# 2017-2018 Assessment Cycle COS\_Mathematics BS

# **Mission (due 12/4/17)**

# **University Mission**

The University of Louisiana at Lafayette offers an exceptional education informed by diverse worldviews grounded in tradition, heritage, and culture. We develop leaders and innovators who advance knowledge, cultivate aesthetic sensibility, and improve the human condition.

#### **University Values**

We strive to create a community of leaders and innovators in an environment that fosters a desire to advance and disseminate knowledge. We support the mission of the university by actualizing our core values of equity, integrity, intellectual curiosity, creativity, tradition, transparency, respect, collaboration, pluralism, and sustainability.

## **University Vision**

We strive to be included in the top 25% of our peer institutions by 2020, improving our national and international status and recognition.

#### College / VP and Program / Department Mission

# Mission of College or VP-area

Provide the mission for the College or VP-area in the space provided. If none is available, write "None Available in 2017-2018."

Our mission is to serve our students, the citizens of Louisiana, the nation, and the world, through innovative and stimulating educational experiences and compelling research initiatives that create knowledge, deepen our basic understanding of the world around us, further economic development, and enhance quality of life. In support of our mission, The College of Sciences seeks to:

Develop broad-thinking students into mature, ethical professionals, scientists, and researchers with the necessary creativity, critical thinking, and problem solving skills required to make significant contributions to industry, government, and the academic sector.

Recruit and support top-notch teaching and research faculty engaged in scientific endeavors that are recognized nationally for their relevance and impact.

Enrich scientific research and education through on-campus collaborations, multidisciplinary programs, large-scale multiinstitution initiatives, as well as partnerships with government and industry.

Foster scientific literacy within the University, the citizens of Louisiana, and the nation by providing stimulating courses for our students and by partnering with educators at the K-12 and community college level.

Provide leadership in the translation and application of research into practical solutions that will benefit our local community, the state of Louisiana, our natural environment, industries of the Gulf Coast region, and society as a whole.

The Ray P. Authement College of Sciences will emerge as a preeminent college of sciences in the Southeast and Gulf Coast region of the United States. The College will be recognized nationally for its innovative education, scholarly research activities addressing our nation's grand challenges, and for its diverse student body with exemplary academic achievements, leadership abilities, and global perspectives.

#### **Mission of Program / Department**

Provide the program / department mission in the space provided. The mission statement should concisely define the purpose, functions, and key constituents. If none is available, write "None Available in 2017-2018."

The Department of Mathematics takes as its primary missions the advancement and dissemination of mathematical

thinking and knowledge through research and teaching. This includes the training of graduate students to demonstrate the

ability to produce original research results, and the training of undergraduate majors for a wide variety of career options. It also includes equipping students in client disciplines such as the natural sciences, engineering, education, and business with the mathematical tools necessary for success. A more general mission is to empower all graduates of the University with a level of mathematical literacy and skill which will enable them to better understand and think critically about complex problems and issues which will confront them in our society.

## **Attachment (optional)**

Upload any documents which support the program / department assessment process.

# **Assessment Plan (due 12/4/17)**

Assessment Plan (Goals / Objectives, Assessment Measures and Criteria for Success)

#### **Assessment List**

Goal/Objective	Expression of Mathematical Ideas: Upon completion of the program, a student majoring in mathematics should demonstrate the ability to express nontrivial mathematical ideas in a coherent, comprehensible, and correct manner as evidenced through the presentation of a proof or analysis of an applied problem.(Imported)				
Legends	SLO - Student Learning Outcome/Objective (academic units);				
Standards/Outcomes					
Assessment Measures					
	Assessment Measure	Criterion	Attachments		
	Direct - Writing Exam	A sample of student work from a class assignment, an exam, or a presentation will be evaluated by two or more faculty using a common rubric. The number of samples evaluated for a particular student is limited to two different courses and no more than two items within each course. See attachments for rubric. Samples of student's work will be collected from various junior-level or senior-level courses in which the student is enrolled. As the student enrolls in courses suitable for evaluation, work will be collected and results complied upon the student's graduation. The percentage of graduates who are rated "Excellent" or "Satisfactory" for this SLO will be computed in May of each year. If a student did not demonstrate competency with one sample, the committee may try to obtain another sample to evaluate. Sometimes it is possible to get more than one exercise/problem from the same course. The committee decided to limit the evaluated samples for a particular student to two different courses per outcome and will examine no more than two or three samples within each course. Number of students assessed = All mathematics seniors for 2016-2017. Definition of Success: At least 70% of the graduates in mathematics during the academic year receive ratings of "Excellent" or "Satisfactory".			

Goal/Objective	Upon completion of the program, a student majoring in mathematics should demonstrate understanding of the core concepts of linear algebra, specifically linear independence, vector spaces, linear transformations, and eigenvectors.(Imported)			
Legends	SLO - Student Learning Outcome/Objective (academic units);			
Standards/Outcomes				
Assessment Measures				
	Assessment Measure	Criterion	Attachments	
	Direct - Writing Exam	A sample of student work from a class assignment, an exam, or a presentation will be evaluated by two or more faculty using the appropriate common rubric. See attachments for rubrics. Linear Algebra (MATH 462) is a required course for all mathematics majors. In most cases, the student's final exam will be evaluated. Other assignments or exam from the course may also be used. When the student enrolls in Linear Algebra (Math 462), work will be collected and results complied upon the student's graduation. The percentage of graduates who are rated "Excellent" or "Satisfactory" for this SLO will be computed in May of each year. Samples of student's work will be collected from various junior-level or senior-level courses in which the student is enrolled. As the student enrolls in courses suitable for evaluation, work will be collected and results complied upon the student's graduation. The percentage of graduates who are rated "Excellent" or "Satisfactory" for this SLO will be computed in May of each year. If a student did not demonstrate competency with one sample, the committee may try to obtain another sample to evaluate. Sometimes it is possible to get more than one exercise/problem from the same course. The committee decided to limit the evaluated samples for a particular student to two different courses per outcome and will examine no more than two or three samples within each course.		

Goal/Objective	Upon completion of the program, a student majoring in mathematics should demonstrate th ability to solve challenging problems using calculus in an advanced undergraduate mathematics course.(Imported)	
Legends	SLO - Student Learning Outcome/Objective (academic units);	
Standards/Outcomes		
Assessment Measures		

Assessment Measure	Criterion	Attachments
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#### **Program / Department Assessment Narrative**

The primary purpose of assessment is to use data to inform decisions and improve programs (student learning) and departments (operations); this is an on-going process of defining goals and expectations, collecting results, analyzing data, comparing current and past results and initiatives, and making decisions based on these reflections. In the space below, describe the program's or department's overall plan for improving student learning and/or operations (the "assessment plan"). Consider the following:

- 1) What strategies exist to assess the outcomes?
- 2) What does the program/department expect to achieve with the goals and objectives identified above?
- 3) How might prior or current initiatives (improvements) influence the anticipated outcomes this year?
- 4) What is the plan for using data to improve student learning and/or operations?
- 5) How will data be shared within the Program/Department (and, where appropriate, the College/VP-area)?

#### **Assessment Process**

Currently and historically, the assessment that the Math Department is doing is truly not used in the proper way. The measures that we are using are good, I believe, but they are not used to improve the program or to improve the department. This has to change and will once we can get a committee or Department Head that is invested in assessment. Our objectives and measures are fine but we probably need more. The department really need to figure what type of assessment is possible with our majors and how we can use the data to improve the department. Ever since we started doing assessment, it was just a matter of collecting data that is never used or analyzed. I hope this changes soon when I get help and hopefully we get a new department head. I hope to reach out to the Assessment office for help soon.

# Results & Improvements (due 9/15/18)

Assessment List Findings for the Assessment Measure level for Expression of Mathematical Ideas: Upon completion of the program, a student majoring in mathematics should demonstrate the ability to express nontrivial mathematical ideas in a coherent, comprehensible, and correct manner as evidenced through the presentation of a proof or analysis of an applied problem.(Imported)

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Assessment Measures					
	Assessment Measure	Criterion			
	Direct - Writing Exam	Direct - Writing A sample of student work from a class assignment, an exam, or a			
Assessment Findings	A	Onitonion	S	Attackments	I
	Assessment Measure	Criterion	Summary	Attachments of the Assessments	Improvement Narratives
	Writing Exam	Has the criterion A sample of student work from a class assignment, an exam, or a presentation will be evaluated by two or more faculty using a common rubric. The number of samples evaluated for a particular student is	For the 2017- 2018 academic year, we evaluated the final exams of 25 students who either graduated in Fall 2017 or Spring 2018 with a BS in Mathematics. Out of the 25		- Task Force / Focus Group / Consultation / Meeting: For the upcoming cycle, we will plan a minimum of one Assessment Committee meeting per semester to discuss the

limited to two different courses and no more than two items within each course. See attachments for rubric. Samples of student's work will be collected from various junior-level or senior-level courses in which the student is enrolled. As the student enrolls in courses suitable for evaluation, work will be collected and results complied upon the student's graduation. The percentage of graduates who are rated "Excellent" or "Satisfactory" for this SLO will be computed in May of each year. If a student did not demonstrate competency with one sample, the committee may try to obtain another sample to evaluate. Sometimes it is possible to get more than one exercise/problem from the same course. The committee decided to limit the evaluated samples for a particular student to two different courses per outcome and will examine no more than two or three samples within each course. Number of students assessed = All mathematics seniors for 2016-2017. Definition of

graduating seniors evaluated, 15 out of 25, or 60% scored Excellent or Satisfactory on this outcome. Therefore, the goal was not met. department's progress in succeeding in the stated outcomes. We will score students on the outcomes every semester instead of just once a year.

- Policy / Process / Procedural: Copies of the rubric for this outcome will be provided to faculty and to students in Math 462, Linear Algebra. This course is used to measure a student's success for this outcome. By distributing the rubric, the instructor in the course and the students will know exactly what is to be expected of them in terms of assessment for the department.

Success: At least 70% of the graduates in mathematics during the academic year receive ratings of "Excellent" or "Satisfactory". been met yet? Not met	

Assessment List Findings for the Assessment Measure level for Upon completion of the program, a student majoring in mathematics should demonstrate understanding of the core concepts of linear algebra, specifically linear independence, vector spaces, linear transformations, and eigenvectors.(Imported)

Goal/Objective	Upon completion of the program, a student majoring in mathematics should demonstrate understanding of the core concepts of linear algebra, specifically linear independence, vector spaces, linear transformations, and eigenvectors.(Imported)			
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Assessment Findings				

Assessi Measure		Summary	Attachments of the Assessments	Improvement Narratives
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	rated "Excellent" or		
	"Satisfactory" for this		
	SLO will be		
	computed in May of		
	each year. If a		
	student did not		
	demonstrate		
	competency with		
	one sample, the		
	committee may try		
	to obtain another		
	sample to evaluate.		
	Sometimes it is		
	possible to get more		
	than one		
	exercise/problem		
	from the same		
	course. The		
	committee decided		
	to limit the evaluated		
	samples for a		
	particular student to		
	two different		
	courses per		
	outcome and will		
	examine no more		
	than two or three		
	samples within each		
	course. been met		
	yet?		
	Met		
	_		

Assessment List Findings for the Assessment Measure level for Upon completion of the program, a student majoring in mathematics should demonstrate the ability to solve challenging problems using calculus in an advanced undergraduate mathematics course.(Imported)

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# Assessment Findings

Assessment Measure	Criterion	Summary	Attachments of the Assessments	Improvement Narratives
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committee decided to limit the evaluated samples for a particular student to two different courses per outcome and will examine no more than two or three samples within each course. been met yet?	

# Reflection (Due 9/15/18)

#### Reflection

The primary purpose of assessment is to use data to inform decisions and improve programs and operations; this is an on-going process of defining goals and expectations, collecting results, analyzing data, comparing current and past results and initiatives, and making decisions based on these reflections. Recalling this purpose, respond to the questions below.

#### 1) How were assessment results shared in the program / department?

Please select all that apply. If "other", please use the text box to elaborate. Distributed via email

Presented formally at staff / department / committee meetings

Discussed informally

Other (explain in text box below) (selected)

In the past, we have not shared our assessment results with the general faculty. This is definitely an area we need to improve on. Also for the last few years, we have been meeting our goals, but we have experienced a large growth in majors over the last four years. As a result, it seems on of our goals was not met this cycle. The result will first be discussed further with the Assessment Committee. Then we will discuss the results with the teachers teaching the courses related to the goal that was not met.

## 2) How frequently were assessment results shared?

Frequently (>4 times per cycle)
Periodically (2-4 times per cycle)
Once per cycle
Results were not shared this cycle (selected)

## 3) With whom were assessment results shared?

Please select all that apply.

Department Head (selected)

Dean / Asst. or Assoc. Dean

Departmental assessment committee (selected)

Other faculty / staff

4) Consider the impact of prior applied changes. Specifically, compare current results to previous results to evaluate the impact of a previously reported change. Demonstrate how the use of results improved student learning and/or operations.

There seems to not been any effects based on the prior action plans because some were not carried through. The assessment in the Math Department needs a general overhaul and complete restructuring. With a new department head bringing a fresh perspective and with possible consulting of the Assessment team, the department hopes to make this yearly assessment something we can use to improve the department.

5) Over the past three assessment cycles, what has been the overall impact of "closing the loop"? Provide examples of improvements in student learning, program quality, or department operations that are directly linked to assessment data and follow-up analysis.

We are still experiencing some issues with the quick growth of our department. With the growth of the number of majors, it seems that the quality of our majors may have gone down a bit since one of our goals was not met this cycle.

## **Attachments (optional)**

Upload any documents which support the program / department assessment process.