

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
Cybersecurity, B.S.

Submission Due Date
Fall 2025: October 1, 2025

Assessment Coordinator Name
Dr. Elbasher Elmahdi

Enter Assessment Coordinator Email
eelmahdi@lander.edu

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 who graduate with a B.S. degree in Cybersecurity will demonstrate an understanding of the fundamental concepts, principles, and current trends in the cybersecurity discipline.

Pillar of Success Supported

Graduates Who Are Gainfully Employed or Admitted to Graduate School

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

The percentage of portfolio evaluations receiving scores of 4.0 or above for the design principles indicator of the CIS 449 portfolio rubric.

***(Total portfolio evaluations=Number of portfolios X Number of faculty members evaluating the portfolios, e.g. 3 portfolios evaluated by 4 faculty members will be counted as 12 portfolio evaluations. N/A responses are discarded.)

Timeframe for this Outcome

Academic Year 2024–2025

Performance Target for "Met"

80% or more evaluations received a score of 3 or above for the design principles indicator of the CIS 449 portfolio rubric.

Performance Target for "Partially Met"

Fewer than 80% but at least 70% portfolio evaluations received a score of 3 or above for the design principles indicator of the CIS 449 portfolio rubric

Performance Target for "Not Met"

Fewer than 70% portfolio evaluations received a score of 3 or above for the design principles indicator of the CIS 449 portfolio rubric

Assessment Measure Used

CIS 449 research project portfolio

Frequency of Assessment

Yearly

Data Collected for this Timeframe (Results)

4 portfolio evaluations.

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

3

Comments/Narrative

The portfolio rubric designed for this outcome is based on the CIS 449 course, which is being taught for the first time in the 2023-2024 academic year.

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 will be able to identify, and use required cyber defense tools, methods, and components needed to evaluate a given scenario. Faculty will identify practical assignments and a small project in CIS 343 and CIS 344, and appropriate weights will be assigned to each identified component. The average of scores for all identified components will then be computed and used to measure performance for this criterion.

Timeframe for this Outcome

Academic years Fall 2021 - Spring 2025

Performance Target for "Met"

80% or more students score at least an average of 80% in designated labs and projects in CIS 343 and CIS 344.

Performance Target for "Partially Met"

Fewer than 80% but at least 70% of students score at least an average of 80% in designated labs and projects in CIS 343 and CIS 344.

Performance Target for "Not Met"

Fewer than 70% students score at least an average of 80% in designated labs and projects in CIS 343 and CIS 344.

Assessment Measure Used

Designated labs in CIS 343 and CIS 344

Frequency of Assessment

Yearly

Data Collected for this Timeframe (Results)

79.09% of students completed the designated labs
(43 out of 62, 44 out of 48).

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

2

Comments/Narrative

Data collected and analyzed is based on the statistics reports since the academic year Fall 2021 till Spring 2025.

Hopefully, the performance target for this goal will improve more with the addition of online cybersecurity program students in the next academic years.

Resources Needed to Meet/Sustain Results

Explanation of How Resources Will Be Used

Goal Summary

Goal Summary/Comments

79.09% of students score an average of 80% and more in CIS 343 and CIS 344's designated labs and the remaining 20.91% of students score an average less than 80% but still equal or greater than 50% as shown by combining CIS 343 and CIS 344 Statistics reports.

Changes Made/Proposed Related to Goal

Data were collected over four academic years for this assessment.

Upload Rubrics/Other Files

Total Assignments CIS 343.pdf

Total Assignments CIS 344.pdf

2 _ CIS 449 Portfolio Assessment - Exploring Digital Image Steganography.docx

1 _ CIS 449 Portfolio Assessment - Exploring Digital Image Steganography.docx

2 _ CIS 449 Portfolio Assessment - Enhancing Password Security in the Era of Advanced Cracking Techniques.docx

1 _ CIS 449 Portfolio Assessment - Enhancing Password Security in the Era of Advanced Cracking Techniques.docx

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 who graduate with a B.S. degree in Cybersecurity will demonstrate an understanding of the federal, state, and local cyber defense laws and partners/structures, and ethics.

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

Students will be able to responsibly handle compromised data as it pertains to legal, ethical, and agency auditing. Students' numeric grades earned from two of the designated labs in CIS 344 will be used to measure this outcome. If more than two labs are used, then the average of all identified components will be used to measure the performance of this outcome.

Timeframe for this Outcome

Academic years Fall 2021 - Spring 2025

Performance Target for "Met"

80% or more students score 80% or higher in CIS 344 designated labs related to evidence handling.

Performance Target for "Partially Met"

Fewer than 80% but at least 70% students score 80% or higher in CIS 344 designated labs related to evidence handling.

Performance Target for "Not Met"

Fewer than 70% students score 80% or higher in CIS 344 designated labs related to evidence handling.

Assessment Measure Used

Two designated labs in CIS 344

Frequency of Assessment

Yearly

Data Collected for this Timeframe (Results)

85.71% of students score 80% or higher. (10/10, 9/10, 10/14 and 13/15)

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

3

Comments/Narrative

The Cybersecurity faculty have designated key CIS-344 labs that used to measure this outcome, and it's still held a great performance.

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 will show an understanding of the laws that provide US entities the authority to perform cyber operations. Students' numeric grades obtained in assigned CIS 243 work will be used to measure this outcome.

Timeframe for this Outcome

Academic years Fall 2021 - Spring 2025

Performance Target for "Met"

80% or more students score 80% or above in designated assignments in CIS 243.

Performance Target for "Partially Met"

Fewer than 80% but at least 70% students score 80% or above in designated assignments in CIS 243.

Performance Target for "Not Met"

Fewer than 70% students score 80% or above in designated assignments in CIS 243.

Assessment Measure Used

Designated assignments in CIS 243

Frequency of Assessment

Yearly

Data Collected for this Timeframe (Results)

75% of students score 80% and more (37/48)

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

2

Comments/Narrative

The percentage of students who scored 80% or higher is 3% lower compared to previous years in the designated assignments for CIS 243, but it still keeps the same performance (Partially Met)

Resources Needed to Meet/Sustain Results

Explanation of How Resources Will Be Used

Goal Summary

Goal Summary/Comments

Outcomes of this goal show a good performance.

Changes Made/Proposed Related to Goal

N/A

Upload Rubrics/Other Files

Total Assignments CIS 243.pdf

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 who graduate with a B.S. degree in Cybersecurity will demonstrate an understanding of the fundamental concepts, technologies, components, and issues associated with components of modern computing environments.

Pillar of Success Supported

Graduates Who Are Gainfully Employed or Admitted to Graduate School

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 will understand the common terms and technologies used in the field of information systems and cybersecurity. Students' numeric grades earned in designated CIS 243 assignments will be used to measure this outcome.

Timeframe for this Outcome

Academic years Fall 2021 - Spring 2025

Performance Target for "Met"

80% or more students score 80% or above in designated CIS 243 exams or quizzes.

Performance Target for "Partially Met"

Fewer than 80% but at least 70% students score 80% or above in CIS 243 exams or quizzes.

Performance Target for "Not Met"

Fewer than 70% students score 80% or above in CIS 243 exams or quizzes.

Assessment Measure Used

Exams (Three Exams) in CIS 243

Frequency of Assessment

Yearly

Data Collected for this Timeframe (Results)

58.44% (45/77)

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

1

Comments/Narrative

The Cybersecurity faculty had planned to assign a project for all students in the 2024–2025 academic year to effectively measure this outcome for the program assessment. However, due to limited time at the end of the semester and remaining course material, we postponed this plan to the next academic year (2025 –2026).

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 will be able to design, deploy, and secure one or more computer network(s). Students numeric grades in a dedicated CIS 140 lab will be used to measure this outcome.

Timeframe for this Outcome

Academic years Fall 2021 - Spring 2025

Performance Target for "Met"

80% or more students score 80% or above in designated CIS 140 lab.

Performance Target for "Partially Met"

Fewer than 80% but at least 70% students score 80% or above in designated CIS 140 lab.

Performance Target for "Not Met"

Fewer than 70% students score 80% or above in designated CIS 140 lab.

Assessment Measure Used

Designated lab in CIS 140

Frequency of Assessment

Yearly

Data Collected for this Timeframe (Results)

68.05% of students (49/72)

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

1

Comments/Narrative

This outcome is currently measured by a single lab. Incorporating additional labs would provide a more accurate measure of performance in achieving the goal. Our plan is to request and more measures to achieve better performance for this outcome.

Resources Needed to Meet/Sustain Results

Explanation of How Resources Will Be Used

Outcome 3

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 will be able to use, manage, and secure multiple operating systems. Students' final numeric grades in CIS 260 course will be used to measure this outcome.

Timeframe for this Outcome

Academic Years Fall 2021 - Spring 2025

Performance Target for "Met"

80% or more students obtained a final cumulative score of 80% in CIS 260 course.

Performance Target for "Partially Met"

Fewer than 80% or but at least 70% students obtained a final cumulative score of 80% in CIS 260 course.

Performance Target for "Not Met"

Fewer than 70% students obtained a final cumulative score of 80% in CIS 260 course.

Assessment Measure Used

Students' final numeric cumulative score in CIS 260

Frequency of Assessment

Yearly

Data Collected for this Timeframe (Results)

The average is 61.90% (52/84) of students in the final grades

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

1

Comments/Narrative

As the course covers Windows and Linux operating systems and multiple topics related to each, final numeric grade will be an effective tool for measuring this outcome's performance.

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?

Student Learning Outcome

Enter Outcome

Students will be able to capture and analyze data-in-motion and data-at-rest to diagnose malicious activities. Faculty will identify labs and/or assignments in CIS 343 and CIS 344 and appropriate weights will be assigned to each identified component. An average of scores for all identified components will then be computed and used to measure performance for these criteria.

Timeframe for this Outcome

Academic years Fall 2021 - Spring 2025

Performance Target for "Met"

80% or more students score at least an average of 90% in designated labs and projects in CIS 343 and CIS 344.

Performance Target for "Partially Met"

Fewer than 80% but at least 70% of students score at least an average of 90% in designated labs and projects in CIS 343 and CIS 344.

Performance Target for "Not Met"

Fewer than 70% students score at least an average of 90% in designated labs and projects in CIS 343 and CIS 344.

Assessment Measure Used

Designated labs in CIS 343 and CIS 344

Frequency of Assessment

Yearly

Data Collected for this Timeframe (Results)

79.09% of students completed the designated labs
(43/62 and 44/48)

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

2

Comments/Narrative

Cybersecurity faculty assigned a portion of the final exam in CIS 343 as a practical exam and used this academic year to measure this outcome effectively.

Resources Needed to Meet/Sustain Results

Explanation of How Resources Will Be Used

Goal Summary

Goal Summary/Comments

By adding a portion of the final exam in CIS 343 as a practical exam, performance target of this outcome is still much better than last year.

Changes Made/Proposed Related to Goal

N/A

Upload Rubrics/Other Files

Total Exams CIS 243.pdf

Final Grade CIS 260.png

CIS 140 Lab.docx

Total Assignments CIS 343.pdf

Total Assignments CIS 344.pdf

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

Students who graduate with a B.S. degree in Cybersecurity will demonstrate the knowledge to develop and maintain solutions for preserving confidentiality, integrity, and availability of information systems.

Pillar of Success Supported

Graduates Who Are Gainfully Employed or Admitted to Graduate School

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 will understand the importance of cryptography. Students' numeric grades for a designated assignment or quiz in CIS 345 will be used to measure this outcome.

Timeframe for this Outcome

Academic years Fall 2023 - Spring 2025

Performance Target for "Met"

80% or more students score 80% or above in designated CIS 345 assignment

Performance Target for "Partially Met"

Fewer than 80% but at least 70% students score 80% or above in designated CIS 345 assignment

Performance Target for "Not Met"

Fewer than 70% of students score 80% or above in designated CIS 345 assignment

Assessment Measure Used

Designated assignment in CIS 345

Frequency of Assessment

Yearly

Data Collected for this Timeframe (Results)

The average grade for all students across the total assignments in CIS 345 is 68%.

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

1

Comments/Narrative

This course is being taught for the first time in the 2023-2024 academic year, and assignments are developed with assessment needs in mind to effectively measure this outcome.

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 will be able to deploy solutions to detect malicious activity. Faculty will identify labs and/or assignments in CIS 243 and CIS 344 and appropriate weighting will be assigned to each identified component. The average of scores for all identified components will then be computed and used to measure performance for this criterion.

Timeframe for this Outcome

Academic years Fall 2021 - Spring 2025

Performance Target for "Met"

80% or more students score at least an average of 80% in designated labs and projects in CIS 243 and CIS 344.

Performance Target for "Partially Met"

Fewer than 80% but at least 70% of students score at least an average of 80% in designated labs and projects in CIS 243 and CIS 344.

Performance Target for "Not Met"

Fewer than 70% students score at least an average of 80% in designated labs and projects in CIS 243 and CIS 344.

Assessment Measure Used

Designated labs in CIS 243 and CIS 344

Frequency of Assessment

Yearly

Data Collected for this Timeframe (Results)

81.45% (57/76 and 44/48) in designated labs

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

3

Comments/Narrative

Cybersecurity faculty assigned small project in CIS 243 and CIS 343 that will be used to measure this outcome in academic year 2024-2025.

Resources Needed to Meet/Sustain Results

Explanation of How Resources Will Be Used

Outcome 3

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 will be able to identify an attack(s) in progress and/or in the past and defend against them. Faculty will identify labs and/or assignments in CIS 243, CIS 343 and CIS 344 and appropriate weights will be assigned to each identified component. The average of scores for all identified components will then be computed and will be used to measure performance for this criterion.

Timeframe for this Outcome

Academic Years Fall 2021 - Spring 2025

Performance Target for "Met"

80% or more students score at least a weighted average of 80% in CIS 243, CIS 343 and CIS 344's designated labs.

Performance Target for "Partially Met"

Fewer than 80% but at least 70% students score at least a weighted average of 80% in CIS 243, CIS 343 and CIS 344's designated labs.

Performance Target for "Not Met"

Fewer than 70% students score at least a weighted average of 80% in CIS 243, CIS 343 and CIS 344's designated labs.

Assessment Measure Used

Designated labs in CIS 243, CIS 343 and CIS 344

Frequency of Assessment

Yearly

Data Collected for this Timeframe (Results)

77.41% in designated labs of CIS 243, CIS 343 and CIS 344 (57/76, 43/62 and 44/48)

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

2

Comments/Narrative

Cybersecurity faculty assigned a small project in CIS 243, CIS 344 and CIS 344 that will also be used to measure this outcome upcoming academic year 2024-2025.

Resources Needed to Meet/Sustain Results

Explanation of How Resources Will Be Used

Goal Summary

Goal Summary/Comments

N/A

Changes Made/Proposed Related to Goal

N/A

Upload Rubrics/Other Files

Total Assignments CIS 243.pdf

Total Assignments CIS 345.pdf

Total Assignments CIS 344.pdf

Total Assignments CIS 343.pdf

Goal 5

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 who graduate with a B.S. degree in Cybersecurity will demonstrate an ability to assess risk management practices and policies for an organization

Pillar of Success Supported

Graduates Who Are Gainfully Employed or Admitted to Graduate School

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 will be able to develop and deploy plans for threat prevention, risk assessment, and disaster recovery. Numeric grades assigned to CIS 346 final project will be used to assess this outcome's performance.

Timeframe for this Outcome

Academic Years Fall 2022 - Spring 2025

Performance Target for "Met"

80% or more students score 80% or above in CIS 346 final project assessment.

Performance Target for "Partially Met"

Fewer than 80% but at least 70% students score 80% or above in CIS 346 final project assessment.

Performance Target for "Not Met"

Fewer than 70% students score 80% or above in CIS 346 final project assessment.

Assessment Measure Used

CIS 346 Final project

Frequency of Assessment

Yearly

Data Collected for this Timeframe (Results)

Students average 82.14% of the final Project.
(23/28)

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

3

Comments/Narrative

This course started running in the academic year 2022–2023.

Resources Needed to Meet/Sustain Results

Explanation of How Resources Will Be Used

Goal Summary

Goal Summary/Comments

N/A

Changes Made/Proposed Related to Goal

N/A

Upload Rubrics/Other Files

Project for Exam 2 Part 2 CIS 346.pdf

Goal 6

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 who graduate with a B.S. degree in Cybersecurity will demonstrate the ability to communicate effectively and appropriately orally and in writing.

Pillar of Success Supported

Graduates Who Are Gainfully Employed or Admitted to Graduate School

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 will demonstrate an ability to communicate with technical and non-technical audiences effectively and appropriately.

The percentage of portfolio evaluations (for the last three years) receiving scores of 4.0 or above for the effective communication indicator of the CIS 449 portfolio rubric.

*** $(\text{Total portfolio evaluations} = \text{Number of portfolios} \times \text{Number of faculty members evaluating the portfolios})$, e.g. 3 portfolios evaluated by 4 faculty members will be counted as 12 portfolio evaluations.

N/A responses are discarded.

Timeframe for this Outcome

N/A

Performance Target for "Met"

80% or more portfolio evaluations (for the last three years) received a score of 3 or above for the effective communication indicator of the CIS 449 portfolio rubric.

Performance Target for "Partially Met"

Fewer than 80% but at least 70% portfolio evaluations (for the last three years) received a score of 3 or above for the effective communication indicator of the CIS 449 portfolio rubric.

Performance Target for "Not Met"

Fewer than 70% portfolio evaluations (for the last three years) received a score of 3 or above for the effective communication indicator of the CIS 449 portfolio rubric.

Assessment Measure Used

CIS 449 final project presentation

Frequency of Assessment

Yearly

Data Collected for this Timeframe (Results)

N/A

Score (Met=3, Partially Met=2, Not Met=1)**Comments/Narrative**

The portfolio rubric designed for this outcome is based on the CIS 449 course, which is being taught for the first time in the 2023-2024 academic year. Therefore, the Cybersecurity faculty have decided to include the results of this outcome in the next program assessment for 2024-2025, aiming to make it more effective with a larger number of graduating students.

Resources Needed to Meet/Sustain Results

N/A

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 will demonstrate an ability to write a report detailing their investigation process on any incident. A written record of the entire investigation must be clear, concise, and accurate.

Timeframe for this Outcome

Academic Years Fall 2021 - Spring 2024

Performance Target for "Met"

80% or more students score 80% or above in CIS 343 final practical exam.

Performance Target for "Partially Met"

Fewer than 80% but at least 70% students score 80% or above in CIS 343 final practical exam.CIS

Performance Target for "Not Met"

Fewer than 70% students score 80% or above in CIS 343 final practical exam.

Assessment Measure Used

The practical portion of final exam CIS 343

Frequency of Assessment

Yearly

Data Collected for this Timeframe (Results)

Students average 88.67% of the final exam.
(47/53)

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

3

Comments/Narrative

A portion of the final exam in CIS 343 is used to measure this outcome effectively.

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

Goal Summary

Goal Summary/Comments

N/A

Changes Made/Proposed Related to Goal

N/A

Upload Rubrics/Other Files

Final Project CIS 345.pdf

1 _ CIS 449 Portfolio Assessment - Enhancing Password Security in the Era of Advanced Cracking Techniques.docx

1 _ CIS 449 Portfolio Assessment - Exploring Digital Image Steganography.docx

2 _ CIS 449 Portfolio Assessment - Enhancing Password Security in the Era of Advanced Cracking Techniques.docx

2 _ CIS 449 Portfolio Assessment - Exploring Digital Image Steganography.docx

Goal 7

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 who graduate with a B.S. degree in Cybersecurity will demonstrate the ability to self-learn.

Pillar of Success Supported

Graduates Who Are Gainfully Employed or Admitted to Graduate School

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 will be able to complete a small-scale cybersecurity research project. The percentage of portfolio evaluations (for the last three years) receiving scores of 4.0 or above for the self-learning and research indicator of the CIS 449 portfolio rubric.

*** (Total portfolio evaluations = Number of portfolios X Number of faculty members evaluating the portfolios, e.g. 3 portfolios evaluated by 4 faculty members will be counted as 12 portfolio evaluations. N/A responses are discarded.)

Timeframe for this Outcome

N/A

Performance Target for "Met"

80% or more portfolio evaluations (for the last three years) received a score of 3 or above for the self-learning and research indicator of the CIS 449 portfolio rubric

Performance Target for "Partially Met"

Fewer than 80% but at least 70% portfolio evaluations (for the last three years) received a score of 3 or above for the self-learning and research indicator of the CIS 449 portfolio rubric

Performance Target for "Not Met"

Fewer than 70% portfolio evaluations (for the last three years) received a score of 3.5 or above for the self-learning and research indicator of the CIS 449 portfolio rubric

Assessment Measure Used

Frequency of Assessment

Faculty evaluation of CIS 449 research project portfolio

Yearly

Data Collected for this Timeframe (Results)
4 portfolio evaluations.

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

Comments/Narrative

The portfolio rubric designed for this outcome is based on the CIS 449 course, which is being taught for the first time in the 2023-2024 academic year.

Resources Needed to Meet/Sustain Results

Explanation of How Resources Will Be Used

Goal Summary

Goal Summary/Comments

N/A

Changes Made/Proposed Related to Goal

N/A

Upload Rubrics/Other Files

2 _ CIS 449 Portfolio Assessment - Enhancing Password Security in the Era of Advanced Cracking Techniques.docx

2 _ CIS 449 Portfolio Assessment - Exploring Digital Image Steganography.docx

1 _ CIS 449 Portfolio Assessment - Exploring Digital Image Steganography.docx

1 _ CIS 449 Portfolio Assessment - Enhancing Password Security in the Era of Advanced Cracking Techniques.docx

Goal 8

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

To comply with Program Productivity standards as defined by the South Carolina Commission on Higher Education

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?

Operational Outcome

Enter Outcome

Major Enrollment

Timeframe for this Outcome

Academic years 2021/22 - 2022/23 - 2023/24

Performance Target for "Met"

Using a five-year rolling average, the number of students enrolled in the BS Cybersecurity Program is greater than or equal to 12.5.

Performance Target for "Partially Met"

Not Applicable

Performance Target for "Not Met"

Using a five-year rolling average, the number of students enrolled in the BS Cybersecurity Program is less than 12.5.

Assessment Measure Used

Five-year rolling average

Frequency of Assessment

Yearly

Data Collected for this Timeframe (Results)

Academic years 2021/22 - 2022/23 & 2023/24 (7, 25 & 40)

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

3

Comments/Narrative

The 2024-2025 academic year is the fourth year of this program.

Resources Needed to Meet/Sustain Results

Explanation of How Resources Will Be Used

Goal Summary

Goal Summary/Comments

N/A

Changes Made/Proposed Related to Goal

N/A

Upload Rubrics/Other Files

Dean's Email Address

jyates1@lander.edu

Approved by Dean?

Signature of Dean

Comments from Dean's Review