

Academic Program Assessment Report

Assessment is a term commonly used to encompass the process of gathering and using evidence to guide improvements.

SACSCOC requires that an institution "identifies expected outcomes, assesses the extent to which it achieves these outcomes, and provides evidence of seeking improvement based on analysis of the results".

Be sure to SAVE your progress as you work!

Academic Program

Mathematics, B.S.

Submission Due Date

2024-2025

Assessment Coordinator Name

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Enter Assessment Coordinator Email

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Program Goal

Goal

Goal 1

Program Goals are broad and overarching statements about the skills, knowledge, and dispositions students are expected to gain by the end of their course of study (big picture). They support the Institution's Mission/Goals.

Program Goal

Students will demonstrate a broad base of mathematical knowledge.

Pillar of Success Supported

High-Demand, Market-Driven Programs

Outcomes

Outcome 1

Outcomes are specific, **measurable** statements that reflect the broader goals.

Academic Programs are required to develop **Student Learning Outcomes**, which describe knowledge, skills, and values that students are expected to gain as a result of their educational experiences.

Academic Programs may also develop **Operational Outcomes**, which describe the level of performance of an operational aspect of a program or office (ex. graduation rates, retention, employment data).

Most goals have at least two outcomes measured.

What type of Outcome would you like to add?

Student Learning Outcome

Enter Outcome

Student performance on the MFT exam will be inline with expectations for an institution with our student base.

Timeframe for this Outcome

April 2023

Performance Target for "Met"

At least 50% of graduating seniors score at or above the national median AND no more than 25% of graduating seniors score below the first quartile.

Performance Target for "Partially Met"

Between 30% and 50% of graduating seniors score at or above the national median

Performance Target for "Not Met"

Less than 30% of graduating seniors score below the national median OR more than half of the graduating seniors score before the national first quartile.

Assessment Measure Used

Major Field Test by ETS

Frequency of Assessment

Annually to students in MATH 499

Data Collected for this Timeframe (Results)

students took the MFT in April 2024; 2 of 4 graduating seniors scored above the median! 1 was at the 46th percentile

Score (Met=3, Partially Met=2, Not Met=1)

2

Comments/Narrative

Faculty are in the process of developing an in-house test to replace the MFT. A question bank will be complete in October, and a draft of the test will be finalized in November. This test will allow students some flexibility to select problems covered in the Math elective courses they have completed. The pilot offering of the test will be in MATH 499, Spring 2024.

For this year: The in-house test was given to students in both Fall 2023 and Spring 2024. Performance Standards for this new test are being discussed. The MFT will not be used in this academic year???? Is this true?

Resources Needed to Meet/Sustain Results

none

Explanation of How Resources Will Be Used

Outcome 2

Outcomes are specific, **measurable** statements that reflect the broader goals.

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Academic Programs may also develop **Operational Outcomes**, which describe the level of performance of an operational aspect of a program or office (ex. graduation rates, retention, employment data).

Most goals have at least two outcomes measured.

What type of Outcome would you like to add?

Student Learning Outcome

Enter Outcome

Performance of graduating seniors taking Praxis II exam.

Timeframe for this Outcome

Academic Year 24-25

Performance Target for "Met"

100% or all but one student passes.

Performance Target for "Partially Met"

none

Performance Target for "Not Met"

More than one graduating senior fails.

Assessment Measure Used

PRAXIS 2 Test

Frequency of Assessment

Annually to graduating seniors in the Mathematics Teacher Certification Program

Data Collected for this Timeframe (Results)

3 students took and passed the PRAXIS 2 exam this year.

Score (Met=3, Partially Met=2, Not Met=1)

Comments/Narrative

Our students tend to pass the PRAXIS 2 test on first attempt.

Resources Needed to Meet/Sustain Results

Explanation of How Resources Will Be Used

Goal Summary

Goal Summary/Comments

Mathematics faculty have decided that the MFT is not providing valuable information for program assessment. An in-house test is being developed. It will be piloted in Spring 2024..

Changes Made/Proposed Related to Goal

After the in-house test is developed, a baseline for student performance will be established and then levels for Goal achievement will be set.

Upload Rubrics/Other Files

Goal 2

Program Goals are broad and overarching statements about the skills, knowledge, and dispositions students are expected to gain by the end of their course of study (big picture). They support the

Institution's Mission/Goals.

Program Goal

Students in the Mathematics Secondary Certification program will demonstrate their preparation to teach secondary school level mathematics.

Pillar of Success Supported

High-Demand, Market-Driven Programs

Outcomes

Outcome 1

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Academic Programs may also develop **Operational Outcomes**, which describe the level of performance of an operational aspect of a program or office (ex. graduation rates, retention, employment data).

Most goals have at least two outcomes measured.

What type of Outcome would you like to add?

Student Learning Outcome

Enter Outcome

Students demonstrate knowledge of mathematical pedagogy.

Timeframe for this Outcome

Academic Year 2023-24

Performance Target for "Met"

100% pass rate on first attempt of Praxis 2.

Performance Target for "Partially Met"

90% or all but one pass on first attempt

Performance Target for "Not Met"

More than 1 failure on first attempt.

Assessment Measure Used

PRAXIS 2 results

Frequency of Assessment

Annually to students in the Teacher Certification program.

Data Collected for this Timeframe (Results)

3 students took and passed the Praxis 2 exam this academic year.

Score (Met=3, Partially Met=2, Not Met=1)

3

Comments/Narrative

Our students tend to pass on first attempt.

Resources Needed to Meet/Sustain Results

Explanation of How Resources Will Be Used

Outcome 2

Outcomes are specific, **measurable** statements that reflect the broader goals.

Academic Programs are required to develop **Student Learning Outcomes**, which describe knowledge, skills, and values that students are expected to gain as a result of their educational experiences.

Academic Programs may also develop **Operational Outcomes**, which describe the level of performance of an operational aspect of a program or office (ex. graduation rates, retention, employment data).

Most goals have at least two outcomes measured.

What type of Outcome would you like to add?

Student Learning Outcome

Enter Outcome

Students reach Secondary Education Benchmarks set by the College of Teacher Education

Timeframe for this Outcome

Academic Year 2023-24

Performance Target for "Met"

All students reach Secondary Education Benchmarks set by College of Teacher Education

Performance Target for "Partially Met"

All but one student reaches Secondary Education Benchmarks set by College of Teacher Education

Performance Target for "Not Met"

More than 2 students do not reach Secondary Education Benchmarks set by College of Teacher Education

Assessment Measure Used

PLT from ETS

Frequency of Assessment

annually

Data Collected for this Timeframe (Results)

3 students passed the PLT exam this academic year

Score (Met=3, Partially Met=2, Not Met=1)

Comments/Narrative

Our students regularly meet the requirements and benchmarks set in place by the College of Teacher Education.

Resources Needed to Meet/Sustain Results

Explanation of How Resources Will Be Used

Goal Summary

Goal Summary/Comments

The level of mathematics on the Praxis II exam is well within the reach of a mathematics major and so acceptable levels of performance are expected.

Changes Made/Proposed Related to Goal

Faculty will discuss adding an outcome that will assess the level of pedagogical preparation our students reach as the result of courses in our mathematics curriculum specifically designed for mathematics certification majors.

Upload Rubrics/Other Files

Goal 3

Program Goals are broad and overarching statements about the skills, knowledge, and dispositions students are expected to gain by the end of their course of study (big picture). They support the Institution's Mission/Goals.

Program Goal

Students will communicate mathematical ideas effectively.

Pillar of Success Supported

Robust Student Experience

Outcomes

Outcome 1

Outcomes are specific, **measurable** statements that reflect the broader goals.

Academic Programs are required to develop **Student Learning Outcomes**, which describe knowledge, skills, and values that students are expected to gain as a result of their educational experiences.

Academic Programs may also develop **Operational Outcomes**, which describe the level of performance of an operational aspect of a program or office (ex. graduation rates, retention, employment data).

Most goals have at least two outcomes measured.

What type of Outcome would you like to add?

Student Learning Outcome

Enter Outcome

Students display the ability to research and understand an extension of or a new mathematical topic.

Timeframe for this Outcome

Academic year 2023-2024

Performance Target for "Met"

At least 75% of students score an average of at least a 2.0 (Proficient) on the two items "Extends presenter's mathematical knowledge" and "Displayed an understanding of the mathematics" on the Presentation Rubric.

Performance Target for "Partially Met"

At least half the students score an average of 2.0 (Proficient) on the two items "Extends presenter's mathematical knowledge" and "Displayed an understanding of the mathematics" on the Presentation Rubric.

Performance Target for "Not Met"

Fewer than half the students score an average of (Proficient) on the two items "Extends presenter's mathematical knowledge" and "Displayed an understanding of the mathematics" on the Presentation Rubric.

Assessment Measure Used

Faculty ratings of student capstone presentation projects.

Frequency of Assessment

Every year to students in MATH 499

Data Collected for this Timeframe (Results)

11 of 13 students scored an average of at least 2.0 on these items.

Score (Met=3, Partially Met=2, Not Met=1)

3

Comments/Narrative

11 out of 13 students averaged at least a 2.0 on the "Extends mathematical knowledge," while 13 out of 13 students averaged a 2.0 on "Displayed a Strong Understanding of all the mathematics." If we consider both questions together, 13 out of 13 averaged greater than 2.0.

Resources Needed to Meet/Sustain Results

Explanation of How Resources Will Be Used

Outcome 2

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Academic Programs are required to develop **Student Learning Outcomes**, which describe knowledge, skills, and values that students are expected to gain as a result of their educational experiences.

Academic Programs may also develop **Operational Outcomes**, which describe the level of performance of an operational aspect of a program or office (ex. graduation rates, retention, employment data).

Most goals have at least two outcomes measured.

What type of Outcome would you like to add?

Student Learning Outcome

Enter Outcome

Students demonstrate the ability to create a professional presentation with mathematical content.

Timeframe for this Outcome

Academic Year 2023-24

Performance Target for "Met"

At least 75% of students score an average of at least a 2.0 on the items related to effective communication on the Presentation Scoring Rubric.

Performance Target for "Partially Met"

At least half of the students score an average of at least a 2.0 on the item "Interest and Appeal of presentation" on the Presentation Scoring Rubric.

Performance Target for "Not Met"

Fewer than half of students score an average of at least a 2.0 on the item "Interest and Appeal of presentation" on the Presentation Scoring Rubric.

Assessment Measure Used

Scores on the Presentation Scoring Rubric

Frequency of Assessment

Annually to students in MATH 499

Data Collected for this Timeframe (Results)

All 13 students scored an average of at least a 2.0.

Score (Met=3, Partially Met=2, Not Met=1)

3

Comments/Narrative

If we consider all subcategories for "Effective Communication" as a single block, all students meet the requirement. However, if we consider them individually, two students would not meet the 2.0 average for at least one of the subcategories.

Resources Needed to Meet/Sustain Results

Explanation of How Resources Will Be Used

Outcome 3

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Most goals have at least two outcomes measured.

What type of Outcome would you like to add?

Student Learning Outcome

Enter Outcome

Students demonstrate the ability to prepare a professional presentation of mathematical material.

Timeframe for this Outcome

Annually in MATH 499

Performance Target for "Met"

75% of all students score an average of at least a 2.0 on the items relating to "Organization and Clarity of presentation" on the Presentation Scoring Rubric.

Performance Target for "Partially Met"

At least half of the students score an average of at least a 3.0 on the item "Organization and Clarity of presentation" on the Presentation Scoring Rubric.

Performance Target for "Not Met"

Fewer than half of the students score an average of at least a 3.0 on the item "Organization and Clarity of presentation" on the Presentation Scoring Rubric.

Assessment Measure Used

Faculty scores of student presentations

Frequency of Assessment

annually in MATH 499

Data Collected for this Timeframe (Results)

All 13 students scored at least a 2.0.

Score (Met=3, Partially Met=2, Not Met=1)

3

Comments/Narrative

The presentation scoring rubric will be re-evaluated and revised as needed before the Spring 2025 offering of MATH 499. Students continue to score well in this category even after updating the scoring rubric in the Spring 2023 semester.

Resources Needed to Meet/Sustain Results**Explanation of How Resources Will Be Used****Outcome 4**

Outcomes are specific, **measurable** statements that reflect the broader goals.

Academic Programs are required to develop **Student Learning Outcomes**, which describe knowledge, skills, and values that students are expected to gain as a result of their educational experiences.

Academic Programs may also develop **Operational Outcomes**, which describe the level of performance of an operational aspect of a program or office (ex. graduation rates, retention, employment data).

Most goals have at least two outcomes measured.

What type of Outcome would you like to add?

Operational Outcome

Enter Outcome

Students demonstrate success in employment and/or graduate-level education, as applicable.

Timeframe for this Outcome

Academic Year 2023-2024

Performance Target for "Met"

All graduating seniors are employed or accepted into graduate programs by the semester following graduation.

Performance Target for "Partially Met"

At least half of graduating seniors are employed or accepted into graduate programs by the semester following graduation.

Performance Target for "Not Met"

Fewer than half of graduating seniors are employed or accepted into graduate programs by the semester following graduation.

Assessment Measure Used

Self-reported during student Exit Interviews or follow-up contact by faculty members the following semester.

Frequency of Assessment

Every year

Data Collected for this Timeframe (Results)

Four dual-degree mathematics/engineering students are continuing studies at Clemson University starting in the Fall 2024 semester. One student has matriculated at the University of Tennessee in a PhD program with a GTA assistantship. Three students are currently employed in secondary education. Four had secured private industry jobs as of the Spring 2024 graduation date. One student decided to return to Lander to continue further education and is planning to graduate in the Fall 2024 semester.

Score (Met=3, Partially Met=2, Not Met=1)

3

Comments/Narrative

This question was added to the Exit Interview questions. All students are either continuing education at Lander or Clemson Universities, in graduate school, or have secured employment.

Resources Needed to Meet/Sustain Results

Explanation of How Resources Will Be Used

Goal Summary

Goal Summary/Comments

Immediate plans of graduates are not always known. We will continue to work to better collect information from graduating students.

Changes Made/Proposed Related to Goal

Faculty will create a calendar for following-up with recent graduates. Generally, almost all of our graduates find employment, if they wish to do so.

Upload Rubrics/Other Files

Goal 4

Program Goals are broad and overarching statements about the skills, knowledge, and dispositions students are expected to gain by the end of their course of study (big picture). They support the Institution's Mission/Goals.

Program Goal

Compliance with Program Productivity Standards as defined by the SC Commission of Higher Education.

Pillar of Success Supported

High-Demand, Market-Driven Programs

Outcomes

Outcome 1

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Most goals have at least two outcomes measured.

What type of Outcome would you like to add?

Operational Outcome

Enter Outcome

Completions.(Mathematics Degrees awarded.)

Timeframe for this Outcome

2023-2024

Performance Target for "Met"

Using a five-year rolling average, the number of degrees awarded (a) for Baccalaureate programs is greater than or equal to 8, (b) for Master's/First Professional is greater than or equal to 3.

Performance Target for "Partially Met"

none

Performance Target for "Not Met"

Using a five-year rolling average, the number of degrees awarded (a) for Baccalaureate programs is less than 8 (b) for Master's/First Professional is less than 3.

Assessment Measure Used

Enrollment and Graduation data extracted from the Program Productivity Report.

Frequency of Assessment

Annually

Data Collected for this Timeframe (Results)

12 student graduated; rolling-average 6.4

Score (Met=3, Partially Met=2, Not Met=1)

1

Comments/Narrative

Note, we have improved our rolling average to 6.4 and we had 12 graduates last year which is a great improvement over the preceding year.

Since we are a small university, we cannot expect a large number of mathematics majors.

Also, we think that we tend to lose 'credit' for completions as some of our Dual-degree Engineering students do not apply for their degree from Lander University when they graduate from Clemson.

We are attempting to retrieve information about our Dual-degree Engineering students over the last 5 years to see if this is true.

We also are working to build ongoing relationships with students who go on to the Clemson Engineering program by checking in with them regularly maintaining communication during those years.

Resources Needed to Meet/Sustain Results

We need a way to encourage Math-Engineering enrollment students to apply for Lander graduation when they complete Clemson and waiving or paying the Lander graduation fee would likely improve our numbers significantly. Cost estimate is 100 dollars per student.

Explanation of How Resources Will Be Used

To pay the graduation fee for all students with a Lander/Clemson Dual-Engineering degree.

Outcome 2

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Most goals have at least two outcomes measured.

What type of Outcome would you like to add?

Operational Outcome

Enter Outcome

Major Enrollment

Timeframe for this Outcome

2023-2024

Performance Target for "Met"

Using a five-year rolling average, the number of students enrolled in the major (a) for Baccalaureate programs is greater than or equal to 12.5, (b) for Master's/First Professional is greater than or equal to 6.

Performance Target for "Partially Met"

none

Performance Target for "Not Met"

Using a five-year rolling average, the number of students enrolled in the major (a) for Baccalaureate programs is greater than or equal to 12.5, (b) for Master's/First Professional is less than 6.

Assessment Measure Used

Enrollment and Graduation data extracted from the Program Productivity Report.

Frequency of Assessment

Annually

Data Collected for this Timeframe (Results)

Headcount 2023: 49
Rolling average: 48

Score (Met=3, Partially Met=2, Not Met=1)

3

Comments/Narrative

Enrollments in the mathematics major are high because of the number of students who enter Lander initially declaring a mathematics major but who then discover that they are either unprepared or not interested in pursuing college-level mathematics. A better measure of headcount in the mathematics major is the enrollment in MATH 241, third semester calculus, currently at 17.

Resources Needed to Meet/Sustain Results**Explanation of How Resources Will Be Used**

Goal Summary

Goal Summary/Comments

Pursue with administration the ability to waive or pay the graduation fee for Dual-Engineering students.

Changes Made/Proposed Related to Goal

Discussed with the Dean who has agreed to consider all options.

Upload Rubrics/Other Files**Dean's Email Address**

jyates1@lander.edu

Approved by Dean?**Signature of Dean****Comments from Dean's Review**