Biological Science [BIOS]

Cycles included in this report:
Jun 1, 2017 to May 31, 2018

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Program Name: Biological Science [BIOS]

Reporting Cycle: Jun 1, 2017 to May 31, 2018

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

2016-2017:
Many of the assessment points are tied to a genetics course, and its professor was unable to collect the information. There is a new genetics professor this year that will be able to resume data collection.

2017-2018:
Many of the assessment points were tied to a genetics course. Data collection has resumed. Results from these assessments are incorporated into the report.

4 Program Highlights from the Reporting Year

2016-2017:
Frasch Hall reopened, giving access to our classrooms and offices.

2017-2018:
Frasch Annex reopened, but as of the end of the reporting period contractual work was still underway.

5 Program Mission

The purpose of the B.S. in Biological Science is to provide students with the knowledge and skills required for advanced study in graduate or professional schools or to teach biology at the middle or high school level.

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 BIOL 315 Embedded Questions

Assessment: BIOL 315 Embedded Questions.

Benchmark: 75% of all graduates will provide 'satisfactory answers' on embedded problem-solving questions which require the use of critical thinking skills in Genetics (BIOL 315).

Prior to 2017-2018, the benchmark was 75% of graduates will provide 'at least sufficient answers'.

Outcome Links

Critical Thinking [Program]
Graduates apply critical thinking to investigate biological questions.

7.1 Data [Approved]

Academic Year	Graduates who provided 'satisfactory answers'	
	#	%

2016-2017	-	100%
2017-2018	-	85%

Outcome Links

Critical Thinking [Program]
Graduates apply critical thinking to investigate biological questions.

7.1.1 Analysis of Data and Plan for Continuous Improvement

2016-2017:
Data was not available for BIOL 315 prior to 2016-2017 because the data was not reported by previous genetics professors who are no longer employed with the University. The benchmark was set to 75% of all graduates will provide 'at least sufficient answers' on embedded problem-solving questions which require the use of critical thinking skills in Genetics (BIOL 315). This was achieved and this assessment will continue to be used.

2017-2018:
This benchmark was met. However, the percent of graduates providing satisfactory answers decreased from last year. Some of the embedded questions will be reviewed.

8 Assessment and Benchmark BIOL 339 Embedded Problem Solving Questions

Assessment: BIOL 339 Embedded Problem Solving Questions.

Benchmark: 80% of all graduates will provide 'satisfactory answers' on embedded problem-solving questions which require the use of critical thinking skills in Evolution (BIOL 339).

Prior to 2017-2018, the benchmark was 80% of graduates will provide 'at least sufficient answers'. Prior to 2016-2017, the benchmark was 75% of all gradutes should provide 'at least sufficient answers'.

Course Links

BIOL339 [Evolution (Lec. 3, Cr. 3)]

Outcome Links

Critical Thinking [Program]
Graduates apply critical thinking to investigate biological questions.

8.1 Data

Academic Year	Graduates who provided 'satisfactory answers'	
	#	%
2013-2014	-	79%
2014-2015	-	78%
2015-2016	-	81%
2016-2017	-	62%
2017-2018	-	63%

Course Links

BIOL339 [Evolution (Lec. 3, Cr. 3)]

Outcome Links

Critical Thinking [Program]
Graduates apply critical thinking to investigate biological questions.

8.1.1 Analysis of Data and Plan for Continuous Improvement

2015-2016:
Graduates have exceeded the benchmark of 75% for three consecutive years, so we will increase the benchmark to 80%.

2016-2017:
The benchmark was not met in the years 2016-2017, and so will continue to be monitored. Practice questions may be instituted to better familiarize students with answering this type of question. This assessment will continue to be used.

2017-2018:
This benchmark was not met, although there was a slight increase from the previous year. Practice questions will be considered to better familiarize students with answering this type of question. This assessment will continue to be used.

Course Links

BIOL339 [Evolution (Lec. 3, Cr. 3)]

Outcome Links

Critical Thinking [Program]
Graduates apply critical thinking to investigate biological questions.

9 Assessment and Benchmark BIOL 339 and 410 Embedded Questions

Assessment: BIOL 339 and 410 Embedded Questions.

Benchmark: At least 85% of the graduates make 'correct' conclusions based on empirical data on embedded exam questions presenting data and requiring analysis and conclusion in BIOL 339 and BIOL 410.

Prior to 2017-2018, the benchmark was at least 85% of graduates make 'sound' conclusions.

Course Links

BIOL339 [Evolution (Lec. 3, Cr. 3)]

BIOL410 [General Ecology (Lec. 3, Lab. 2, Cr. 4)]

Outcome Links

Analyzing Empirical Data [Program]
Students will demonstrate proficiency in making sound conclusions based on analyzing empirical data.

9.1 Data

Academic Year	Graduates who made 'correct' conclusions	
	#	%
2013-2014	-	83%
2014-2015	-	82%
2015-2016	-	91%
2016-2017	-	88%
2017-2018	-	94%

Academic Year	Graduates who made 'correct' conclusions			
	BIOL 339		BIOL 410	
	#	%	#	%
2018-2019				

Course Links

BIOL339 [Evolution (Lec. 3, Cr. 3)]

BIOL410 [General Ecology (Lec. 3, Lab. 2, Cr. 4)]

Outcome Links

Analyzing Empirical Data [Program]
Students will demonstrate proficiency in making sound conclusions based on analyzing empirical data.

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

2015-2016:
This was the first year the benchmark was met.

2016-2017:
Graduates met the benchmark. Department will continue to use this assessment.

2017-2018:
This benchmark was met. This assessment percentage was the highest over a five-year period. Due to initial fluctuations in percentages, this assessment will continue to be used.

Course Links

BIOL339 [Evolution (Lec. 3, Cr. 3)]

BIOL410 [General Ecology (Lec. 3, Lab. 2, Cr. 4)]

Outcome Links

Analyzing Empirical Data [Program]
Students will demonstrate proficiency in making sound conclusions based on analyzing empirical data.

10 Assessment and Benchmark BIOL 410 Embedded Questions

Assessment: BIOL 410 Embedded Questions.

Benchmark: 75% of all graduates will provide 'satisfactory answers' on embedded problem-solving questions which require the use of critical thinking skills in Ecology (BIOL 410).

Prior to 2017-2018, the benchmark was that 75% of graduates will provide 'at least sufficient answers'.

Course Links

BIOL410 [General Ecology (Lec. 3, Lab. 2, Cr. 4)]

Outcome Links

Critical Thinking [Program]
Graduates apply critical thinking to investigate biological questions.

10.1 Data

Academic Year	Graduates who provided 'satisfactory answers'	
	#	%
2013-2014	-	84%
2014-2015	-	77%
2015-2016	-	67%
2016-2017	-	75%
2017-2018	-	81%

Course Links

BIOL410 [General Ecology (Lec. 3, Lab. 2, Cr. 4)]

Outcome Links

Critical Thinking [Program]
Graduates apply critical thinking to investigate biological questions.

10.1.1 Analysis of Data and Plan for Continuous Improvement

2015-2016:
This Benchmark was not met. Practice questions will be instituted to better familiarize students with answering this type of question. This assessment will continue to be used.

2016-2017:
This benchmark was met. This assessment will continue to be used.

2017-2018:
This benchmark was met. This assessment will continue to be used since the 2015-2016 percentage was below the benchmark and 2016-2017 percentage was just at the benchmark.

Course Links

BIOL410 [General Ecology (Lec. 3, Lab. 2, Cr. 4)]

Outcome Links

Critical Thinking [Program]
Graduates apply critical thinking to investigate biological questions.

11 Assessment and Benchmark BIOL 404 Sound Conclusions

Assessment: BIOL 404 Sound Conclusions.

Benchmark: At least 85% of the graduating biological science seniors who enroll in BIOL 404 submit a research paper and/or present a poster or oral presentation at a professional meeting in which 'correct' conclusions were made after analyzing empirical data.

Prior to 2017-2018, the benchmark was at least 85% of the graduating biological science seniors who enroll in BIOL 404 submit a research paper and/or present a poster or oral presentation at a professional meeting in which 'sound' conclusions were made after analyzing empirical data.

Course Links

BIOL404 [Undergraduate Research (Lab. 9, Cr. 3)]

Outcome Links

Analyzing Empirical Data [Program]
Students will demonstrate proficiency in making sound conclusions based on analyzing empirical data.

11.1 Data

Academic Year	Seniors who provided 'sound conclusions'	
	#	%
2013-2014	-	100%
2014-2015	-	100%
2015-2016	-	100%
2016-2017	-	100%
2017-2018	-	100%

Course Links

BIOL404 [Undergraduate Research (Lab. 9, Cr. 3)]

Outcome Links

Analyzing Empirical Data [Program]
Students will demonstrate proficiency in making sound conclusions based on analyzing empirical data.

11.1.1 Analysis of Data and Plan for Continuous Improvement

2015-2016:
This assessment will continue to be used as a way to monitor our undergraduate research students.

2016-2017:
This benchmark was met. This assessment will continue to be used and more students will be encouraged to enroll in research courses.

2017-2018:
This benchmark was met. This assessment will continue to be used and more students will be encouraged to enroll in research courses, especially with the projected opening of Frasch Annex and research labs.

Course Links

BIOL404 [Undergraduate Research (Lab. 9, Cr. 3)]

Outcome Links

Analyzing Empirical Data [Program]
Students will demonstrate proficiency in making sound conclusions based on analyzing empirical data.

12 Assessment and Benchmark BIOL 481 Senior Seminar

Assessment: BIOL 481 Senior Seminar.

Benchmark 1: At least 85% of the students will achieve a grade of 70% or higher on the writing rubric.

Benchmark 2: At least 85% of the students will earn a grade of 70% or higher on the Biology Seminar rubric used by all biology faculty members who attend the students' seminar presentations.

Course Links

BIOL481 [Biology Seminar (Lec. 3, Cr. 3)]

Outcome Links

Scientific Communication [Program]
Graduates formulate and express ideas effectively through oral, written, and technological communications in a format expected of professional biologists.

12.1 Data Writing Assessment [Approved]

Academic Year	Students achieving 70%	
	#	%
2013-2014	-	87%
2014-2015	-	85.7%
2015-2016	-	88%
2016-2017	-	86%
2017-2018	-	85%

Course Links

BIOL481 [Biology Seminar (Lec. 3, Cr. 3)]

Outcome Links

Scientific Communication [Program]
Graduates formulate and express ideas effectively through oral, written, and technological communications in a format expected of professional biologists.

12.1.1 Analysis of Data and Plan for Continuous Improvement

2015-2016:
Students continue to do well on this assignment. In upcoming years, this assignment will be graded with the new QEP professional writing rubric, and a new benchmark will be set.

2016-2017:
A new benchmark was set and met. This assessment will continue to be used.

2017-2018:
This benchmark was met. However, there is a slow decline in benchmark percentages since 2015. This assessment will continue to be used and proficiency in writing will be addressed via review.

Course Links

BIOL481 [Biology Seminar (Lec. 3, Cr. 3)]

Outcome Links

Scientific Communication [Program]
Graduates formulate and express ideas effectively through oral, written, and technological communications in a format expected of professional biologists.

12.2 Data Presentation Assessment [Approved]

Academic Year	Students achieving 70%	
	#	%
2013-2014	-	87%
2014-2015	-	85.7%
2015-2016	-	88%
2016-2017	-	94%
2017-2018	-	97%

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

BIOL 481 Presentation Rubric - Jul 2017

Course Links

BIOL481 [Biology Seminar (Lec. 3, Cr. 3)]

Outcome Links

Scientific Communication [Program]
Graduates formulate and express ideas effectively through oral, written, and technological communications in a format expected of professional biologists.

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

2015-2016:
Students continue to do well on this assignment. In upcoming years, this assignment will be graded with the new QEP professional writing rubric, and a new benchmark will be set.

2016-2017:

The new benchmark was set and met. This assessment will continue to be used.

20172018:
This benchmark was met. This assessment will continue to be used pending data from next year.

13 Assessment and Benchmark Enrollment, Completion, Retention, and Recruitment

Assessment: Enrollment, Completion, Retention, and Recruitment.

Benchmark: Department will increase enrollment by 7% each year for the BS Secondary Education concentration.

13.1 Data

Program: BS Secondary Biology

Academic Year	# enrolled in the program	# of program completers
2013-2014	4	2
2014-2015	2	2
2015-2016	0	0
2016-2017	1	1
2017-2018	2	0

13.1.1 Analysis of Data and Plan for Continuous Improvement

2016-2017:
The benchmark was not met. Increase recruitment efforts for this program.

2017-2018:
Analysis of Data: The benchmark was met. After a decline in enrollment from 2013-2014, there was an increase in enrollment from one to two candidates in 2017-2018. This number is official enrollment, which means that the candidates have submitted an EDUC 200 packet.

Plan for Continuous Improvement: The goal for 2018-2019 will be 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.
Secondary education faculty along with biology education faculty, through participation in the Noel Levitz Recruiting Initiative, will contact students who have inquired or applied to McNeese to enroll in education or who are undecided about a major.
Seeing an increase in first time students majoring in biology education will assess the goal. The number of contacts with potential students will be tracked along with successful recruitment numbers.

14 Assessment and Benchmark Field Experience Evaluation Domain 5

Assessment: Field Experience Evaluation Domain 5.

Benchmark: 100% of the candidates will score a 3.00 or above on each element of the Content Standards assessed in Domain 5 of the final Field Experience Evaluation (FEE) rubric administered during the internship/student teaching semester.

14.1 Data

Biology	Fall 2015			Spring 2016			Fall 2016			Spring 2017		
Component	#	Mean	Range	#	Mean	Range	#	Mean	Range	#	Mean	Range
5.1										1	3.38	3.38
5.2										1	3.25	3.25
5.3										1	3.63	3.63
5.4										1	3.75	3.75

5.5										1	3.71	3.71
5.6										1	4	4
5.7										1	4	4
5.8										1	3.88	3.88
5.9												

2017-2018:
There were no completers in 2017-2018.

14.1.1 Analysis of Data and Plan for Continuous Improvement

2016-2017:
This benchmark was met or exceeded.

2017-2018:
Analysis of Data: There were no completers in 2017-2018, therefore there is no new data to analyze.

15 Assessment and Benchmark Lesson Planning

Assessment: Lesson Planning.

Benchmark: 100% of candidates will score 3.00 or above on each element assessed on the Lesson Plan rubric.

Prior to 2017-2018, the benchmark was 80% of candidates.

15.1 Data

Rubric Element	Standard	InTASC Standard		Fall 2015	Spring 2016	Fall 2016	Spring 2017
Essential Questions			Number	0	0	0	1
			Mean				3
			Range				3
			% Proficient or Higher				100%
Content Standards			Number				1
			Mean				4
			Range				4
			% Proficient or Higher				100%
Student Outcomes		4n	Number				1
			Mean				2
			Range				2
			% Proficient or Higher				100%
Technology		5l	Number				1
			Mean				4
			Range				4
			% Proficient or Higher				100%
Educational Materials			Number				1
			Mean				4
			Range				4

			% Proficient or Higher				100%
Procedures		3k	Number				1
			Mean				4
			Range				4
			% Proficient or Higher				100%
Lesson "Hook"		8j	Number				1
			Mean				4
			Range				4
			% Proficient or Higher				100%
Pre-Planned (Seed) Questions		8i	Number				1
			Mean				4
			Range				4
			% Proficient or Higher				100%
Modeled, Guided, Collab, & Ind. Practice		7k	Number				1
			Mean				4
			Range				4
			% Proficient or Higher				100%
Closure			Number				1
			Mean				4
			Range				4
			% Proficient or Higher				100%
Formative/Summative Assessment		6j	Number				1
			Mean				4
			Range				4
			% Proficient or Higher				100%
Relevance & Rationale		2j	Number				1
			Mean				4
			Range				4
			% Proficient or Higher				100%
Exploration, Extension, Supplemental		1e	Number				1
			Mean				4
			Range				4
			% Proficient or Higher				100%
Differentiation		7j	Number				1
			Mean				2
			Range				2
			% Proficient				

			or Higher				100%

2017-2018:
There were no completers in 2017-2018, therefore there is no new data to report.

15.1.1 Analysis of Data and Plan for Continuous Improvement

2016-2017:
The student outcomes and differentiation elements did not meet the benchmark of 3.00. We are revamping the lesson plan template and rubric.

2017-2018:
Analysis of Data: There were no completers in 2017-2018, therefore there is no new data to analyze.

16 Assessment and Benchmark Field Experience Evaluation

Assessment: Field Experience Evaluation, Domains 1-4.

Benchmark: 100% of candidates will achieve a score of 3.00 or better on each element assessed on the FEE.

Prior to 2017-2018, the benchmark was 100% of students will meet or exceed the benchmark of 2.00.

16.1 Data

Biology	InTASC	Fall 2015			Spring 2016			Fall 2016			Spring 2017		
Component	Standard	#	Mean	Range	#	Mean	Range	#	Mean	Range	#	Mean	Range
1.1.1	4n										1	3.79	3.79
1.1.2	6r										1	3.91	3.91
1.1.3	2g										1	3.79	3.79
1.1.4	1b										1	3.79	3.79
2.1.1	3;										1	3.81	3.81
2.1.2	3d										1	3.81	3.81
2.1.3	3d										1	3.81	3.81
2.1.4	3d										1	3.81	3.81
2.2.1	3c										1	3.45	3.45
2.2.2	3f										1	3.33	3.33
2.2.3	3f										1	3.33	3.33
3.1.1	8f										1	3.65	3.65
3.1.2	4c										1	3.65	3.65
3.1.3	5e										1	3.39	3.39
3.2.1	7a										1	3.79	3.79
3.2.2	3j										1	3.66	3.66
3.2.3	4f										1	3.79	3.79
3.2.4	3d										1	3.79	3.79
3.3.1	6d										1	3.66	3.66
3.3.2	6a										1	3.66	3.66
3.3.3	6d										1	3.79	3.79
3.3.4	8b										1	3.54	3.54
4.1.1	9o										1	4	4
4.1.2	9l										1	4	4

4.1.3	9o										1	4	4

2017-2018:
There were no completers in 2017-2018.

16.1.1 Analysis of Data and Plan for Continuous Improvement

2016-2017:
The benchmark was exceeded for all components.

2017-2018:
Analysis of Data: There were no completers in 2017-2018, therefore there is no new data to analyze.

17 Assessment and Benchmark Teacher Candidate Work Sample

Assessment: Teacher Candidate Work Sample.

Benchmark: 100% of candidates will score a 3.00 or better on each element of the Teacher Candidate Work Sample.

Prior to 2017-2018, the benchmark was 80% of students will meet or exceed the benchmark of 3.00.

17.1 Data

Criteria		Fall 2015	Spring 2016	Fall 2016	Spring 2017
Choice of Assessment	Number				1
	Mean				4
	Range				4
	% Proficient or Higher				100%
Pre-assessment	Number				1
	Mean				4
	Range				4
	% Proficient or Higher				100%
Post-assessment	Number				1
	Mean				4
	Range				4
	% Proficient or Higher				100%
Alignment of Lesson Evidence	Number				1
	Mean				4
	Range				4
	% Proficient or Higher				100%
Student Level of Mastery & Evaluation of Factors	Number				1
	Mean				4
	Range				4
	% Proficient or Higher				100%
	Number				1

Data to Determine Patterns & Gaps	Mean				4
	Range				4
	% Proficient or Higher				100%
Response to Interventions	Number				1
	Mean				4
	Range				4
	% Proficient or Higher				100%

2017-2018:
There were no completers in 2017-2018, therefore there is no new data to report.

17.1.1 Analysis of Data and Plan for Continuous Improvement

2016-2017:
The candidate exceeded the benchmark for all areas.

2017-2018:
Analysis of Data: There were no completers in 2017-2018, therefore there is no new data to analyze.

18 Assessment and Benchmark PRAXIS II Principles of Learning and Teaching

Assessment: Praxis Principles of Learning and Teaching Exam.

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

18.1 Data

BIOL 5624:

		Fall 2015	Spring 2016	Fall 2016	Spring 2017
Overall Score Information	Number	0	0	0	1
	Mean				180
	Range				180
	% Pass 1st attempt				100%
	% Pass prior to ST/Intern				100%
Subcomponent:					
Students	Number				1
	Mean				16
	Range				16
Instruction	Number				1
	Mean				16
	Range				16
Assessment	Number				1
	Mean				14
	Range				14
Professional Development	Number				1
	Mean				10

	Range				10
Analysis	Number				1
	Mean				9
	Range				9

2017-2018:
There were no completers in 2017-2018, therefore there is no new data to report.

18.1.1 Analysis of Data and Plan for Continuous Improvement

2016-2017:
The candidate passed on the first attempt. Benchmark was met.

2017-2018:
Analysis of Data: There were no completers in 2017-2018, therefore there is no new data to analyze.

19 Assessment and Benchmark Curriculum Development

Assessment: Curriculum Development.

Benchmark: Program faculty will meet at least two times per year to discuss continuous improvement efforts in curriculum development.

Prior to 2017-2018, the benchmark was program faculty meets three times per academic year to review student progress, curricular offerings, and appropriate professional contacts and opportunities.

19.1 Data

Spring 2015:
- February 20, 2015 - CLASS consulting with CPSB
- May 11, 2015 - DEP Faculty Meeting - Master Plan 10:30-12:30
- May 13, 2015 - Master Plan 10:30-12:00

Fall 2015:
- August 18, 2015 - BCOE Meeting 1:00
- August 19, 2015 - DEP Meeting 9:00-10:00
- October 8, 2015 - Turnitin Plagiarism 3:00-4:00

Spring 2016:
- January 12, 2016 - QEP with Dr. John Gardner 9:30-5:00
- January 13, 2016 - QEP 9:45-12:00
  - DEP Faculty meeting (General Information) 2:00-4:30
- January 29, 2016 - DEP Faculty Meeting (CAEP) 10:00-12:30
- February 17, 2016 - QEP Focus Group 12:30-2:00
  - CAEP Meeting 3:00-4:00
- February 18, 2016 - CPSB - Believe and Prepare
- February 19, 2016 - CPSB - Believe and Prepare
- March 17, 2016 - CAEP Meeting
- March 21, 2016 - CPSB - Believe and Prepare (Presenters)
- April 18, 2016 - CAEP Meeting
- May 16, 2016 - DEP Workshop/SPA
- May 17, 2016 - DEP workshop/SPA
- May 26, 2016 - CAEP Webinar 3:00

2017-2018:
- January 8, 2018 - Overview of Assessment Data
- January 9, 2018 - Advising Workshop
- January 19, 2018 - Geaux Teach- Recruitment
- May, 2018 - EPAC meeting to discuss upcoming program redesigns

19.1.1 Analysis of Data and Plan for Continuous Improvement

2016-2017:
Department of Education Professions is up for CAEP site visit in spring 2017; therefore, faculty have been meeting in preparation.
Program faculty meets at regular intervals throughout the year to discuss advising methods and program implementation.
Program Faculty will continue to collaborate with local districts to strengthen our program and prepare our teacher candidates to fully meet district needs.

2017-2018:
Biology faculty have been working with Education faculty in recruitment efforts and program improvement efforts. Together, they will be working to redesign the program to meet the year-long residency requirements set forth by the state.

Program outcomes

Critical Thinking
Graduates apply critical thinking to investigate biological questions.

Scientific Communication
Graduates formulate and express ideas effectively through oral, written, and technological communications in a format expected of professional biologists.

Analyzing Empirical Data
Students will demonstrate proficiency in making sound conclusions based on analyzing empirical data.

End of report