Mathematical Sciences [BS] [BS-MSCI]

Cycles included in this report:
Jun 1, 2020 to May 31, 2021

Program Name: Mathematical Sciences [BS] [BS-MSCI]

Reporting Cycle: Jun 1, 2020 to May 31, 2021

1 Is this program offered via Distance Learning?

100% Traditional or less than 50% Distance/Traditional

2 Is this program offered at an off-site location?

No

2.1 If yes to previous, provide addresses for each location where 50% or more of program credits may be earned.

3 Example of Program Improvement

2015-2016:
In the spring semester of 2016 a history of mathematics course was developed (MATH 461-591) and added to the 2016-2017 catalog. The course was first taught in online format in the summer of 2016. The topics include Ancient, Greek and Medieval mathematics along with Theory of Equations and the creation of the calculus. Students are required to write three brief biographies of mathematicians: one classical, one medieval/renaissance, and one from the age of enlightenment/19th century. This paper requires some research and multiple sources.The creation of the course was in response to suggestions made by National Council for Teachers of Mathematics reviewers. The course will allow our majors an opportunity to better understand the historical context of the mathematics that are covered in their other courses.

2016-2017:
By applying the vocabulary and ideas from blooms taxonomy, the syllabi for all of the upper division mathematics courses have been rewritten. This was done as a response to the results from our course embedded assessment of the student learning outcome: 'Graduates construct valid mathematical arguments in the area of analysis, modern algebra, and statistics'. The new syllabi should prove helpful to the faculty who teach the courses involved in constructing more appropriate embedded exam questions and also more effectively evaluate the student responses to these questions. The result should be more useful data.

2017-2018:
To better meet the needs and interests of our majors, the department is introducing a new concentration in computer science for the BS in Mathematics.

The program for the mathematics education concentration is being considerably revised to meet the requirement imposed by the state of Louisiana that students must complete a year of student teaching rather than one semester as is currently the case.

2018-2019:
The mathematics education concentration has been revised to meet the new requirements of the state. The physics concentration has been revised to better reflect the physics courses which are actually offered. A new concentration in Computational Science has been added. We have also added an applied statistics minor.

2019-2020:
The Mathematics methods course, Educ 402, is now being taught by Dr. Christine Eastman. Dr. Eastman is a member of Department of Mathematical Sciences and has extensive experience with the local schools.

2020-2021:
All program faculty learned to teach online. Students gained experience presenting their work online and collaborating with others online.

4 Program Highlights from the Reporting Year

2015-2016:
Mathematical Sciences major Steven Dabelow won first place in the undergraduate student paper competition for his talk entitled "Regions of Stability of the BZ Reactions" at the 93rd annual meeting of the Louisiana-Mississippi Section of the Mathematical Association of America held at Louisiana State University-Shreveport, February 25-27, 2016.

2016-2017:
A four member team McNeese mathematics major (Hailee Gilroy, David Guillory, Phat Ngo, and Britt Qualls) took third place in the annual undergraduate team mathematics competition held in conjunction with the annual section meeting of the LA-MS section of the Mathematical Association of America in the spring of 2017 at Millsaps College in jackson, MA. Some 17 four-student teams from universities and colleges from across Louisiana and Mississippi participated, including some of the big research universities.

Phat Ngo, a McNeese undergraduate mathematics major, took third place in the Integration Bee held during the same section meeting. Some 30 students, again from universities and colleges from across Louisiana and Mississippi, competed individually, evaluating definite and indefinite integrals.

2017-2018:
The department is very pleased with the results of our graduating seniors on the Major Field Test. Three of the four achieved 86th, 92nd, and 96th percentile scores. This is our best performance in at least the last twenty years. The ETS[®] Major Field Tests are comprehensive undergraduate and MBA outcomes assessments designed to measure the critical knowledge and understanding obtained by students in a major field of study.

2018-2019:
One of our majors, Hailee Gilroy, made a score in the top 10% in the Major Field Test.
Haile also presented a paper entitled "Constructing Steiner Triple Systems" at the MAA Mathfest held July 31-Aug 3 in Cincinnati, Ohio.

2019-2020:
Hailee Gilroy (BS in Math. Spring 2020) has been accepted into the Ph.D. program in Mathematics at Auburn University in Auburn, Alabama.

2020-2021:
Austin Nelson scored 200 on the Major Field Test. This is the highest score possible. He is pursuing a Ph.D. at Texas Tech U. this coming fall.

5 Program Mission

The purpose of the Bachelor of Science in Mathematical Sciences program is to provide students with a solid grounding in mathematics, encourage students to become effective problem solvers and foster the students' ability to effectively convey their mathematical knowledge. Concentrations in Mathematics, Statistics, Mathematics Education, Physics Education and Physics are offered within this degree program. The Mathematics/Physics Education concentrations provide graduates with practical skills in the professional competencies required of mathematics/physics teachers and lead to certification to teach mathematics/physics at the secondary level, grades 6-12, in the State of Louisiana. Other concentrations prepare students for a variety of careers in mathematical sciences or for entrance into a graduate program in mathematical sciences. Stakeholders: graduate schools, employers.

6 Institutional Mission Reference

This degree supports the University's fundamental mission to offer baccalaureate curricula in service to the residents and employers of the SWLA region and beyond. It prepares students to become effective in academic and professional environments.

7 Assessment and Benchmark MATH 190 Final Exam

Assessment: MATH 190 (Calculus I) final exam embedded questions.

Benchmark: 60% of students will achieve 60% success on items assessing problem-solving skills on the Math 190 final exam.

Prior to 2016-2017, the benchmark was for the MATH 170 exam.

Outcome Links

Problem Solving [Program]
Graduates effectively solve problems in the mathematical sciences.

7.1 Data

MATH 170:

Term	% of students with 60% or higher	Benchmark met?
Fall 2013	68%	Yes
Spring 2014	56%	No
Fall 2014	63%	Yes
Spring 2015	65%	Yes
Fall 2015	57%	No
Spring 2016	56%	No

MATH 190:

Term	Students with 60% or higher		Benchmark met?
	#	%	
Fall 2017	0/1	0%	No
Spring 2017	3/3	100%	Yes
Fall 2018	5/5	100%	Yes
Spring 2019	2/5	40%	No
Fall 2019	1/2	50%	No
Spring 2020	1/1	100%	Yes
Fall 2020	—	—	—
Spring 2021	1/1	100%	Yes

Outcome Links

Problem Solving [Program]
Graduates effectively solve problems in the mathematical sciences.

7.1.1 Analysis of Data and Plan for Continuous Improvement

2015-2016:
Three of the five current assessment items occur at the end the semester in the curriculum. Material at this point is often rushed, especially if we unexpectedly lose a day of instruction administratively. The committee responsible for Math 170 will meet in the coming semester to discuss the possibility of selecting assessment items that are spread more evenly throughout the semester.

2016-2017:
No data. Assessment is new this year.
Rather than making this assessment in MATH 170 (Pre-calculus), we will make it in MATH 190 (Calculus I). This should be a better assessment point for our majors. MATH 190 instructors should find it easier to identify the math majors among their students.

2017-2018:

Three out of four students assessed this year achieved 60% or higher on the benchmark. The benchmark was met. The department will improve data collection to identify all math majors taking MATH 190.

2018-2019:
For the 2018-19 academic year, we have a success rate of 70% (7 out of 10 math majors). The benchmark for the year was met. We will continue to work on improving our procedures for collecting this disaggregated gen ed data. Gen ed data for all Math 190 students is now submitted by individual instructors directly to IRE. Thus, it is necessary for the department to collect data on Math majors separately at the end of each semester.

2019-2020:
DMS had fewer majors enrolled in Math 190, but they were fairly successful in spite of the shift to the online environment.

2020-2021:
Data from fall is missing and there were very few math majors enrolled in Math 190 in the spring.

Outcome Links

Problem Solving [Program]
Graduates effectively solve problems in the mathematical sciences.

8 Assessment and Benchmark MATH 411 Course-embedded Assessment

Assessment: MATH 411 Course-embedded assessments of ability to construct valid mathematical arguments.

Benchmark: 70% of majors will achieve 70% or greater success on the relevant final exam questions in MATH 411, Advanced Calculus.

Prior to 2016-2017, the benchmark was that 60% of majors will receive a success rate of 70% or higher.

Outcome Links

Mathematical Arguments [Program]
Graduates construct valid mathematical arguments in the areas of analysis, modern algebra, and statistics.

8.1 Data

Academic Year	% of majors achieving a 70% success rate	Benchmark met?
2013-2014	75%	Yes
2014-2015	95%	Yes
2015-2016	71%	Yes
2016-2017	55%*	No

*82% achieved 60%.

Academic Year	Majors achieving a 70% success rate		Benchmark met?
	#	%	
2017-2018	4/6	67%	No
2018-2019	8/12	67%	No
2019-2020	6/8	75%	Yes
2020-2021	4/5	80%	Yes

Outcome Links

Mathematical Arguments [Program]
Graduates construct valid mathematical arguments in the areas of analysis, modern algebra, and statistics.

8.1.1 Analysis of Data and Plan for Continuous Improvement [Approved]

2016-2017:
This is the second year for the 70% benchmark. It was increased from 60% two years ago. Even though there was a drop from 71% to 55%, there is no cause for concern. The exam was made slightly more difficult and 82% of majors still achieved the old 60% benchmark.

2017-2018:
The benchmark was not met. The benchmark will be maintained. Starting next year the department will identify specific assessment items that the students found to be challenging.

2018-2019:
Although the benchmark was not met, the success rate fell just below 70%. The students were most successful with the Induction proof and were least successful with a question involving the Intermediate Value Theorem. While the students were able to state the theorem correctly and demonstrate understanding of a basic application, they had difficulty with a proof requiring them to make connections that they had not previously made. The plan for continuous improvement is to provide a greater number of opportunities for students to make these type of connections.

2019-2020:
Assignments made during class have been made more difficult in an effort to have students construct proofs with more connections.

2020-2021:
Continue to assign problems involving multi-step proofs, giving students the opportunity to reflect and provide hints and guidance when needed.

Outcome Links

Mathematical Arguments [Program]
Graduates construct valid mathematical arguments in the areas of analysis, modern algebra, and statistics.

9 Assessment and Benchmark MATH 421 Course-embedded Assessment

Assessment: MATH 421 Course-embedded assessments of ability to construct valid mathematical arguments.

Benchmark: 70% of majors will achieve 70% success on the relevant final exam questions in MATH 421, Modern Algebra.

Prior to 2016-2017, the benchmark was that 60% of majors will receive a success rate of 70% or higher.

Outcome Links

Mathematical Arguments [Program]
Graduates construct valid mathematical arguments in the areas of analysis, modern algebra, and statistics.

9.1 Data

Academic Year	% of majors achieving a 70% success rate	Benchmark met?
2013-2014	92%	Yes
2014-2015	77%	Yes
2015-2016	92%	Yes
2016-2017	63%	No

	Majors achieving	

Academic Year	a 70% success rate		Benchmark met?
	#	%	
2017-2018	10/13	77%	Yes
2018-2019	6/7	86%	Yes
2019-2020	8/11	73%	Yes
2020-2021	4/5	80%	Yes

Outcome Links

Mathematical Arguments [Program]
Graduates construct valid mathematical arguments in the areas of analysis, modern algebra, and statistics.

9.1.1 Analysis of Data and Plan for Continuous Improvement

2016-2017:
Faculty discussed possible reasons that the benchmark was not quite met this year.

2017-2018:
The benchmark was met. Starting next year the department will identify specific assessment items that the students found to be challenging.

2018-2019:
Overall students did very well on the assessment items this year. Only one student failed to meet the benchmark. One area that a small number of students struggled with was remembering to include all necessary details for mathematical proofs that involve multiple steps. One such proof was a problem where students were required to prove that a given function was an isomorphism from the real numbers under addition to the group of positive real numbers under multiplication.

Faculty were pleased with the student's responses to the assessment items, but will continue to emphasize proofs throughout this course.

2019-2020:
Student proof presentations to their peers helped them learn techniques of proof writing. We will continue to use this technique in either in-person teaching or virtual format.

2020-2021:
Students did well considering the impacts of the natural disasters occurring during the fall semester.

Outcome Links

Mathematical Arguments [Program]
Graduates construct valid mathematical arguments in the areas of analysis, modern algebra, and statistics.

10 Assessment and Benchmark MATH 431 Course-embedded Assessments

Assessment: MATH 431 Course-embedded assessments of ability to construct valid mathematical arguments.

Benchmark: 70% of majors will achieve a 70% success rate on relevant final exam questions in MATH 431, Mathematical Statistics and Probability.

Prior to 2016-2017, the benchmark was that 60% of majors will receive a success rate of 70% or higher.

Outcome Links

Mathematical Arguments [Program]
Graduates construct valid mathematical arguments in the areas of analysis, modern algebra, and statistics.

10.1 Data

Academic Year	% of majors achieving a 70% success rate	Benchmark met?
2013-2014	92%	Yes
2014-2015	97%	Yes
2015-2016	74%	Yes
2016-2017	N/A*	N/A

*For 2016-2017, the MATH/STAT 431 instructor was unavailable.

Academic Year	Majors achieving a 70% success rate		Benchmark met?
	#	%	
2017-2018	5/7	71%	Yes
2018-2019	10/13	77%	Yes
2019-2020	6/6	100%	Yes
2020-2021	4/5	80%	Yes

Outcome Links

Mathematical Arguments [Program]
Graduates construct valid mathematical arguments in the areas of analysis, modern algebra, and statistics.

10.1.1 Analysis of Data and Plan for Continuous Improvement [Approved]

2016-2017:
No data for this year. This is the first year for the 70% benchmark. It has been increased from 60% the previous year.

2017-2018:
The benchmark was met. Starting next year the department will identify specific assessment items that the students found to be challenging.

2018-2019:
Students excelled at using Bayes' Theorem to find conditional probabilities as well as using integrals to find probabilities for continuous distributions. Using critical thinking skills to find a percentile of a distribution proved to be more of a challenge.

2019-2020:
Cohort demonstrated improvement in critical thinking skills to find a percentile of a distribution.

2020-2021:
Program faculty are pleased that the benchmark was met.

11 Assessment and Benchmark MATH 491 Capstone Project

Assessment: MATH 491 Capstone Project

Benchmark 1: Average scores will be 90% on the following items from the presentation evaluation form filled out by faculty members: Content, Organization, and Delivery.

Prior to 2018-2019, the benchmark was average scores will be 80%.

Benchmark 2: 100% of students will achieve a satisfactory rating on the research paper for the capstone project.

Outcome Links

Communication [Program]
Graduates express mathematical thinking effectively through oral and written communications.

11.1 Data

Academic Year	# of students	Content	Organization	Delivery	Benchmark met?
2013-2014	-	85.45%	86.67%	88.81%	Yes
2014-2015	-	90.00%	93.75%	85.00%	Yes
2015-2016	-	90.25%	94.45%	90.89%	Yes
2016-2017	-	94.53%	95.86%	97.42%	Yes
2017-2018		94.35%	93.46%	96.23%	Yes
2018-2019	8	92.35%	92.39%	93.05%	Yes
2019-2020	5	95.20%	94.60%	92.60%	Yes
2020-2021	4	95.60%	97.6%	97.00%	Yes

Outcome Links

Communication [Program]
Graduates express mathematical thinking effectively through oral and written communications.

11.1.1 Analysis of Data and Plan for Continuous Improvement

2016-2017:
Faculty have been using the same rubric for this assignment for three years, and they will begin using the new Navigate Your Future presentation rubric this academic year.

2017-2018:
The benchmark will increase to 90% from 80%.

2018-2019:
The new benchmark of 90% was met. Program faculty agree that Math 236 (Mathematical Software), a course that was added to the curriculum in recent years, has helped students to develop skills needed for developing presentations. In addition, student success in this area has been aided by research experiences in earlier coursework, particularly those involving investigation of history of mathematics topics. We will continue to encourage early experiences with research as a plan for continuous improvement.

2019-2020:
Four of the five capstone projects were in Spring. The students did their presentations online in difficult circumstances. Our plan is to stay flexible and improve our use of videoconferencing.

2020-2021:
Students again presented online. Students and faculty learned to troubleshoot technology problems. We benefited from our experience from last year.

Outcome Links

Communication [Program]
Graduates express mathematical thinking effectively through oral and written communications.

11.2 Data

Academic Year	Students that achieved a satisfactory rating		Benchmark met?
	#	%	
2013-2014	-	100%	Yes
2014-2015	-	100%	Yes
2015-2016	-	100%	Yes
2016-2017	-	100%	Yes

2017-2018	-	100%	Yes
2018-2019	8/8	100%	Yes
2019-2020	5/5	100%	Yes
2020-2021	4/4	100%	Yes

Outcome Links

Communication [Program]
Graduates express mathematical thinking effectively through oral and written communications.

11.2.1 Analysis of Data and Plan for Continuous Improvement

2015-2016:
The faculty has been using a rubric to score these papers, and they will begin reporting the rubric-based scores in 2017-2018.

2016-2017:
The scores have shown improvement from 2015-2016. This may well be due to the changing of MATH 491 to a full three hour course taught by actual mathematics faculty. Previously the course has been taught by a computer science faculty member who was not well versed in the expectations and subject matter of a mathematical education. in addition the very extensive and close mentoring be a faculty member with whom the students have previously worked leads to very high scores among the students taking the course. No changes are recommended for the upcoming year beyond those imposed by the QEP committee.
The current rubric will be compared with the QEP rubric. Changes will be made to provide relevant data to the QEP committee.

2017-2018:
The department will use the QEP rubric starting next year.

2018-2019:
Benchmark is met. An area measured by the QEP rubric in which we have found students need support is Audience/Style, particularly awareness of intended audience and ability to present material succinctly. In mathematics, this is particularly challenging as it is difficult to appeal to a general audience while maintaining the appropriate level of rigor for a capstone paper. A close collaboration between mentors and students is needed for success in this area. Faculty will discuss new strategies for connecting students with potential mentors prior to the capstone experience.

2019-2020:
Faculty mentors acted on plan from last time. For example, one of our students, Whitney Frey, chose to discuss the Euler-Maclaurin formula. Applications were carefully chosen to be familiar the students in her audience.

2020-2021:
Faculty were very pleased with the depth of understanding demonstrated in the student papers.

Outcome Links

Communication [Program]
Graduates express mathematical thinking effectively through oral and written communications.

12 Assessment and Benchmark Major Field Test

Assessment: Major Field Test in Mathematics.

Benchmark: The mean score for mathematics students who take the major field test will be at or above the 50th national percentile.

Outcome Links

Problem Solving [Program]
Graduates effectively solve problems in the mathematical sciences.

12.1 Data

Academic Year	McNeese Results					National Results		McNeese's distance from national mean	Benchmark met?
	# of students who took exam	Low	High	Mean	Median	Mean	Median		
2013-2014	NA	136	154	146	148	156.4	151	-10.4	No
2014-2015	14	133	167	149	148	155	154	-6	No
2015-2016	6	126	158	142	140.5	156.3	154	-14.3	No
2016-2017	—	133	161	146.2	145	156.3	154	-10.1	No
2017-2018	4	147	200	171.5	181.5	156.3	154	+15.2	Yes
2018-2019	11	141	192	160	156	156.3	154	+3.7	Yes
2019-2020	1	159	159	159	159	156.3	154	+2.7	Yes
2020-2021	5	144	200	167.2	168	156.3	154	+10.9	Yes

Outcome Links

Problem Solving [Program]
Graduates effectively solve problems in the mathematical sciences.

12.1.1 Analysis of Data and Plan for Continuous Improvement

2016-2017:
After consideration of historical data, faculty will consider a possible adjustment to the current benchmark.

Review sessions for the MFT were provided. Program faculty will continue to provide guidance in preparing for the PRAXIS II exam and will encourage students to take advantage of opportunities to tutor lower division courses.
Students who have successfully passed the new Praxis II exam will organize study sessions for those students who are preparing to take the exam.

2017-2018:
The benchmark was met this year for the MFT. The department is very pleased with the performance of graduating seniors on the MFT this year. Three of the four achieved 86th, 92nd, and 96th percentile scores. This is our best performance in at least the last 20 years.

2018-2019:
The benchmark was met again this year for the MFT. One student achieved a 92nd percentile score.

2019-2020:
Only one student took the Major Field Test in the fall. None of spring candidates were able to take it due to the Covid pandemic. The department is pleased by the results of the one student who did take the test.

2020-2021:
Austin Nelson's score was impressive, in addition we had two other very excellent scores.

Outcome Links

Problem Solving [Program]
Graduates effectively solve problems in the mathematical sciences.

13 Assessment and Benchmark Alumni Survey

Assessment: Particular items on the Alumni Survey serve as indirect assessments of student learning.

Benchmark 1: The average scores for the following items will be 4.50:

7a - Critical thinking skills
7b - Mathematical problem solving

Prior to 2018-2019, the benchmark was 4.00.

Benchmark 2: The average scores for the following items will be 4.00:

7e - Effective oral communications
7f - Effective written communications

Outcome Links

Communication [Program]
Graduates express mathematical thinking effectively through oral and written communications.

Problem Solving [Program]
Graduates effectively solve problems in the mathematical sciences.

13.1 Data

Academic Year	# of respondents	Average 7a	Average 7b	Benchmark met?
2013-2014	—	4.00	4.00	Yes
2014-2015	—	5.00	5.00	Yes
2015-2016	—	5.00	5.00	Yes
2016-2017	—	4.75	5.00	Yes
2017-2018	9	4.77	4.88	Yes
2018-2019	6	4.16	4.33	No
2019-2020	0	—	—	—
2020-2021	0	—	—	—

Outcome Links

Problem Solving [Program]
Graduates effectively solve problems in the mathematical sciences.

13.1.1 Analysis of Data and Plan for Continuous Improvement

2015-2016:
Senior faculty members created the survey specifically for the BS in Mathematical Sciences to be initially administered in 2013-2014. The survey is revised each academic year. The department continues to achieve its benchmark, so next year, the benchmark will raise from 3.5 to an average score of 4.0 on these items.

2016-2017:
Faculty continues to be pleased by the results of the alumni survey. Faculty are also pleased that there were more respondents this year.

2017-2018:

The benchmark will increase to 4.50 from 4.00.

2018-2019:

The new benchmark of 4.5 was not met. One comment on the survey indicated that real world applications should be given more emphasis. In response, advisors have discussed strategies for encouraging students to enroll in Mathematical Science electives that are more applied in nature.

2019-2020:
No survey data due to pandemic.

2020-2021:
No survey data due to hurricanes and pandemic.

Outcome Links

Problem Solving [Program]
Graduates effectively solve problems in the mathematical sciences.

13.2 Data

Academic Year	# of respondents	Average 7e	Average 7f	Benchmark met?
2013-2014	—	4.50	4.00	Yes
2014-2015	—	4.67	4.33	Yes
2015-2016	—	4.00	4.00	Yes
2016-2017	—	4.00	4.25	Yes
2017-2018	9	4.33	4.44	Yes
2018-2019	6	4	4	Yes
2019-2020	0	—	—	—
2020-2021	0	—	—	—

Outcome Links

Communication [Program]
Graduates express mathematical thinking effectively through oral and written communications.

13.2.1 Analysis of Data and Plan for Continuous Improvement

2015-2016:
Senior faculty members created the survey specifically for the BS in Mathematical Sciences to be initially administered in 2013-2014. The survey is revised each academic year. The department continues to achieve its benchmark, so next year, the benchmark will raise from 3.50 to an average score of 4.00 on these items.

2016-2017:
Faculty are pleased that benchmarks continue to be met.

2017-2018:
The benchmark will stay at 4.00.

2018-2019:
Benchmark was met. There was one outlier in the data. One respondent gave a rating of 1 on these items. Comments on the survey did not reveal the reason for this low rating. In the future, respondents will be encouraged to provide comments for below average scores.

2019-2020:
No survey data due to pandemic.

2020-2021:
No survey data due to hurricanes and pandemic.

Outcome Links

Communication [Program]
Graduates express mathematical thinking effectively through oral and written communications.

14 **Assessment and Benchmark** Exit Survey

Assessment: Particular items on the Exit Survey serve as indirect assessments of student learning.

Benchmark: The average scores for the following items will be 4.00:

31 - Confidence in ability to solve a problem in your discipline
32 - Confidence in ability to design a problem solution in your discipline

Prior to 2018-2019, the benchmark was 3.50.

Outcome Links

Problem Solving [Program]
Graduates effectively solve problems in the mathematical sciences.

14.1 **Data** [Approved]

Academic Year	Average 32	Average 33	Benchmark met?
2013-2014	4.20	4.30	Yes
2014-2015	4.30	3.90	Yes
2015-2016	3.80	3.60	Yes
2016-2017	4.00	4.40	Yes
2017-2018	4.50	4.50	Yes
2018-2019	4.44	4.56	Yes
2019-2020	—	—	—
2020-2021	5	5	Yes

Outcome Links

Problem Solving [Program]
Graduates effectively solve problems in the mathematical sciences.

14.1.1 **Analysis of Data and Plan for Continuous Improvement**

2015-2016:
Although the department continues to meet its benchmark, these scores are steadily declining. The department needs to brainstorm what may affect this decline in student confidence.

2016-2017:
Faculty are please that the scores have improved after a steady decline.

2017-2018:
The benchmark will be increased to 4.00 from 3.50.

2018-2019:
The benchmark is met. The department is considering the idea of an exit interview to supplement the information that we are seeking with this survey.

2019-2020:
No data due to pandemic and hurricanes.

2020-2021:

Based on comments from our survey we are considering ways to help our education majors with the content they need to teach their classes.

Outcome Links

Problem Solving [Program]
Graduates effectively solve problems in the mathematical sciences.

15 Assessment and Benchmark Students

Assessment: Students' professional participation.

Benchmark: At least one student will deliver a presentation at a professional event every two years.

Outcome Links

Communication [Program]
Graduates express mathematical thinking effectively through oral and written communications.

15.1 Data

Academic Year	# of presentations	Benchmark met?
2013-2014	Two presentations at the 2014 McNeese State University Teaching and Learning Conference.	Yes
2014-2015	Two presentations: Mathematical Sciences major Lauren Snider gave a talk entitled "Particular 1,M,N-Antiautomorphisms of Directed Triple Systems" at the Forty-Sixth Southeastern International Conference on Combinatorics, Graph Theory, and Computing held at Florida Atlantic University March 2-6, 2015. Lauren Snider and Steven Dabelow gave talks at Mathfest 2015 in Washington DC in August 2015.	Yes
2015-2016	One presentation: Mathematical Sciences major Steven Dabelow gave a talk entitled "Regions of Stability of the BZ Reactions" at the 93rd annual meeting of the Louisiana-Mississippi Section of the Mathematical Association of America held at Louisiana State University-Shreveport, February 25-27, 2016.	Yes
2016-2017	—	—
2017-2018	One presentation: Mathematical Sciences major Britt Qualls gave a talk entitled "Some Bicyclic Antiautomorphisms of Mendelsohn Triple Systems" at the 49th Southeastern International Conference on Combinatorics, Graph Theory and Computing held at Florida Atlantic University on March 5, 2018. Even though the talk was given after Britt graduated, the talk was an expanded version of his capstone project as an undergraduate.	Yes
2018-2019	Jason Jones presented his paper entitled "An Introduction to Sabermetric" the annual section meeting of the LA-MS section held at Millsaps college in March 2019. Haile Gilroy presented her paper entitled "Constructing Steiner Triple Systems"at Mathfest, the annual summer national MAA meeting in Cincinnati, Ohio in August 2019.	Yes
2019-2020	—	—
2020-2021	No presentations.	—

15.1.1 Analysis of Data and Plan for Continuous Improvement

2015-2016:

In fall 2014, the department began new undergraduate mathematics research course, MATH 395. This course encourages students to engage in research earlier in their degree programs and provides more opportunities for presentations at professional meetings. Students will have the option to extend the research from this new course into their senior capstone projects.

2016-2017:
The department is meeting its benchmark for this assessment, and continues to encourage students to participate in research.

2017-2018:
Benchmark was met.

2018-2019:
Benchmark was met. The presentations were well received by conference participants.

2019-2020:
No undergraduate presentations this year.

2020-2021:
No undergraduate presentations this year.

Outcome Links

Communication [Program]
Graduates express mathematical thinking effectively through oral and written communications.

16 **Assessment and Benchmark** Praxis II Content Exam

Assessment: The Mathematics Education, Grades 7-12 Praxis Content Exam is #5161. This exam must be passed prior to student teaching. The passing score required by the state for 2017-2018 is 160.

Benchmark 1: Students will earn a minimum 160 mean overall score on the Praxis II content exam.

Prior to 2016-2017, the benchmark was a mean of 140 for the overall score on the Praxis II exam.

Benchmark 2: Praxis II subscore averages corresponding to each area of mathematics tested are within or above the average score range.

Benchmark 3: 80% of Mathematics Education majors will achieve a passing score on the Praxis Mathematics Education Exam (#5161) on the first attempt. Passing score set by the state is 160.

Outcome Links

Content and Pedagogy [Program]
Secondary mathematics teacher candidates demonstrate knowledge of the content and pedagogical practices relevant to secondary education.

16.1 **Data**

Academic Year	# of students	Mean score	Benchmark met?
2013-2014	-	151	Yes
2014-2015	-	146	Yes
2015-2016	-	165.5	Yes
2016-2017	-	169.3	Yes
2017-2018	-	161	Yes
2018-2019	3	170	Yes

| 2019-2020 | 2 | 167.5 | Yes |
| 2020-2021 | 2 | 169 | Yes |

Outcome Links

Content and Pedagogy [Program]
Secondary mathematics teacher candidates demonstrate knowledge of the content and pedagogical practices relevant to secondary education.

16.1.1 Analysis of Data and Plan for Continuous Improvement

2016-2017:
Benchmark raised from 140 average to 160 average. Students continue to meet the benchmark.

2017-2018:
Benchmark was met. Data is based on one candidate. Her score was 161, exceeding the qualifying score by one point.

2018-2019:
Benchmark was met. New Math Praxis workshops are being developed by instructors in our department. These additional opportunities for preparation are important components of our plan for continuous improvement.

2019-2020:
Benchmark was met. Workshops have been helpful.

2020-2021:
Benchmark was met. Workshops and individual help sessions will continue. Math Ed advisors will renew efforts to identify students who are 'at risk' in this area and develop a plan for preparation with individual students.

Outcome Links

Content and Pedagogy [Program]
Secondary mathematics teacher candidates demonstrate knowledge of the content and pedagogical practices relevant to secondary education.

16.2 Data

Academic Year	Algebra and Number Theory	Measurement, Geometry, and Trigonometry	Functions and Calculus	Data Analysis, Statistics, and Probability	Matrix Algebra and Discrete Mathematics	Sub-scores above average?
2013-2014	5.75/8	7.25/12	9.25/14	5/8	6.25/8	Yes
2014-2015	5/8	8/12	9/14	6/8	6/8	Yes

Academic Year	Number and quantity, algebra, functions and calculus (34)	Geometry, probability and statistics, and discrete mathematics (16)	Sub-scores above average?
2015-2016	24	11	Yes
2016-2017	24.5	13	Yes
2017-2018	22	9	Yes
2018-2019	24.3	12.7	Yes
2019-2020	23	12	Yes
2020-2021	24	12.5	Yes

Content and Pedagogy [Program]
Secondary mathematics teacher candidates demonstrate knowledge of the content and pedagogical practices relevant to secondary education.

16.2.1 Analysis of Data and Plan for Continuous Improvement

2016-2017:
Students continue to achieve the benchmark. Program faculty will continue to provide guidance in preparing for this exam and will encourage students to take advantage of opportunities to tutor lower division courses as this experience encourages them to continually review precalculus topics that are tested on this exam.

2017-2018:
Benchmark met.

2018-2019:
Benchmark was met. New Math Praxis workshops are being developed by instructors in our department. These additional opportunities for preparation are important components of our plan for continuous improvement.

2019-2020:
Benchmark was met. Workshops have been helpful.

2020-2021:
Benchmark was met. Workshops and individual help sessions will continue. Math Ed advisors will renew efforts to identify students who are 'at risk' in this area and develop a plan for preparation with individual students.

Outcome Links

Content and Pedagogy [Program]
Secondary mathematics teacher candidates demonstrate knowledge of the content and pedagogical practices relevant to secondary education.

16.3 Data

Academic Year	Graduates who passed on the first attempt		Graduates who passed		Benchmark met?
	#	%	#	%	
2013-2014	—	100%	—	100%	Yes
2014-2015	—	67%	—	100%	No
2015-2016	—	0%	—	100%	No
2016-2017	—	100%	—	100%	Yes
2017-2018	0/1	0%	1/1	100%	No
2018-2019	2/3	67%	3/3	100%	No
2019-2020	2/2	100%	2	100%	Yes
2020-2021	1/2	50%	2	100%	No

Outcome Links

Content and Pedagogy [Program]
Secondary mathematics teacher candidates demonstrate knowledge of the content and pedagogical practices relevant to secondary education.

16.3.1 Analysis of Data and Plan for Continuous Improvement

2016-2017:

The first attempt pass rate benchmark was met, and faculty are very pleased to achieve a 100% pass rate. With the new version of the exam (5161), it has become more difficult to achieve the Louisiana passing score of 160. The range for the middle 50% is 135-168.

2017-2018:
The benchmark was not met. Although program faculty continue to provide guidance in preparing for this exam and encourage students to take advantage of opportunities to tutor lower division courses to better prepare for the exam, the candidate was not able to take advantage of these opportunities.

Plan for continuous improvement:
The department will increase efforts to encourage group study for the Praxis Exam and will continue to encourage candidates to take advantage of the available opportunities to serve as departmental tutors for lower-division courses.

2018-2019:
Benchmark was not met as 1 of the 3 students did not pass on the first attempt. New Math Praxis workshops are being developed by instructors in our department. These additional opportunities for preparation are important components of our plan for continuous improvement.

2019-2020:
Benchmark met.

2020-2021:
Benchmark was NOT met. Workshops and individual help sessions will continue. Math Ed advisors will renew efforts to identify students who are 'at risk' in this area and develop a plan for preparation with individual students.

Outcome Links

Content and Pedagogy [Program]
Secondary mathematics teacher candidates demonstrate knowledge of the content and pedagogical practices relevant to secondary education.

17 Assessment and Benchmark Enrollment and Completers

Assessment: Enrollment numbers are based on candidates currently enrolled in the program who have submitted an EDUC 200 packet.

Benchmark: The EPP has set a goal to increase enrollment by 7% across programs each year from fall 2017 to fall 2021 to coincide with the MSU Strategic Plan goal concerning enrollment and recruitment.

17.1 Data

Academic Year	# officially enrolled with an EDUC 200 packet	# of completers in fall semester	# of completers in spring semester	Total # of completers
2013-2014	16			4
2014-2015	14			3
2015-2016	14			2
2016-2017	-	-	-	-
2017-2018	9	1	0	1
2018-2019	10	2	1	3
2019-2020		0	2	2
2020-2021	7	0	2	2

17.1.1 Analysis of Data and Plan for Continuous Improvement

2015-2016:
Enrollment dropped in 2014-2015 and remained consistent in 2015-2016. The benchmark was not met.

2016-2017:
This is the last year we will be conducting data analysis on this subject due to its assessment replacement.

2017-2018:
In 2017-2018 there were nine candidates in the mathematics education concentration having completed the EDUC 200 packet. There was one program completer. These numbers represent a five-year low.

Plan for continuous improvement:
We will continue our departmental recruitment efforts. We are also coordinating with Dwight Bertrand who is leading recruitment efforts in STEM disciplines in the College of Science and Agriculture, as well as with the Education Department and their program called Geaux Teach.

2018-2019:
Benchmark is met. We increased from 9 to 10 students enrolled and there were 3 graduates this year. We plan to participate in Geaux Teach again this year and we look forward to taking advantage of an additional Preview Day in the Fall semester.

2019-2020:
We had 2 graduates this year and the number of students enrolled (with 200 packet) is not avaialble. We are very pleased that adjustments were made in order to allow for student teaching to be completed virtually in Spring 2020 after Covid restrictions went into place.

2020-2021:
Number of students enrolled with 200 packet dropped to 7. Benchmark was not met, but program faculty are relieved that the decrease was not any greater in light of Covid and hurricanes. There were again two completers for the year. Program faculty participated in Unlock Education as well as Preview Days. These took on virtual forms this year, but in Spring 21 we were able to meet students face to face again at preview days. Dr. Ogea met with students through Ed Rising at Barbe, Sulphur, Kinder, Oakdale, South Beauregard. Next year, efforts will be made to involve more DMS faculty in the ALL CALL opportunity and a special effort will be made to reach out to those students who have indicated interest in Math Education.

18 Assessment and Benchmark FEE Content

Assessment: The Field Experience Evaluation Domain 5 measures the Content Specific Components related to teaching observations.
The FEE Scoring Scale is as follows: 1- Ineffective; 2- Effective: Emerging; 3- Effective: Proficient; 4- Highly Effective

Benchmark: 90% of the candidates will score a 3.50 or higher on each element of Domain 5 (Content Specific Components) on the Field Experience Evaluation (FEE) Rubric.

Prior to 2018-2019, the benchmark was 3.00.
Prior to 2017-2018, the benchmark was 100% of students will meet or exceed the benchmark of 2.00, set by the State of Louisiana.

Outcome Links

Content and Pedagogy [Program]
Secondary mathematics teacher candidates demonstrate knowledge of the content and pedagogical practices relevant to secondary education.

18.1 Data

MATH	Fall 2018	Spring 2019	Fall 2019	Spring 2020

Component	#	Mean	Range	#	Mean	Range	#	Mean	Range	#	Mean	Range
5.1	2	4.00	4.00	1	4.00	4.00	2	3.94	3.88-4.00	1	3.75	3.75
5.2	2	3.94	3.88-4.00	1	3.88	3.88	2	3.94	3.88-4.00	1	3.88	3.88
5.3	2	4.00	4.00	1	4.00	4.00	2	3.94	3.88-4.00	1	3.75	3.75
5.4	2	3.88	3.75-4.00	1	3.75	3.75	2	3.75	3.75	1	3.75	3.75
5.5	2	4.00	4.00	1	3.75	3.75	2	3.76	3.63-3.88	1	3.50	3.50
5.6	2	4.00	4.00	1	4.00	4.00	2	3.88	3.88	1	4.00	4.00
5.7	2	3.92	3.84-4.00	0			2	3.82	3.75-3.88	1	3.75	3.75
5.8	2	3.94	3.88-4.00	1	4.00	4.00	2	3.94	3.88-4.00	1	3.75	3.75
5.9	2	4.00	4.00	0			2	3.88	3.75-4.00	1	3.75	3.75
5.10	2	4.00	4.00	1	3.75	3.75	2	3.82	3.75-3.88	1	4.00	4.00
5.11	2	4.00	4.00	1	4.00	4.00	2	3.88	3.75-4.00	1	3.88	3.88
5.12	2	4.00	4.00	1	4.00	4.00	2	3.50	3.5	1	3.88	3.88
5.13	0			0			2	3.82	3.75-3.88	1	3.75	3.75
5.14	0			0			2	3.94	3.88-4.00	1	3.75	3.75
5.15	0			0								
5.16	1	4.00	4.00	1	4.00	4.00						

MATH		Fall 2018			Spring 2019			Fall 2019			Spring 2020	
Component	#	Mean	Range	#	Mean	Range	#	Mean	Range	#	Mean	Range
5.1	2	4.00	4.00	1	4.00	4.00						
5.2	2	4.00	4.00	1	3.88	3.88						
5.3	2	3.88	3.75-4.00	1	3.88	3.88						
5.4	2	3.48	3.25-3.71	1	3.88	3.88						
5.5	2	3.88	3.75-4.00	1	4.00	4.00						
5.6	2	4.00	4.00	1	4.00	4.00						
5.7	2	3.88	3.75-4.00	1	3.75	3.75						
5.8	2	4.00	4.00									
5.9	2	4.00	4.00	1	4.00	4.00						
5.10	2	3.50	3.25-3.75	1	4.00	4.00						
5.11	2	4.00	4.00	1	4.00	4.00						

5.12	1	4.00	4.00												
5.13	2	3.88	3.75-4.00	1	3.88	3.88									
5.14	2	4.00	4.00	1	4.00	4.00									
5.15															
5.16															

MATH	Fall 2020 N=0				Spring 2021			
Component	#	Mean	Range	% Proficient	#	Mean	Range	% Proficient
5.1					2	3.69	3.38-4.00	100%
5.2					2	3.57	3.25-3.88	100%
5.3					2	3.69	3.38-4.00	100%
5.4					1	2.88	2.88	0%
5.5					2	3.38	3.13-3.63	100%
5.6					2	3.17	3.00-3.33	100%
5.7					2	3.54	3.08-4.00	100%
5.8					1	3.58	3.58	100%
5.9					2	3.51	3.13-3.88	100%
5.10					2	3.63	3.25-4.00	100%
5.11					0			
5.12					2	3.57	3.13-4.00	100%
5.13					2	3.44	2.88-4.00	50%
5.14					2	3.57	3.25-3.88	100%
5.15					0			
5.16					0			
TECH 1					2	3.13	2.50-3.75	50%
TECH 2					2	3.76	3.63-3.88	100%
TECH 3					2	3.00	2.50-3.50	50%

MATH	Fall 2021				Spring 2022			
Component	#	Mean	Range	% Proficient	#	Mean	Range	% Proficient
5.1								
5.2								

5.3										
5.4										
5.5										
5.6										
5.7										
5.8										
5.9										
5.10										
5.11										
5.12										
5.13										
5.14										
5.15										
5.16										
TECH 1										
TECH 2										
TECH 3										

18.1.1 Analysis of Data and Plan for Continuous Improvement

2016-2017:
This benchmark has been met or exceeded.

2017-2018:
Data is based on one candidate and range from 3.50 to 4.00. The candidate's strongest areas were use of technology and ability to plan lessons that address learning goals and standards. The candidate's weakest area was use of various assessments. Benchmark will be raised to 3.50 from 3.00.

2018-2019:

It appears that the weakest areas are 5.4 and 5.10 which relate to analyzing the mathematical thinking of others and computational proficiency. However, only 1 student fell below benchmark on each of these items.

We suggest modifying the benchmark to a mean value of 3.5 on each indicator. The nature of the data given in the chart would not lend itself to readily determining whether the current (90%) benchmark is met when a greater number of students are involved. A benchmark based on the mean seems more appropriate.

2019-2020:
Discrepancy in number of students assessed this year was found. Data will be checked.

2020-2021:
Benchmark of 3.5 on each indicator is not met. Due to more thorough application of standards, we would like to rollback the benchmark to coincide with a proficient rating of 3 on each benchmark. There were a number of items for which one or both of the two students assessed this year did not achieve the proficient rating. They include: Commitment to learning with understanding, knowledge of instructional strategies, and indicators related to use of technology. Program faculty feel that these weaknesses could have been partially the result of the disastrous events of this year, but remain concerned and are motivated to discuss earlier assessment and intervention in these areas to assure better preparation for student teaching.

19 Assessment and Benchmark inTASC Standards - Lesson Planning

Assessment: InTASC Standards are aligned to the components of the lesson plan rubric.
Lesson Plan Rubric scoring scale: 1- Ineffective; 2- Effective: Emerging; 3- Effective: Proficient; 4- Highly Effective.

Benchmark: 80% of the candidates will score a 3.50 or higher on each element of the Lesson Plan Rubric.

Prior to 2018-2019, the benchmark was 3.00.

Outcome Links

Instructional Planning [Program]
Secondary mathematics teacher candidates plan effectively for instruction in secondary classes (grades 6-12) to include effective instructional delivery, appropriate content, opportunities for student involvement in the learning process, and assessments for student progress in secondary education.

19.1 Data

Rubric Element	Standard	InTASC Standard		Fall 2015	Spring 2016	Fall 2016	Spring 2017	Fall 2017	Spring 2018
Essential Questions			Number	0	2	1	2	1	0
			Mean		2.00	1.00	1.50		
			Range		2.00	1.00	1.00-2.00		
			% Proficient or Higher		0%	0%	0%		
Content Standards			Number						
			Mean		3.00	4.00	3.00		
			Range		3.00	4.00	3.00		
			% Proficient or Higher		100%	100%	100%		
Student Outcomes		4n	Number						
			Mean		3.00	3.00	3.00	4.00	
			Range		3.00	3.00	3.00	4.00	
			% Proficient or Higher		100%	100%	100%	100%	
Technology		5l	Number						
			Mean		3.00	4.00	4.00	4.00	
			Range		3.00	4.00	4.00	4.00	
			% Proficient or Higher		100%	100%	100%	100%	
Educational Materials			Number						
			Mean		3.00	4.00	4.00		
			Range		3.00	4.00	4.00		
			% Proficient or Higher		100%	100%	100%		

			Number						
			Mean		3.00	3.00	1.50	4.00	
Procedures		3k	Range		3.00	3.00	1.00-2.00	4.00	
			% Proficient or Higher		100%	100%	0%	100%	
			Number						
			Mean		2.50	2.00	2.00	4.00	
Lesson "Hook"		8j	Range		2.00-3.00	2.00	2.00	4.00	
			% Proficient or Higher		50%	0%	0%	100%	
			Number						
			Mean		2.00	2.00	2.50	4.00	
Pre-Planned (Seed) Questions		8i	Range		2.00	2.00	2.00-3.00	4.00	
			% Proficient or Higher		0%	0%	50%	100%	
			Number						
			Mean		3.00	3.00	1.50	4.00	
Modeled, Guided, Collab, & Ind. Practice		7k	Range		3.00	3.00	1.00-2.00	4.00	
			% Proficient or Higher		100%	100%	0%	100%	
			Number						
			Mean		2.00	1.00	2.00		
Closure			Range		2.00	1.00	2.00		
			% Proficient or Higher		0%	0%	0%		
			Number						
			Mean		2.50	3.00	3.00	4.00	
Formative / Summative Assessment		6j	Range		2.00-3.00	3.00	2.00-4.00	4.00	
			% Proficient or Higher		50%	100%	50%	100%	
			Number						
			Mean		3.00	3.00	2.00	4.00	
Relevance & Rationale		2j	Range		3.00	3.00	2.00	4.00	
			% Proficient or Higher		100%	100%	0%	100%	
			Number						
			Mean		2.00	2.00	2.00	4.00	

Exploration, Extension, Supplemental		1e	Range		2.00	2.00	2.00	4.00	
			% Proficient or Higher		0%	0%	0%	100%	
Differentiation		7j	Number						
			Mean		2.00	1.00	1.50	4.00	
			Range		2.00	1.00	1.00-2.00	4.00	
			% Proficient or Higher		0%	0%	0%	100%	

Rubric Element	Standard	InTASC Standard		Fall 2018	Spring 2019	Fall 2019	Spring 2020
Essential Questions			Number				
			Mean				
			Range				
			% Proficient or Higher				
Content Standards			Number	1	1		
			Mean	4.00	4.00		
			Range	4.00	4.00		
			% Proficient or Higher	100%	100%		
Student Outcomes		4n	Number	1	1		
			Mean	3.00	4.00		
			Range	3.00	4.00		
			% Proficient or Higher	100%	100%		
Technology		5l	Number	1	1		
			Mean	4.00	1.00		
			Range	4.00	1.00		
			% Proficient or Higher	100%	0%		
Educational Materials			Number	1	1		
			Mean	4.00	4.00		
			Range	4.00	4.00		
			% Proficient or Higher	100%	100%		
Procedures		3k	Number	1	1		
			Mean	3.00	4.00		
			Range	3.00	4.00		
			% Proficient or Higher	100%	100%		
			Number	1	1		
			Mean	3.00	3.00		

Lesson "Hook"		8j	Range	3.00	3.00		
			% Proficient or Higher	100%	100%		
Pre-Planned (Seed) Questions		8i	Number	1	1		
			Mean	4.00	4.00		
			Range	4.00	4.00		
			% Proficient or Higher	100%	100%		
Modeled, Guided, Collab, & Ind. Practice		7k	Number				
			Mean				
			Range				
			% Proficient or Higher				
Closure			Number	1	1		
			Mean	4.00	4.00		
			Range	4.00	4.00		
			% Proficient or Higher	100%	100%		
Formative / Summative Assessment		6j	Number				
			Mean				
			Range				
			% Proficient or Higher				
Relevance & Rationale		2j	Number	1	1		
			Mean	3.00	4.00		
			Range	3.00	4.00		
			% Proficient or Higher	100%	100%		
Exploration, Extension, Supplemental		1e	Number	1	1		
			Mean	4.00	4.00		
			Range	4.00	4.00		
			% Proficient or Higher	100%	100%		
Differentiation		7j	Number		1		
			Mean		4.00		
			Range		4.00		
			% Proficient or Higher		100%		
Student Use of Technology			Number	1			
			Mean	4.00			
			Range	4.00			
			% Proficient or Higher	100%			
Teacher Use of Technology			Number	1			
			Mean	4.00			
			Range	4.00			

			% Proficient or Higher	100%			
Interdisciplinary Connections			Number	1	1		
			Mean	4.00	4.00		
			Range	4.00	4.00		
			% Proficient or Higher	100%	100%		
Modeled Guided Practice (Whole Group)			Number	1	1		
			Mean	3.00	4.00		
			Range	3.00	4.00		
			% Proficient or Higher	100%	100%		
Collaborative Practice (Small Group or Paired)			Number	1	1		
			Mean	4.00	4.00		
			Range	4.00	4.00		
			% Proficient or Higher	100%	100%		
Independent Practice (Individual)			Number	1	1		
			Mean	4.00	4.00		
			Range	4.00	4.00		
			% Proficient or Higher	100%	100%		
Content Connection to Assigned Strategy			Number		1		
			Mean		4.00		
			Range		4.00		
			% Proficient or Higher		100%		
Informal Assessment			Number	1	1		
			Mean	4.00	4.00		
			Range	4.00	4.00		
			% Proficient or Higher	100%	100%		
Formal Assessment			Number	1	1		
			Mean	4.00	4.00		
			Range	4.00	4.00		
			% Proficient or Higher	100%	100%		
Differentiation by Content			Number	1			
			Mean	4.00			
			Range	4.00			
			% Proficient or Higher	100%			
Differentiation by Learning			Number	1			
			Mean	4.00			
			Range	4.00			
			% Proficient				

			or Higher	100%				
Post-lesson Reflection			Number	1				
			Mean	4.00				
			Range	4.00				
			% Proficient or Higher	100%				

2020-2021:
See attached file for 2020-2021 data.

Files: See list of attachments to view. (Requires Adobe Reader or compatible viewer).

MATH ED_ Lesson Plan Data_20-21

19.1.1 Analysis of Data and Plan for Continuous Improvement

2016-2017:
Essential Questions will be removed from the lesson plan rubric because they do not align to P-12 classroom instruction of completers.
Categories below benchmark are being addressed through the revision and clarification of the lesson plan instructions.

2017-2018:
Benchmark was met. Data is based on one candidate. The candidate scored 4.00/4.00 on assessed items. Benchmark will be raised to 3.50 from 3.00.

2018-2019:
Data is based on two candidates. The average of these two fell below benchmark for two items: Technology and Lesson Hook. It appears that the Spring 19 candidate had significant difficulty with Technology. Program faculty will be consulted to determine the reasons for this deficiency.

2019-2020:
Data not available for this year.

2020-2021:
Benchmark of 3.5 on each indicator is not met. Due to more thorough application of standards, we would like to rollback the benchmark to coincide with a proficient rating of 3 on each benchmark. There were multiple items for which one or both of the two students assessed this year did not achieve the proficient rating. The areas of greatest concern were those where neither candidate achieved proficiency. These areas include: Pre-planned seed questions, small group instruction, Assessments, Differentiation by learner, and Reflection on Instructional Strategies. Efforts toward improvement will include improved communication between DMS faculty and the EDUC 440 professor concerning the weaknesses of our candidates.

20 Assessment and Benchmark FEE - Specific inTASC Standards

Assessment: The Field Experience Evaluation (FEE) measures the following elements: Domain 1: Planning and Preparation; Domain 2: Classroom Environment; Domain 3: Instruction, and Domain 4: Professionalism.
The following scoring scale is used: 1- Ineffective; 2- Effective: Emerging; 3- Effective: Proficient; 4- Highly Effective.

Benchmark: Candidates will earn a mean score of 3.00 or higher on each element in the Field Experience Evaluation (FEE) Rubric for Domains 1-4.

Prior to 2019-2020 the benchmark was, 90% of candidates will score a 3.00 or higher on each element in the Field Experience Evaluation (FEE) Rubric for Domains 1-4.

Outcome Links

Instructional Delivery [Program]
Secondary mathematics teacher candidates successfully complete and demonstrate effective instructional planning and teaching within practica and student teaching settings, reflecting on and refining professional practices suitable for secondary education.

Instructional Planning [Program]
Secondary mathematics teacher candidates plan effectively for instruction in secondary classes (grades 6-12) to include effective instructional delivery, appropriate content, opportunities for student involvement in the learning process, and assessments for student progress in secondary education.

20.1 Data

Math Education - FEE with InTASC Standards
FEE pulled from Student Teaching Semester:

Element	InTASC Standard	Fall 2015 N=0		Spring 2016 N=2		Fall 2016 N=1		Spring 2017 N=2	
		Mean	Range	Mean	Range	Mean	Range	Mean	Range
Domain 1: Planning and Preparation									
Component 1.1									
1.1.1	4n			3.94	3.88-4.00	3.88	3.88	4.00	4.00
1.1.2	6r			3.88	3.88	4.00	4.00	3.82	3.63-4.00
1.1.3	2g			3.88	3.88	3.75	3.75	3.88	3.88
1.1.4	1b			3.88	3.88	3.88	3.88	3.88	3.75-4.00
Domain 2: The Classroom Environment									
Component 2.1									
2.1.1	3j			3.69	3.63-3.75	3.75	3.75	3.57	3.25-3.88
2.1.2	3d			3.57	3.38-3.75	3.88	3.88	3.82	3.75-3.88
2.1.3	3d			3.75	3.75	3.63	3.63	3.57	3.50-3.63
2.1.4	3d			3.63	3.50-3.75	3.88	3.88	3.69	3.50-3.88
Component 2.2									
2.2.1	3c			3.26	2.88-3.38	3.88	3.88	3.69	3.63-3.75
2.2.2	3f			3.32	3.38-3.88	3.63	3.63	3.75	3.75
2.2.3	3f			3.63	3.25-3.38	4.00	4.00	3.75	3.75
Domain 3: Instruction									
Component 3.1									
3.1.1	8f			3.44	3.13-3.63	3.38	3.38	3.44	3.38-3.50
3.1.2	4c			3.32	3.38-3.50	3.25	3.25	3.44	3.25-3.63
3.1.3	5e			3.38	3.13-3.63	3.50	3.50	3.57	3.38-3.75
Component 3.2									
3.2.1	7a			3.82	3.63-4.00	3.38	3.38	3.38	3.38
3.2.2	3j			3.44	3.38-3.50	4.00	4.00	3.76	3.63-3.88
3.2.3	4f			3.69	3.63-3.75	3.38	3.38	3.32	3.13-3.50
3.2.4	3d			3.38	3.88-4.00	3.88	3.88	3.69	3.63-3.75
Component 3.3									
3.3.1	6d			3.57	3.50-3.63	3.63	3.63	3.44	3.38-3.50
3.3.2	6a			3.75	3.50-4.00	3.88	3.88	3.82	3.63-4.00

3.3.3	6d			3.88	3.88	4.00	4.00	3.94	3.88-4.00
3.3.4	8b			3.51	3.38-3.63	3.75	3.75	3.38	3.25-3.50
Domain 4: Professionalism									
Component 4.1									
4.1.1	9o			3.94	3.88-4.00	3.88	3.88	3.88	3.88
4.1.2	9l			3.94	3.88-4.00	3.88	3.88	3.75	3.75
4.1.3	9o			3.63	3.38-3.88	3.88	3.88	3.69	3.63-3.75

Element	InTASC Standard	Fall 2017 N=1			Spring 2018 N=0		
		Mean	Range	%*	Mean	Range	%*
Domain 1: Planning and Preparation		3.85	3.75-3.88	100%			
Component 1.1		3.85	3.75-3.88	100%			
1.1.1	4n	3.88	3.88	100%			
1.1.2	6r	3.88	3.88	100%			
1.1.3	2g	3.88	3.88	100%			
1.1.4	1b	3.75	3.75	100%			
Domain 2: The Classroom Environment		3.65	3.63-3.88	100%			
Component 2.1		3.69	3.63-3.88	100%			
2.1.1	3j	3.63	3.63	100%			
2.1.2	3d	3.63	3.63	100%			
2.1.3	3d	3.88	3.88	100%			
2.1.4	3d	3.63	3.63	100%			
Component 2.2		3.59	3.38-3.75	100%			
2.2.1	3c	3.38	3.38	100%			
2.2.2	3f	3.63	3.63	100%			
2.2.3	3f	3.75	3.75	100%			
Domain 3: Instruction		3.60	3.25-4.00	100%			
Component 3.1		3.38	3.25-3.50	100%			
3.1.1	8f	3.50	3.50	100%			
3.1.2	4c	3.25	3.25	100%			
3.1.3	5e	3.38	3.38	100%			
Component 3.2		3.63	3.50-3.88	100%			
3.2.1	7a	3.63	3.63	100%			
3.2.2	3j	3.50	3.50	100%			
3.2.3	4f	3.50	3.50	100%			
3.2.4	3d	3.88	3.88	100%			
Component 3.3		3.75	3.36-4.00	100%			
3.3.1	6d	3.75	3.75	100%			

Element	InTASC Standard	Mean	Range	%
3.3.2	6a	3.36	3.36	100%
3.3.3	6d	4.00	4.00	100%
3.3.4	8b	3.88	3.88	100%
Domain 4: Professionalism		3.84	3.75-3.88	100%
Component 4.1		3.84	3.75-3.88	100%
4.1.1	9o	3.88	3.88	100%
4.1.2	9l	3.88	3.88	100%
4.1.3	9o	3.75	3.75	100%

*% Proficient or higher.

Element	InTASC Standard	Fall 2018 N=2		Spring 2019 N=1		Fall 2019 N=		Spring 2020 N=	
		Mean	Range	Mean	Range	Mean	Range	Mean	Range
Domain 1: Planning and Preparation		3.96	3.88-4.00	3.97	3.88-4.00				
Component 1.1		3.96	3.88-4.00	3.97	3.88-4.00				
1.1.1	4n	4.00	4.00	4.00	4.00				
1.1.2	6r	4.00	4.00	4.00	4.00				
1.1.3	2g	3.94	3.88-4.00	3.88	3.88				
1.1.4	1b	3.88	3.88	4.00	4.00				
Domain 2: The Classroom Environment		3.73	3.25-4.00	3.86	3.50-4.00				
Component 2.1		3.80	3.50-4.00	3.91	3.88-4.00				
2.1.1	3j	3.75	3.75	3.88	3.88				
2.1.2	3d	3.88	3.75-4.00	3.88	3.88				
2.1.3	3d	3.69	3.50-3.88	4.00	4.00				
2.1.4	3d	3.88	3.75-4.00	3.88	3.88				
Component 2.2		3.65	3.25-4.00	3.79	3.44-4.00				
2.2.1	3c	3.63	3.50-3.75	4.00	4.00				
2.2.2	3f	3.44	3.25-3.63	3.50	3.50				
2.2.3	3f	3.88	3.75-4.00	3.88	3.88				
Domain 3: Instruction		3.69	3.13-4.00	3.62	3.00-4.00				
Component 3.1		3.48	3.13-3.75	3.34	3.00-3.63				
3.1.1	8f	3.32	3.13-3.50	3.00	3.00				
3.1.2	4c	3.63	3.50-3.75	3.38	3.38				
3.1.3	5e	3.51	3.38-3.63	3.63	3.63				
Component 3.2		3.71	3.13-4.00	3.56	3.25-4.00				
3.2.1	7a	3.44	3.13-3.75	3.25	3.25				
3.2.2	3j	4.00	4.00	4.00	4.00				
3.2.3	4f	3.57	3.38-3.75	3.25	3.25				
3.2.4	3d	3.82	3.75-3.88	3.75	3.75				
Component 3.3		3.83	3.63-4.00	3.88	3.75-4.00				

3.3.1	6d	3.63	3.63	3.88	3.88				
3.3.2	6a	3.94	3.88-4.00	4.00	4.00				
3.3.3	6d	3.94	3.88-4.00	3.88	3.88				
3.3.4	8b	3.82	3.63-4.00	3.75	3.75				
Domain 4: Professionalism		3.84	3.75-3.88	3.92	3.88-4.00				
Component 4.1		3.84	3.75-3.88	3.92	3.88-4.00				
4.1.1	9o	3.82	3.75-2.88	4.00	4.00				
4.1.2	9l	3.88	3.88	3.88	3.88				
4.1.3	9o	3.82	3.75-3.88	3.88	3.88				

Element	InTASC Standard	Fall 2020 N=0			Spring 2021 N=2		
		Mean	Range	% Proficient	Mean	Range	% Proficient
Domain 1: Planning and Preparation					3.61	3.13-4.00	100%
Component 1.1					3.61	3.13-4.00	100%
1.1.1	4n				3.63	3.38-3.88	100%
1.1.2	6r				3.82	3.63-4.00	100%
1.1.3	2g				3.50	3.25-3.75	100%
1.1.4	1b				3.51	3.13-3.88	100%
Domain 2: The Classroom Environment					3.34	2.63-3.88	79%
Component 2.1					3.49	3.13-3.88	100%
2.1.1	3j				3.13	3.13	100%
2.1.2	3d				3.44	3.25-3.63	100%
2.1.3	3d				3.76	3.63-3.88	100%
2.1.4	3d				3.63	3.38-3.88	100%
Component 2.2					3.15	2.63-3.75	50%
2.2.1	3c				3.19	2.63-3.75	50%
2.2.2	3f				3.00	2.75-3.25	50%
2.2.3	3f				3.26	2.88-3.63	50%
Domain 3: Instruction					3.13	2.50-3.75	68%
Component 3.1					2.96	2.50-3.38	50%
3.1.1	8f				2.94	2.50-3.38	50%
3.1.2	4c				2.94	2.75-3.13	50%

Element	InTASC Standard	Mean	Range	% Proficient	Mean	Range	% Proficient
3.1.3	5e				3.01	2.88-3.13	50%
Component 3.2					3.16	2.75-3.63	63%
3.2.1	7a				3.01	2.88-3.13	50%
3.2.2	3j				3.19	2.75-3.63	50%
3.2.3	4f				3.07	2.88-3.25	50%
3.2.4	3d				3.38	3.25-3.50	100%
Component 3.3					3.24	2.75-3.75	88%
3.3.1	6d				3.32	3.25-3.38	100%
3.3.2	6a				3.07	2.75-3.38	50%
3.3.3	6d				3.50	3.25-3.75	100%
3.3.4	8b				3.07	3.00-3.13	100%
Domain 4: Professionalism					3.83	3.25-4.00	100%
Component 4.1					3.83	3.25-4.00	100%
4.1.1	9o				3.63	3.25-4.00	100%
4.1.2	9l				3.88	3.75-4.00	100%
4.1.3	9o				4.00	4.00	100%

Element	InTASC Standard	Fall 2021 N=			Spring 2022 N=		
		Mean	Range	% Proficient	Mean	Range	% Proficient
Domain 1: Planning and Preparation							
Component 1.1							
1.1.1							
1.1.2							
1.1.3							
1.1.4							
Domain 2: The Classroom Environment							
Component 2.1							
2.1.1							
2.1.2							
2.1.3							
2.1.4							
Component 2.2							
2.2.1							

2.2.2							
2.2.3							
Domain 3: Instruction							
Component 3.1							
3.1.1							
3.1.2							
3.1.3							
Component 3.2							
3.2.1							
3.2.2							
3.2.3							
3.2.4							
Component 3.3							
3.3.1							
3.3.2							
3.3.3							
3.3.4							
Domain 4: Professionalism							
Component 4.1							
4.1.1							
4.1.2							
4.1.3							

20.1.1 Analysis of Data and Plan for Continuous Improvement

2016-2017:
This benchmark has been met or exceeded.

2017-2018:
The benchmark was met. The data are based on one candidate. She scored 3.00 or higher on the FEE on each element. Her strengths were in Planning and Preparation and Professionalism. Her lowest score (3.60/4.00) was in the area of instruction.

Plan for continuous improvement:
The Mathematics Education concentration is currently being revised to include a year-long residency in the senior year. This program revision should help to strengthen our candidates preparation in the area of instruction.

2018-2019:
The benchmark was met. The data are based on 3 candidates. They scored 3.00 or higher on the FEE on each element. The lowest score was in the area of instruction.

We would again recommend a benchmark based on the mean score. See comment on the FEE Content assessment.

2019-2020:
Data is not available for this year.

2020-2021:

There were 10 items for which one of the two students assessed this year did not achieve the proficient rating. These items were related to managing student behavior, questioning techniques, and engaging students in learning. Program faculty feel that these weaknesses could have been partially the result of the disastrous events of this year, but remain concerned and are motivated to discuss earlier assessment and intervention in these areas to assure better preparation for student teaching.

21 **Assessment and Benchmark** Outcomes - TCWS

Assessment: Teacher Candidate Work Sample.
The scoring scale for the Teacher Candidate Work Sample is: 1- Ineffective; 2- Effective: Emerging; 3- Effective: Proficient; 4- Highly Effective.

Benchmark: 80% of candidates will score a 3.50 or above on each of the elements on the Teacher Candidate Work Sample Rubric.

Prior to 2018-2019, the benchmark was 3.00.

Outcome Links

Secondary Student Learning Impact [Program]
Secondary mathematics teacher candidates promote academic success and support academic performance for youth within secondary settings (grades 6-12).

21.1 **Data**

Criteria		Fall 2015	Spring 2016	Fall 2016	Spring 2017	Fall 2017	Spring 2018	Fall 2018	Spring 2019
Choice of Assessment	Number	0	2	1	2	1	0		0
	Mean		2.50	4.00	4.00	4.00			
	Range		2.00-4.00	4.00	4.00	4.00			
	% Proficient or Higher		50%	100%	100%	100%			
Pre-assessment	Number								
	Mean		2.00	4.00	3.50	4.00			
	Range		1.00-3.00	4.00	3.00-4.00	4.00			
	% Proficient or Higher		50%	100%	100%	100%			
Post-assessment	Number								
	Mean		2.00	4.00	3.50	4.00			
	Range		2.00	4.00	3.00-4.00	4.00			
	% Proficient or Higher		0%	100%	100%	100%			
Alignment of Lesson Evidence	Number							1	
	Mean		2.00	4.00	3.50	4.00		4.00	
	Range		2.00	4.00	2.00-4.00	4.00		4.00	
	% Proficient		0%	100%	100%	100%		100%	

Category	Metric								
	or Higher								
	Number								
Student Level of Mastery & Evaluation of Factors	Mean		3.00	4.00	3.50	4.00			
	Range		3.00	4.00	3.00-4.00	4.00			
	% Proficient or Higher		100%	100%	100%	100%			
	Number								
Data to Determine Patterns & Gaps	Mean		3.00	4.00	3.50	4.00			
	Range		3.00	4.00	3.00-4.00	4.00			
	% Proficient or Higher		100%	100%	100%	100%			
	Number				1			1	
Response to Interventions	Mean		1.00	4.00	3.50	4.00		4.00	
	Range		1.00	4.00	3.00-4.00	4.00		4.00	
	% Proficient or Higher		0%	100%	100%	100%		100%	
	Number							1	
Content Standards	Mean							4.00	
	Range							4.00	
	% Proficient or Higher							100%	
	Number							1	
Strength: Data to Determine	Mean							4.00	
	Range							4.00	
	% Proficient or Higher							100%	
	Number							1	
Weakness: Data to Determine	Mean							4.00	
	Range							4.00	
	% Proficient or Higher							100%	
	Number							1	
Analysis	Mean							4.00	
	Range							4.00	
	% Proficient or Higher							100%	
	Number							1	
	Mean							4.00	

| Application | Range | | | | | | | | 4.00 | |
| | % Proficient or Higher | | | | | | | | 100% | |

Criteria		Fall 2019	Spring 2020	Fall 2020	Spring 2021	Fall 2021	Spring 2022	Fall 2022	Spring 2023
Choice of Assessment	Number			2					
	Mean			3.50					
	Range			3.00-4.00					
	% Proficient or Higher			100%					
Pre-assessment	Number			2					
	Mean			3.50					
	Range			3.00-4.00					
	% Proficient or Higher			100%					
Post-assessment	Number			2					
	Mean			3.50					
	Range			3.00-4.00					
	% Proficient or Higher			100%					
Alignment of Lesson Evidence	Number			2					
	Mean			2.50					
	Range			2.00-3.00					
	% Proficient or Higher			50%					
Student Level of Mastery & Evaluation of Factors	Number			2					
	Mean			3.50					
	Range			3.00-4.00					
	% Proficient or Higher			100%					
Data to Determine Patterns & Gaps	Number			2					
	Mean			3.50					
	Range			3.00-4.00					
	% Proficient or Higher			100%					

				2					
Response to Interventions	Mean			3.50					
	Range			3.00-4.00					
	% Proficient or Higher			100%					

21.1.1 Analysis of Data and Plan for Continuous Improvement

2016-2017:
Assessment is a weakness. We are revamping the lesson plan template and rubric, and we are rewriting the education assessment course.

2017-2018:
Benchmark was met. Data is based on one candidate. The candidate scored 4.00/4.00 on all assessed items. Benchmark will be raised to 3.50 from 3.00.

2018-2019:
Benchmark was met. Data is based on one candidate from Fall 2018. The candidate scored 4.00/4.00 on all assessed items. Benchmark will be maintained.

2019-2020:
Data not available for this year.

2020-2021:
Proficiency was achieved by both students assessed on all but one indicator for this assessment. That indicator was alignment of lesson evidence. [Note: The data is entered in the Fall 20 column is for Spring 21 graduates]

22 Assessment and Benchmark Math Praxis PLT

Assessment: Mathematics Education candidates must pass the Praxis PLT#5624 before student teaching. The Louisiana qualifying score is 157.

Benchmark: 80% of candidates will pass the Principles of Learning and Teaching Praxis exam on the first attempt.

Outcome Links

Content and Pedagogy [Program]
Secondary mathematics teacher candidates demonstrate knowledge of the content and pedagogical practices relevant to secondary education.

22.1 Data

		Fall 2015	Spring 2016	Fall 2016	Spring 2017	Fall 2017	Spring 2018	Fall 2018	Spring 2019
#5624 overall	Number	0	2	1	2	1	0	2	1
	Mean		175	188	180	178		176	184
	Range		174-176	188	177-182	178		173-179	184
	% Pass 1st attempt		100%	0%	100%	100%		100%	100%
#5624 breakdown:	Number	0	2	1	2	1	0	2	1
Students as Learners	Mean		16.5	15	17	16		14.5	15
	Range		16-17	15	14-19	16		13-16	15
	% correct								

	(21)		79%	71%	81%	76%		69%	75%
Instructional Process	Mean		13	18	17	16		15	14
	Range		12-14	18	14-20	16		14-16	14
	% correct (21)		62%	86%	81%	76%		71%	67%
Assessment	Mean		11.5	13	11	8		12.5	14
	Range		10-13	13	9-13	8		11-14	14
	% correct (13-14)		88%	100%	85%	62%		89%	100%
Professional Development Leadership and Community	Mean		9	12	10	9		9	9
	Range		9	12	7-12	14		8-10	9
	% correct (12-14)		64%	86%	71%	64%		69%	69%
Analysis of Instructional Scenarios	Mean		12.5	12	12	14		12.5	13
	Range		11-14	12	10-13	14		12-13	13
	% correct (16)		78%	75%	75%	88%		78%	81%

		Fall 2019	Spring 2020	Fall 2020	Spring 2021	Fall 2021	Spring 2022	Fall 2022	Spring 2023
#5624 overall	Number	0	2	0	2				
	Mean		179		183				
	Range		174-184		178-187				
	% Pass 1st attempt		100%		100%				
#5624 breakdown:	Number		2		2				
Students as Learners	Mean		15		17				
	Range		13-17		16-18				
	% correct (21)		71%		85%				
Instructional Process	Mean		18		14				
	Range		17-19		12-16				
	% correct (21)		86%		70%				
Assessment	Mean		12		11.5				
	Range		12		11-12				
	% correct (13-14)		86%		82%				
Professional Development	Mean		9		10				
	Range		8-10		9-11				
	% correct		67%		71%				

Leadership and Community	(12-14)									
Analysis of Instructional Scenarios	Mean		12		13					
	Range		9-14		13					
	% correct (16)		72%		81%					

22.1.1 Analysis of Data and Plan for Continuous Improvement

2016-2017:
Although 100% of students passed prior to student teaching, only 66% passed on the first attempt.

Course content will be re-aligned to Praxis content requirements.

2017-2018:
The benchmark was met. The data is based on one candidate. Her score was 178, exceeding the qualifying score of 157. Her strongest area was in Analysis of Instructional Scenarios, her weakest in Assessment.

Plan for continuous improvement:
The Mathematics Education concentration is currently being revised to include a year-long residency in the senior year. In the first semester of residency, the courses EDUC 470S (residency), EDUC 469 (field study), and EDUC 351 (educational measurements) will work hand-in-hand. The field study project will be based on what they are doing in their residency classroom and they will be learning how to perform the tasks needed for the project in EDUC 351. This program revision should help strengthen our candidates preparation in the area of assessment.

2018-2019:
The benchmark was met. The data is based on 3 candidates. Each of their scores exceeded the qualifying score of 157. The strongest area for this group was assessment. Moving forward, we will be interested in the effect of the program changes that were made this past year on candidate performance on the PLT. Candidates will take the PLT at an earlier point in their program. EDUC 203 is a new course in the program which will help to prepare candidates for this assessment.

2019-2020 and 2020-2021:
The benchmark was met. We are pleased that all candidates in this 2 year period passed the PLT on the first attempt. It appears that assessment is one of the strongest areas and professional development leadership is one of the weakest areas for this assessment.

End of report