified using recommendations from the QEP Evaluator and based upon lessons learned from the 2021 – 2022 academic year.
- Goal – Mathematics Pathways:
There are still degree plans that cannot find a pathway that works for their students. Problems with pre-requisites and determining a track that works for the students is the challenge. Degree plans in COEHD and COAS related to the health sciences need pathways that work for them.

Refocusing of the Plan

- The focus of the QEP remains student success in mathematics courses on their way to degree completion. The objectives of the QEP need to be revised based on recommendations from the evaluator. A particular recommendation is use of earned credit hours within two semesters to quantify students' academic progress (SSO #5) and persistence (SSO #2). Data collection and analysis was conducted for this purpose. In the first full year of the QEP it is apparent that advising, the size of the class, mode of the math course (F2F, online, or hybrid) is just as important as uniform content.

Modifications to the Original Plan

- Student success in the QEP will be modified to incorporate data related to diversity, equity, and inclusion to determine how to increase math success across the student population. Through a partnership with the National Student Clearinghouse the Assessment Committee will be able to review 5 years of historical course data and new data to look for trends and ways to meet the goal of the QEP.

Changes to the Leadership

- QEP Director – Dr. Jeremy Alm – November 2017 – May 31, 2022; Dr. Kye Kang – November 2022 –
- Provost – Dr. Brenda Nichols retired June 30, 2022; Dr. Daniel Brown started as Provost on July 1, 2022
- Senior Associate Provost / Associate Provost – Dr. Joseph Nordgren returned to full time teaching in Fall 2020. Dr. Daniel Brown served as Associate Provost until July 2022 when he became Provost.
- The university did a national search for a new Senior Associate Provost in Fall 2022 with emphasis on experience with Mathematics and student success. Dr. Samuel Jator became Senior Associate Provost in October 2022. He will serve as ex-officio on the QEP Assessment Committee and work closely with the QEP Director.

Committee Changes

- The QEP Implementation Committee ended its service in March 2021 when the QEP was approved.
- The QEP Assessment committee from March 2021 – November 2022 included Dr. Kye Kang, Dr. Jackie Jensen-Vallin, Mr. Jarrod Rossi and Dr. Theresa Hefner-Babb.

NEXT STEPS

1. Survey sample students who took QEP courses.
2. Post the up-to-date major-specific pathway information online and make it available to advisors at all times.
3. Launch an online pilot program to provide just-in-time help for students working on homework problems during evening hours.

TIMELINE

2020 - 2021 – Year 1

- January – QEP submitted with Focus Report
- February – SACSCOC On-site visit cancelled due to COVID Pandemic
Math courses taught virtually due to epidemic
- February 2021 – Smartform created for academic departments to submit Declarations of Intent
- March 2-4 – QEP Approved by virtual On-Site SACSCOC team
- October – QEP participated in Cardinal Boo recruiting event

2021 - 2022 – Year 2

- February – QEP participated in Lamardi Gras recruiting event
- April – Dr. Samuel Jator (Austin Peay State University) presents workshop on Math Pathways
- May 31 – QEP Director resigned to assume position as Associate Dean of the College of Arts and Sciences
- June 1 – Dr. Jackie Jensen-Vallin named Interim Chair of the Department of Mathematics
QEP data gathered and analyzed by Dr. Kye Kang

2022 - 2023 – Year 3

- September – new IRR director hired
- September – Lamar University joins the Postsecondary Data Project with National Student Clearinghouse. DEI Fellowship with focus on student success in Math starts.
- November – Dr. Samuel Jator joins Lamar University as Senior Associate Provost and Dr. Kye Kang named QEP Director; Report on Year 1-2 due (Fall 2022); QEP revised based on recommendations from the QEP Assessment Committee (Spring 2023)
Work with remaining departments to establish Math Pathways that work for health and social sciences fields.
- March – Communicate the findings from the Report on Year 1-2 with the QEP faculty

- June – Launch the pilot program for the Just-in-Time Homework Help during summer.
- Summer 2023 review AY 2022/23 data from Math courses.
- Continue work on fellowship plan and gathering data from PDP

2023 - 2024 – Year 4

- August – Fellowship plan completed
- Continue data collection and analysis

2024 - 2025 – Year 5

- March 2025 – QEP report due to SACSCOC

Appendix A: A Brief History of the QEP at Lamar University

In 2015 Dr. Melissa Hudler initiated a process for selecting and developing Lamar University's QEP in preparation for a 2019 SACSCOC reaffirmation on-site visit. The QEP Committee invited proposals and conducted a vote on three topics, none of which had the support of the campus community. Soon after, Dr. Hudler resigned as QEP Director to return to full-time teaching and Dr. Judith Mann was appointed to the position in January 2017. Dr. Mann formed a new broad-based Steering Committee that proposed a new QEP titled *WINGS of Success* with the focus on providing support systems for students struggling in math courses, including co-requisite.

During the 2017-2018 academic year, events unfolded that raised concerns about the proposed WINGS of Success QEP. First, SACSCOC Standard 7.2 changed to focus on student success or student learning outcomes, which did not align with the student support focus of WINGS of Success. Next a new state law required the use of co-requisite college readiness courses, making WINGS of Success a legal mandate and no longer eligible as a QEP. Finally, in October 2018 the Provost appointed Dr. Jeremy Alm QEP Director.

Under his leadership Dr. Jeremy Alm constituted a third steering committee, reviewed the requirements for a QEP under the revised SACSCOC Standard 7.2, and chose to keep the mathematics focus. The Committee sought input from students, administration, college deans, department chairs, faculty, staff, and student support services. Outside consultants, Dr. Brian Loft from Sam Houston State University and Dr. Rebecca Goosen from San Jacinto Community College provided their professional guidance about establishing mathematics pathways as they relate to student achievement. Following discussions, the QEP Steering Committee proposed Math to a Degree to University leadership.

Appendix B: Math Pathways: Non-algebraic and Algebraic

Non-algebraic pathways	Algebraic pathways
MATH 1332 – MATH 1342	MATH 1314 – MATH 1316
MATH 1342 – PSYC 2317	MATH 2311, 2312, 2413, 2414 (Precalc/calc)
	MATH 1324 – BUAL 2310
	MATH 1314 – MATH 1350

Appendix C: College Abbreviations

College abbreviation	College
COFAC	College of Fine Arts and Communication
COEHD	College of Education and Human Development
COE	College of Engineering
COAS	College of Arts and Sciences
COB	College of Business

Appendix D: Math Pathway Breakdown of Declarations of Intent

College	Non-algebraic pathways	Algebraic pathways	One math pathway
COFAC	14	0	10
COEHD	6	0	3
COE	0	5 (Precalc/calc)	1
COAS	7	9, 2 (Precalc/calc)	7
COB	0	17, 2 (Precalc/calc)	0
Total	27	35	21

Appendix E: QEP Committee Rosters 2022 –

Beginning with November 2022 the QEP will have two committees:

Steering Committee

Dr. Theresa Hefner-Babb – Asst. Provost Accreditation & Assessment
 Dr. Kye Kang – QEP Director
 Dr. Samuel Jator – Senior Associate Provost
 Dr. Daniel Brown, Provost
 Dr. Jackie Jensen-Vallin – Interim Chair, Department of Mathematics
 Dr. Jeremy Alm – Associate Dean, College of Arts & Sciences

Assessment Committee

Dr. Kye Kang – QEP Director
 Dr. Theresa Hefner-Babb – Asst. Provost Accreditation & Assessment ex-officio
 Dr. Samuel Jator – Senior Associate Provost – ex-officio
 Mr. Jarrod Rossi – Asst. Director of Institutional Effectiveness
 Dr. Jackie Jensen-Vallin – Interim Chair, Department of Mathematics
 Dr. Freddie Titus – Interim Vice President of Diversity, Inclusion, and Community Relations
 Dr. Kyle Boudreaux – Director of Institutional Research & Reporting

Appendix F: QEP Budget (Revised)

	2020 - 2021	2021 - 22	2022 - 23
Student Asst	4,500	9,000	9,000
QEP Director			38,909
Stipend	20,000	14,399	
Travel	7,830	8,000	8,000
Other Expenditures	24,575	25,000	25,000
Total	56,905	56,399	80,909



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