Mathematical Sciences [BS] [BS-MSCI]

Cycles included in this report:
Jun 1, 2023 to May 31, 2024

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

Reporting Cycle: Jun 1, 2023 to May 31, 2024

1 Is this program offered via Distance Learning?

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

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.

2021-2022:
The schedule has been changed to better suit student needs.
2022-2023:
Starting in the fall of 2023 the two courses Math 170 and Math 175 will be replaced by one course with the new name Math 177.
One of the reasons for this change is to better prepare Math majors and other students for Math 190, first semester calculus. The sequence of topics in Math 177 is designed to better achieve this objective of better preparation for Math 190.

2023-2024:

Stats 231 replaces the free math elective in the degree program. This will ensure that our majors have more options later in their program in the upper division classes.

4 Program Highlights from the Reporting Year

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.

2021-2022:
One of the undergraduate teams placed 4th in the MAA Undergraduate Team Competition at the MAA Section meeting in Natchitoches in March. Kaitlyn Owen was accepted into the Masters program at ULL. Shrijan Dakal and Alex Baur were accepted in the Master's program here at McNeese.
2022-2023:
One of our majors, Ngoc Bui, won 2nd place in the annual Integration Bee, held on March 2, 2023 on the campus of the University of Mississippi. This competition is held in conjunction with the annual section meeting of the Louisiana-Mississippi Section of the Mathematical Association of America. There were some 50 undergraduate competitors from many of the universities in Louisiana and Mississippi.

2023-2024:
Dylan Coats, one our former majors, was featured in the *Lake Charles American Press* in January of 2024. The title of the story was "Dylan Coats experiences consistent joy in the classroom." Dylan is a high school teacher at Iowa High School.

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.

Outcome Links

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

7.1 Data

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
Fall 2021	2/3	67%	Yes
Spring 2022	3/5	60%	Yes
Fall 2022	2/2	100%	Yes
Spring 2023	1/2	50%	No
Fall 2023	—	—	—
Spring 2024	0/1	0%	No

Outcome Links

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

7.1.1 Analysis of Data and Plan for Continuous Improvement

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.

2021-2022:
Going back to in-person classes has helped us achieve our benchmark.

2022-2023:
By replacing the prerequisite of Math 170/Math 175 with Math 177 we hope to achieve better results.

2023-2024:
There is only 1 data point this time.

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.

Outcome Links

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

8.1 Data

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
2021-2022	4/6	67%	No
2022-2023	4/6	67%	No
2023-2024	6/9	67%	No

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

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.

2021-2022:
All of the students demonstrated knowledge and ability to apply the Mean Value Theorem.

2022-2023:
The students who did not meet the benchmark missed a lot of class and had some nonacademic issues. Faculty will discuss individual cases and work to help these students to be more successful.

2023-2024:
Students were proficient in applications of the Binomial Theorem. Students were less proficient in the application of the Intermediate Value Theorem.
More emphasis will be given to the latter theorem.

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.

Outcome Links

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

9.1 Data

Academic Year	Majors achieving 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
2021-2022	4/6	67%	No
2022-2023	5/7	71%	Yes
2023-2024	7/12	58.3%	No

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

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.

2021-2022:
Most students demonstrated ability to verify that two groups are isomorphic. Some students struggled to construct proofs, since the previous two years were difficult academically.

2022-2023:
We will continue to emphasize student proof presentations to their peers. We are very pleased with the results so far. These presentations provide a opportunity for a discussion of what constitutes a proof in modern algebra and more generally in mathematics.

2023-2024:
Abstract algebra is challenging for most of our students. A number of the students this year who did not meet the benchmark have required additional support from faculty earlier in their program. Because of this support, we have been able to retain several of these students in the program. In fact, two of the students are graduating this 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.

Outcome Links

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

10.1 Data

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
2021-2022	4/4	100%	Yes
2022-2023	4/4	100%	Yes
2023-2024	2/3	67%	No

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

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.

2021-2022:
Program faculty are pleased that the benchmark was met.

2022-2023:
Study of fundamental distributions has been successful. Emphasis on this study will continue.

2023-2024:
Since there were only three students involved, and just one did not meet the benchmark, faculty will wait and see if the the trend continues.

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
2021-2022	4	94.86%	94.31%	96.42%	Yes
2022-2023	—	—	—	—	—
2023-2024	7	78.82%	86.93%	90.86%	No

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

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.

2021-2022:
Presentations were back to in-person presentations. This provided students with a better experience presenting to a live audience.

2022-2023:
Our Math Education majors are not required to do a capstone project. They are required to do student teaching. Results and plans concerning their experience in student teaching appear in the latter part of this document.

2023-2024: Some student presenters failed to provide references, while others had difficulty answering audience questions. This in part accounts for the lower scores. Faculty plan to warn students next time that these items are important and must be provided.

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
2021-2022	4/4	100%	Yes
2022-2023	—	—	—
2023-2024	7/7	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

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.

2021-2022:
The rubric has been working out well. It is easy to apply.

2022-2023:
No results for this year.

2023-2024:
Faculty are pleased with this years results.

Outcome Links

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

12 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.

12.1 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	—	—	—
2021-2022	2	5.00	5.00	Yes
2022-2023	4	5.00	5.00	Yes
2023-2024	3	5.00	5.00	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

2019-2020:
No survey data due to pandemic.

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

2021-2022:
Data collection has resumed. We are looking at ways to improve data collection.

2022-2023:
We are very happy with our results.

2023-2024:
We continue to be happy with our results. There is no obvious trend over the last few years.

Outcome Links

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

12.2 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	—	—	—
2021-2022	2	5.00	4.50	Yes
2022-2023	4	4.75	5.00	Yes
2023-2024	3	4.33	4.00	Yes

Outcome Links

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

12.2.1 Analysis of Data and Plan for Continuous Improvement

2019-2020:
No survey data due to pandemic.

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

2021-2022:
Data collection has resumed. We are looking at ways to improve data collection.

2022-2023:
We are very happy with the results. Informal discussions with recent graduates confirms these survey results.

2023-2024:
We continue to be happy with our results. There is no obvious trend over the last few years.

Outcome Links

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

Comments

Instructor Lyle Hardee (9/16/24, 1:44 PM)

Status changed to **Approved**
There is no average 7c. Please clarify.

Sarah Howard (8/23/24, 9:59 AM)

Status changed to **Not Approved**
What about the downward trend in the average for 7c? Please also provide a plan for continuous improvement.

13 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.

Comments

Instructor Lyle Hardee (9/16/24, 1:45 PM)

Status changed to **Approved**
Table headers updated to reflect 31 and 32.

Sarah Howard (8/23/24, 10:05 AM)

Status changed to **Not Approved**
The benchmark states the survey items are 31 and 32; however, the 13.1 Data table shows the average of 32 and 33. Please clarify.

13.1 Data

Academic Year	Average 31	Average 32	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
2021-2022	4.50	4.50	Yes
2022-2023	4.50	5.0	Yes
2023-2024	4.67	4.0	Yes

Outcome Links

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

13.1.1 Analysis of Data and Plan for Continuous Improvement

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.

2021-2022:
We had 4 of the 5 exit surveys returned to us. We are happy to have a representative amount of data.

2022-2023:
Only two surveys, both from math education majors. We are very pleased with the results.

2023-2024:
We are happy with this year's results. Data shows that we continue to meet the benchmark.

Outcome Links

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

Comments

Sarah Howard (8/23/24, 10:08 AM)

Status changed to **Not Approved**
IRE requests that you analyze the data and provide a plan for continuous improvement in the field above.

14 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.

14.1 Data

Academic Year	# of presentations	Benchmark met?
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	—	—
2021-2022	—	—
2022-2023	Mia Escareno directed a math ed session for the conference "Unlock Education" on February 2, 2023	Yes
2023-2024	—	—

14.1.1 Analysis of Data and Plan for Continuous Improvement

2019-2020:
No undergraduate presentations this year.

2020-2021:
No undergraduate presentations this year.

2021-2022:
No undergraduate presentations this year.

2022-2023:
We are very pleased Mia was able to contribute to this math education conference. We will encourage other such participation of other math ed students in addition to encouraging non math ed students to present at local conferences, in particular the Louisiana Academy of Sciences conference and the section meeting of the Mathematical Association of America.

2023-2024:
No undergraduate presentations this year.

Outcome Links

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

15 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.

15.1 Data

Academic Year	# officially enrolled with an EDUC 200 packet	# of completers in fall semester	# of completers in spring semester	Total # of completers
2018-2019	10	2	1	3
2019-2020	—	0	2	2
2020-2021	7	0	2	2
2021-2022	—	0	1	1
2022-2023	—	—	—	—
2023-2024	7	1	1	2

15.1.1 Analysis of Data and Plan for Continuous Improvement

2019-2020:
We had two 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 seven. 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 2021 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.

2021-2022:
The number of completers dropped from two in each of the last two years down to one completer in 2021-2022.

Official program enrollment numbers were not posted due to the change in EDUC 200 admission resulting in a change in the reporting process.

The Burton College of Education and particularly the Department of Education Professions has made intentional efforts to recruit candidates into teacher-education programs and has focused particular attention on those from diverse backgrounds and within high needs areas. In addition to traditional attendance at parish career fairs and expos, the following are part of the McNeese Department of Education Professions (EDPR) Recruitment and Retention Plan: Unlock Education, Call Me MISTER, Educators Rising, and minors.

Although the efforts are strong and we are committed to recruiting candidates from diverse backgrounds, results of these efforts are not immediate as these students are Juniors or Seniors in high school and the data reported in the Performance Profile for education provider programs is on completers. We will track the data for program admission to monitor new students and make adjustments as needed to attract a diverse group of candidates interested in the field of education.

2023-2024: The number of candidates enrolled in Mathematics Education has remained consistent. The Math department and EDPR have worked together on recruitment through EPAC and have created a joint effort in recruiting for the program including Pre-Educator Pathway events and opportunities to work with middle school students. Data for matriculation of candidates from EDUC 110 to EDUC 200 will be tracked to better determine resources and support for candidates to progress through the program.

15.2 Data

Completer Matriculation Rates:

Cohort Academic Year	Accepted into program	1-2 Years to Grad	3 Years to Grad	4 Years to Grad	5 Years to Grad	Dropped from University	State Completer	Earned Different Degree	Still Enrolled
2023-2024	0								0

15.2.1 Analysis of Data and Plan for Continuous Improvement

2023-2024: No new candidates were admitted into the Mathematics Education program in the 23-24 AY. However, reviewing past data indicates that the matriculation of candidates to completion rate is low. EDPR monitors at-risk candidates and student progress and reports to both the department and within Navigate. Candidates will be tracked from EDUC 110 to EDUC 200 to gain a better understanding of resources and support candidates need early on in the program. EDPR has also purchased credits for 240 tutoring to share with students to assist with the progression of coursework to completion with the intent of increasing retention and graduation rates.

16 Assessment and Benchmark PRAXIS II Content

Assessment: Praxis Content Exam (5014/5018/5001)
Louisiana Teacher General Competency B: The teacher candidate demonstrates mastery of the content knowledge and skills and content pedagogy needed to teach the current academic standards as defined in BESE policy.
InTASC standards included: 4 ACEI Standard 2.0 Element 2.1, 2.2, 2.3, 2.4
Knowledge:
Content Knowledge: InTASC Standard 4 - The candidate applies the central concepts, tools of inquiry, and structures of the discipline(s) he or she teaches.
Candidate will pass their Praxis content area exam before entering their student teaching/intern semester.
The content exams required for elementary education candidates were cited for the Association for Childhood Education International (ACEI) Elementary Education Standard 2: Curriculum Standards. Items on each of the above Praxis exams (5014/5018/5001) require candidates to demonstrate fundamental knowledge in the core subject areas required for teaching elementary students. The following elements of Standard 2 are specifically addressed:

Candidates are required to demonstrate knowledge, understanding, and application of Reading /Language Arts skills on the Praxis content exam (5014/5018/5002). Candidates demonstrate an understanding of reading foundational skills including phonological awareness and the role of phonics and word analysis in literacy development, as well as analyzing literature and informational texts. Candidates are also required to demonstrate writing, speaking, and listening proficiencies through identifying and evaluating various concepts and practices. Assessment of the candidates' performance is aligned to Element 2.1. Reading, Writing, and Oral Language.
Candidates are required to demonstrate knowledge, understanding, and use of fundamental concepts in earth science, life science, and physical science on the Praxis content exam (5014 /5018/5005). In addition, candidates must understand the importance and use of inquiry, research and resources, and the unifying processes of science. Assessment of candidates' performance is aligned to Element 2.2. Science.

Candidates are required to demonstrate problem solving and reasoning with mathematical skills on the Praxis content exam (5014/5018/5003). Candidates must know, understand, and demonstrate proficiency in the application of numbers and operations, algebraic thinking, geometry and measurement, data analysis, statistics, and probability. Assessment of candidates' performance is aligned to Element 2.3. Mathematics.

Candidates are required to demonstrate knowledge and understanding of Social Studies concepts on the Praxis content exam (5014/5018/5004). Candidates must interrelate topics from United State history, government, citizenship, geography, anthropology, sociology, world history, and economics to support informed decision making by citizens in modern society. Assessment of candidates' performance is aligned to Element 2.4. Social Studies.
CAEP Standard 1

Benchmark: A minimum of 80% of completer cohorts will have passed the Praxis Content 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.

16.1 Data

Term	Test #	Passing Score Required	n	EPP Range of Passing Scores Only	EPP Cycle Mean	2022-2023 National Median	EPP Mean National Median	EPP Pass First Attempt	
								#	%
Spring 2023	5165	159	1	171	171	167	y	1	100%

2023-2024:

Term	Test #	Passing Score Required	n	EPP Range of Passing Scores Only	EPP Cycle Mean	2022-2023 National Median	EPP Mean National Median	EPP Pass First Attempt	
								#	%
Fall	5165	159	1	168	168	167	y	1	100%
Spring	5165	159	1	175	175	167	y	1	100%

16.1.1 Analysis of Data and Plan for Continuous Improvement

2023-2024: 100% of completers (n=2) within the 23-24 AY passed the Praxis Content exam on the first attempt and all candidates hovered around the national median score. As part of an EPAC initiative, Math faculty have identified coverage of Praxis content topics within the course sequences and will now delve deeper into the sub-categories to determine specific content areas that may need more focus. Meetings with the Math department and EDPR about course sequencing have also led to changes to assist candidates in completing the necessary coursework prior to sitting for the Content exam.

17 Assessment and Benchmark Praxis Principles of Learning and Teaching Exam

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.

17.1 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	0	1	1	1
	Mean		179		183		184	172	179
	Range		174-184		178-187		184	172	179
	% Pass 1st attempt		100%		100%		100%	100%	100%
#5624 breakdown:	Number		2		2		1	1	1
Students as Learners	Mean		15		17		17	14	17
	Range		13-17		16-18		17		
	% correct (20-21)		71%		85%		85%	67%	81%
Instructional Process	Mean		18		14		15	12	17
	Range		17-19		12-16		15		
	% correct (21)		86%		70%		71%	57%	81%
Assessment	Mean		12		11.5		13	13	13
	Range		12		11-12		13		
	% correct (13-14)		86%		82%		93%	100%	93%
Professional Development Leadership and Community	Mean		9		10		13	9	12
	Range		8-10		9-11		13		
	% correct (12-14)		67%		71%		93%	75%	86%
Analysis of Instructional Scenarios	Mean		12		13		12	10	9
	Range		9-14		13		12		
	% correct (16)		72%		81%		75%	63%	56%

		Fall 2023	Spring 2024	Fall 2024	Spring 2025	Fall 2025	Spring 2026	Fall 2026	Spring 2027
#5624 overall	Number	1	1						
	Mean	183	177						
	Range	183	177						
	% Pass 1st attempt	100%	100%						
#5624 breakdown:	Number	100%	100%						
Students as Learners	Mean	16	16						
	Range	16	16						
	% correct (20-21)	76.19%	76.19%						
Instructional Process	Mean	17	14						
	Range	17	14						
	% correct (21)	80.95%	66.66%						
Assessment	Mean	12	12						
	Range	12	12						
	% correct (13-14)	85.71%	85.71%						
Professional Development Leadership and Community	Mean	12	11						
	Range	12	11						
	% correct (12-14)	92.30%	84.61%						
Analysis of Instructional Scenarios	Mean	12	11						
	Range	12	11						
	% correct (16)	75%	68.75%						

17.1.1 Analysis of Data and Plan for Continuous Improvement

2019-2020 and 2020-2021:
The benchmark was met. We are pleased that all candidates in this two 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.

2021-2022:
The benchmark was met. The candidate scored 71% or above in all areas of the exam and achieved a passing score on the first attempt. Due to the small sample size, a review of all Secondary PLT data will be done to determine any program changes and preparation in coursework needed.

2022-2023:
2022-2023 completers passed the PLT exam on the first attempt, and 50% scored above the National Median score of 176. Education Professions faculty reviewed and revised coursework to ensure coverage of the PLT topics to better prepare candidates for the exam. Candidates are also provided free access to 240 tutoring beginning in EDUC 200.

2023-2024:
2023-2024 completers (n=2) passed the PLT exam on the first attempt, and scored above (188, 177) the National Median score of 176. Education Professions faculty reviewed and revised coursework to ensure coverage of the PLT topics to better prepare candidates for the exam. Candidates are also provided free access to 240 tutoring beginning in EDUC 200.

18 Assessment and Benchmark The Learner and Learning

Benchmark: A minimum of 80% of candidates will meet benchmark (3.00) when applying critical concepts and principles of learner development (InTASC 1), learning differences (InTASC 2), and creating safe and supportive learning environments (InTASC 3) in order to work effectively with diverse P-12 students and their families.

18.1 Data

	Semester/Year	n	Met
InTASC Standard 1	Fall 2023	1	100%
	Spring 2024	1	100%
InTASC Standard 2	Fall 2023	1	100%
	Spring 2024	1	100%
InTASC Standard 3	Fall 2023	1	94.74%
	Spring 2024	1	96.30%
The Learner and Learning	Fall 2023	1	96.15%
	Spring 2024	1	96.87%

18.1.1 Analysis of Data and Plan for Continuous Improvement

2023-2024: Completers met benchmark (F23: 96%, S24: 97%) on rubric elements aligned to The Learner and Learning assessed in Residency I and Residency II semesters combined standards (InTASC 1, 2, and 3). Completers also met benchmark within each of the three individual standards 100% (InTASC 1; F23, S24), 100% (InTASC 2; F23, S24), and 95% (F23) and 96% (S24) for (InTASC 3). Opportunities to address learning differences and creating safe and supportive learning environments are spread throughout the program assessments including lesson planning, the Teaching Cycle, and observations. Faculty will provide quality academic feedback on candidate refinement areas to continue to strengthen candidate performance. Additionally, candidates are participating in 240 Tutoring work for the PLT in the Curriculum and Planning courses as a mid-term grade beginning in fall 2024.

19 Assessment and Benchmark Content

Assessment: Content

Benchmark: Candidates will meet benchmark (3.00) a minimum of 80% of the time when assessed on central concepts of their content area (InTASC 4) and apply the content in developing equitable and inclusive learning experiences (InTASC 5) for diverse P-12 students.

19.1 Data

	Semester/Year	n	Met
InTASC Standard 4	Fall 2023	1	100%
	Spring 2024	1	100%
InTASC Standard 5	Fall 2023	1	100%
	Spring 2024	1	72.73%
Content	Fall 2023	1	100%
	Spring 2024	1	82.53%

19.1.1 Analysis of Data and Plan for Continuous Improvement

2023-2024:
Completers in the 2023-2024 academic year met benchmark on the rubric elements aligned to Content assessed in Residency I and Residency II semesters (100%, 82.5%). EDPR faculty have met with Mathematics education faculty to discuss course progression and align Praxis content topics to coursework. Additionally, candidates will be assessed with the Domain 5 content specific rubric for all observations within the program. This will allow for the candidate to be provided specific feedback on the knowledge and application of content within the classroom lessons.

20 Assessment and Benchmark Instructional Practice

Benchmark: Candidates will meet or exceed benchmark on a minimum of 80% of the items measuring assessment (InTASC 6), planning for instruction (InTASC 7), and utilizing a variety of instructions strategies (InTASC 8) to provide equitable and inclusive learning experiences for diverse P-12 students.

20.1 Data

	Semester/Year	n	Met
InTASC Standard 6	Fall 2023	1	62.50%
	Spring 2024	1	100%
InTASC Standard 7	Fall 2023	1	100%
	Spring 2024	1	100%
InTASC Standard 8	Fall 2023	1	88.89%
	Spring 2024	1	66.67%
Instructional Practice	Fall 2023	1	74.07%
	Spring 2024	1	80%

20.1.1 Analysis of Data and Plan for Continuous Improvement

2023-2024:
Data indicates that candidates in Fall 2023 did not meet benchmark for instructional practice (74.1%) while the Spring 2024 candidate was at benchmark (80%).
The area for refinement indicated in the data includes elements aligned to InTASC 8, with benchmark being met 78% (89%, 67%) of the time. Feedback from candidates indicated they were experiencing difficulties in completing full multiple teaching cycles within the program. In Summer 2023, the faculty met and determined the breakout of the Teaching Cycle among coursework to better prepare candidates to complete these tasks. By sectioning out the cycle first, candidates will be able to grasp concepts as parts to build into the whole. The sections of the Teaching Cycle have been portioned into methods courses for preparation of the Residency I Performance Portfolio.

21 Assessment and Benchmark Professional Responsibility

Benchmark: Candidates will meet or exceed benchmark on a minimum of 80% of the items measuring professional learning including to act ethically (InTASC 9), taking responsibility for student learning, and collaborating with others (InTASC 10) to work effectively with diverse P-12 students and their families.

21.1 Data

	Semester/Year	n	Met
InTASC Standard 9	Fall 2023	1	85.71%
	Spring 2024	1	100%
InTASC Standard 10	Fall 2023	1	85.71%
	Spring 2024	1	75%
Professional Responsibility	Fall 2023	1	85.71%
	Spring 2024	1	91.66%

21.1.1 Analysis of Data and Plan for Continuous Improvement

2023-2024:
Data from the 2023-2024 academic year indicates that completers (n=2) met benchmark on 89% (86%, 92%) of the elements aligned to Professional Responsibility on the assessments within Residency I and Residency II. The observation assessment used for evaluations will be changing from the Danielson Framework for Teaching to the Louisiana Aspiring Educators Rubric (LAER) beginning in Fall 2025. Therefore, as this new assessment is implemented, a backward design approach will be used to specifically address InTASC Standards 9 and 10 within more program coursework as practice to proficiency when in Residency.