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
Data Science, B.S.

Submission Due Date
2024-2025

Assessment Coordinator Name
Farha Ali

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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 graduating with a B.S. in Data Science will demonstrate an ability to apply computing concepts to use, manipulate, and analyze data.

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 competently perform programming tasks in Data Science programming languages.

Timeframe for this Outcome
2023 - 2024 and 2024 - 2025

Performance Target for "Met"
70% or more of students in each of DSCI 330, DSCI 340, DSCI 440, and DSCI 499 will score at least 3.5 out of 5 on programming-related components of the final project assessment rubric.

Performance Target for "Partially Met"
The target will be consider to be partially met, if it is neither met nor not met.

Performance Target for "Not Met"
Less than 60% of students at least one of DSCI 330, DSCI 340, DSCI 440, and DSCI 499 will score at least 3.5 out of 5 on programming-related components of the final project assessment rubric.

Assessment Measure Used
Relevant components of the final project assessment rubric.

Frequency of Assessment
During each offering of DSCI 330, DSCI 340, DSCI 440, and DSCI 499

Data Collected for this Timeframe (Results)
N/A. This being the third year of this program these courses have not been taught yet.

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

Comments/Narrative
No comment. This is the third year of this program and data have yet to be collected.

Resources Needed to Meet/Sustain Results
Although these courses have not been taught yet we need a data science faculty member to support these upper-level courses and other program needs. We request a tenure-track faculty position to support the data science program and teach upper-level data science courses. Our estimate is $94K/year (approximately $72K for the salary and $22K for other employee benefits).

Explanation of How Resources Will Be Used
The faculty member hired to support the data science program will be responsible for the following:
1. To develop and teach upper-level data science courses
2. To mentor and advise students majoring in data science
3. To represent the data science program in open houses and other admission activities
4. To ensure that the information available on Lander's website and catalog regarding the data science program is accurate and up-to-date
5. To ensure that the data science program is assessed annually, data is collected from the designated classes, and collected data is analyzed and properly reported in the annual assessment report
6. To ensure that the data science courses are regularly reviewed and updated as needed

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 understanding of the issues surrounding the acquisition, storage, and use of large data sets.

Timeframe for this Outcome
2023 - 2024 and 2024 - 2025

Performance Target for "Met"
70% or more of students in each of DSCI 330, DSCI 340, DSCI 440, and DSCI 499 will score at least 3.5 out of 5 on data acquisition and preprocessing components of the final project assessment rubric.

Performance Target for "Partially Met"
The target will be consider to be partially met, if it is neither met nor not met.

Performance Target for "Not Met"
Fewer than 60% of students in one or more of DSCI 330, DSCI 340, DSCI 440, and DSCI 499 will score at least 3.5 out of 5 on data acquisition and preprocessing components of the final project assessment rubric

Assessment Measure Used
Data acquisition and preprocessing components of the final project assessment rubric.

Frequency of Assessment
During each offering of DSCI 330, 340, 440 and 499

Data Collected for this Timeframe (Results)
N/A. Data not yet available

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

Comments/Narrative
No comment. These classes have not been taught yet.

Resources Needed to Meet/Sustain Results
Although these courses have not yet been taught, we will need a dedicated Data Science faculty member to support the upper-level courses and other program needs. We are requesting a tenure-track faculty position to help develop and teach upper-level Data Science courses, as well as support the overall program. Our estimated cost is $94K per year, which includes approximately $72K for salary and $22K for employee benefits.

Explanation of How Resources Will Be Used
he faculty member hired to support the Data Science program will be responsible for the following:

1. Developing and teaching upper-level Data Science courses.
2. Mentoring and advising students majoring in Data Science.

3. Representing the Data Science program at open houses and other admissions events.
4. Ensuring that the information on Lander's website and catalog regarding the Data Science program is accurate and up-to-date.
5. Developing the necessary tools and rubrics to assess outcomes aligned with Data Science goals.
6. Ensuring that the Data Science program is assessed annually, with data collected from designated courses, analyzed, and reported in the annual assessment report.
7. Regularly reviewing and updating Data Science courses as needed.

Goal Summary

Goal Summary/Comments
None.

Changes Made/Proposed Related to Goal
None.

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 graduating with a B.S. in Data Science will demonstrate mathematical and statistical understanding of the central algorithms used in the field of data science.

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 explain the role of Linear Algebra in Data Science Algorithms.

Timeframe for this Outcome

2024 - 2025

Performance Target for "Met"
70% of students in MATH 208 will score at least 3.5 out of 5 on Data Science-related test/exam items.

Performance Target for "Partially Met"
60% - 69% of students in MATH 208 will score at least 3.5 out of 5 on Data Science-related test/exam items.

Performance Target for "Not Met"
Less than 60% of students in MATH 208 will score at least 3.5 out of 5 on Data Science-related test/exam items.

Assessment Measure Used
Tests and Exams in MATH 208

Frequency of Assessment
Annually.

Data Collected for this Timeframe (Results)
Data has not yet been collected as MATH 208 was first offered in Spring 2024 and is still under development. Faculty have determined that structuring the course as an introduction to linear algebra is more beneficial than focusing primarily on data science. A foundational understanding of linear algebra is essential for grasping data science algorithms, and attempting to teach both basic concepts and advanced algorithms within a three-credit course is not effective.

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

Comments/Narrative
The course was first offered in Spring 2024, and we are considering restructuring it to better align with students' backgrounds and to better prepare them for advanced coursework.

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.

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 explain the statistical foundations of both supervised and unsupervised machine learning.

Timeframe for this Outcome
2023 - 2024

Performance Target for "Met"
70% of students in MATH 213 and MATH 214 will score at least 3.5 out of 5 on Data Science-related test/exam items.

Performance Target for "Partially Met"
The target will be consider to be partially met, if it is neither met nor not met.

Performance Target for "Not Met"
Less than 60% of students in MATH 213 and MATH 214 will score at least 3.5 out of 5 on Data Science-related test/exam items.

Assessment Measure Used
Relevant components of the assessment rubric.

Frequency of Assessment
During each offering of MATH 213 and 214

Data Collected for this Timeframe (Results)
N/A. The classes are being offered for the first time as special topics courses in Fall 2024 (i.e., the 2024-2025 academic year). There are only three to four students enrolled in each class

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

Comments/Narrative
The courses are being offered for the first time in the 2024-2025 academic year, so data has not yet been collected. Additionally, the major is growing slowly, and we currently have a limited number of students. Due to the demanding schedules of the computing faculty, there has been insufficient time to develop the necessary rubrics and tools for data collection and support.

Resources Needed to Meet/Sustain Results
We are requesting a tenure-track faculty position to help develop and teach upper-level Data Science courses, as well as support the overall program. Our estimated cost is $94K per year, which includes approximately $72K for salary and $22K for employee benefits.

Explanation of How Resources Will Be Used
The faculty member hired to support the Data Science program will be responsible for the following:

1. Developing and teaching upper-level Data Science courses.
2. Mentoring and advising students majoring in Data Science.
3. Representing the Data Science program at open houses and other admissions events.
4. Ensuring that the information on Lander’s website and catalog regarding the Data Science program is accurate and up-to-date.
5. Developing the necessary tools and rubrics to assess outcomes aligned with Data Science goals.
6. Ensuring that the Data Science program is assessed annually, with data collected from designated courses, analyzed, and reported in the annual assessment report.
7. Regularly reviewing and updating Data Science courses as needed.

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 both select and justify the selection of a model to be used in a variety of data science tasks.

Timeframe for this Outcome
2023 - 2024

Performance Target for "Met"
70% of students in MATH 213 and MATH 214 will score at least 3.5 out of 5 on Data Science-related test/exam items.

Performance Target for "Partially Met"
The target will be consider to be partially met, if it is neither met nor not met.

Performance Target for "Not Met"
Less than 60% of students in MATH 213 and MATH 214 will at least 3.5 out of 5 on Data Science-related test/exam items.

Assessment Measure Used
Relevant components of the assessment rubric

Frequency of Assessment
During every offering of MATH 213 and MATH 214

Data Collected for this Timeframe (Results)
N/A. The classes are being offered for the first time as special topics courses in Fall 2024 (i.e., the 2024-2025 academic year). There are only three to four students enrolled in each class

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

Comments/Narrative
The courses are being offered for the first time in the 2024-2025 academic year, so data has not yet been collected. Additionally, the major is growing slowly, and we currently have a limited number of students. Due to the demanding schedules of the computing faculty, there has been insufficient time to develop the necessary rubrics and tools for data collection and support.

Resources Needed to Meet/Sustain Results
We are requesting a tenure-track faculty position to help develop and teach upper-level Data Science courses, as well as support the overall program. Our estimated cost is $94K per year, which includes

approximately $72K for salary and $22K for employee benefit.

Explanation of How Resources Will Be Used
he faculty member hired to support the Data Science program will be responsible for the following:

1. Developing and teaching upper-level Data Science courses.
2. Mentoring and advising students majoring in Data Science.
3. Representing the Data Science program at open houses and other admissions events.
4. Ensuring that the information on Lander's website and catalog regarding the Data Science program is accurate and up-to-date.
5. Developing the necessary tools and rubrics to assess outcomes aligned with Data Science goals.
6. Ensuring that the Data Science program is assessed annually, with data collected from designated courses, analyzed, and reported in the annual assessment report.
7. Regularly reviewing and updating Data Science courses as needed.

Goal Summary

Goal Summary/Comments
None

Changes Made/Proposed Related to Goal
None

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 graduating with a B.S. in Data Science will demonstrate the ability to communicate results of data analyses including data visualization.

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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 produce technical reports orally and in writing summarizing the results of data analyses.

Timeframe for this Outcome
2023 - 2024 and 2024 - 2025

Performance Target for "Met"
70% or more of students in each of DSCI 231 and DSCI 499 will score at least 3.5 out of 5 on oral and written technical communication components of the final project assessment rubric.

Performance Target for "Partially Met"
The target will be consider to be partially met, if it is neither met nor not met.

Performance Target for "Not Met"
Less than 60% of students in at least one of DSCI 231 and DSCI 499 will score at least 3.5 out of 5 on oral and written technical communication components of the final project assessment rubric.

Assessment Measure Used
Oral and written technical communication components of the final project rubric

Frequency of Assessment
During each offering of DSCI 231 and DSCI 499

Data Collected for this Timeframe (Results)
N/A. Data not available yet. DSCI 231 was taught in Spring 2024 but only two students enrolled.

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

Comments/Narrative
The program is growing very slowly, with only a few students currently enrolled. These students are at different stages in their progress toward graduation, resulting in fewer than five students per class. Additionally, many courses are being taught for the first time, and the rubrics and other assessment tools are still under development.

Resources Needed to Meet/Sustain Results
We are requesting a tenure-track faculty position to help develop and teach upper-level Data Science courses, as well as support the overall program. Our estimated cost is $94K per year, which includes approximately $72K for salary and $22K for employee benefit.

Explanation of How Resources Will Be Used
he faculty member hired to support the Data Science program will be responsible for the following:

1. Developing and teaching upper-level Data Science courses.
2. Mentoring and advising students majoring in Data Science.
3. Representing the Data Science program at open houses and other admissions events.
4. Ensuring that the information on Lander’s website and catalog regarding the Data Science program is accurate and up-to-date.
5. Developing the necessary tools and rubrics to assess outcomes aligned with Data Science goals.
6. Ensuring that the Data Science program is assessed annually, with data collected from designated courses, analyzed, and reported in the annual assessment report.
7. Regularly reviewing and updating Data Science courses as needed.

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 communicate the results of data analyses to a non-technical audience as a means of informing decision-making.

Timeframe for this Outcome
2023 - 2024 and 2024 - 2025

Performance Target for "Met"
70% or more of students in each of DSCI 231 and DSCI 499 will score at least 3.5 out of 5 on oral and written non-technical communication components of the final project assessment rubric.

Performance Target for "Partially Met"
The target will be consider to be partially met, if it is neither met nor not met.

Performance Target for "Not Met"
Less than 60% of students at least one of DSCI 231 and DSCI 499 will score at least 3.5 out of 5 on oral and written non-technical communication components of the final project assessment rubric.

Assessment Measure Used
Oral and written technical communication components of the final project rubric

Frequency of Assessment
During each offering of DSCI 231 and DSCI 499

Data Collected for this Timeframe (Results)
N/A. DSCI 499 has not been taught yet. DSCI 231 was taught with only two students, hence the data is not collected.

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

Comments/Narrative
The program is growing very slowly, with only a few students currently enrolled. These students are at different stages in their progress toward graduation, resulting in fewer than five students per class. Additionally, many courses are being taught for the first time, and the rubrics and other assessment tools are still under development.

Resources Needed to Meet/Sustain Results
We are requesting a tenure-track faculty position to help develop and teach upper-level Data Science courses, as well as support the overall program. Our estimated cost is $94K per year, which includes approximately $72K for salary and $22K for employee benefit.

Explanation of How Resources Will Be Used
he faculty member hired to support the Data Science program will be responsible for the following:

1. Developing and teaching upper-level Data Science courses.
2. Mentoring and advising students majoring in Data Science.
3. Representing the Data Science program at open houses and other admissions events.
4. Ensuring that the information on Lander's website and catalog regarding the Data Science program is accurate and up-to-date.
5. Developing the necessary tools and rubrics to assess outcomes aligned with Data Science goals.
6. Ensuring that the Data Science program is assessed annually, with data collected from designated courses, analyzed, and reported in the annual assessment report.
7. Regularly reviewing and updating Data Science courses as needed.

Goal Summary

Goal Summary/Comments
None

Changes Made/Proposed Related to Goal
None

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
Students graduating with a B.S. in Data Science will apply data analyses in real-world scenarios in order to inform decision-making.

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 gain insights from data and evaluate results from data analysis in real-world scenarios.

Timeframe for this Outcome
2024-2025

Performance Target for "Met"
70% or more of students in DSCI 499 will score at least 3.5 out of 5 on relevant components of the final project assessment rubric.

Performance Target for "Partially Met"
Between 60% and 69% of students in DSCI 499 will score at least 3.5 out of 5 on relevant components of the final project assessment rubric.

Performance Target for "Not Met"
Less than 60% of students in DSCI 499 will score at least 3.5 out of 5 on relevant components of the final project assessment rubric.

Assessment Measure Used
Relevant components of the final project assessment rubric.

Frequency of Assessment
During each offering of DSCI 499

Data Collected for this Timeframe (Results)
N/A. New outcome. See timeframe above.

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

Comments/Narrative
No comment. This is the third year of this program and data have yet to be collected.

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.

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 apply methods and models to answer real-world, data science questions.

Timeframe for this Outcome
2024 - 2025

Performance Target for "Met"
70% or more of students in DSCI 499 will score at least 3.5 out of 5 on relevant components of the final project assessment rubric.

Performance Target for "Partially Met"
Between 60% and 69% of students in DSCI 499 will score at least 3.5 out of 5 on relevant components of the final project assessment rubric.

Performance Target for "Not Met"
Less than 60% of students in DSCI 499 will score at least 3.5 out of 5 on relevant components of the final project assessment rubric.

Assessment Measure Used
Relevant components of the final project assessment rubric.

Frequency of Assessment
During each offering of DSCI 499

Data Collected for this Timeframe (Results)
N/A. New outcome. See timeframe above.

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

Comments/Narrative
No comment. This is the third year of this program and data have yet to be collected.

Resources Needed to Meet/Sustain Results

Explanation of How Resources Will Be Used

Goal Summary

Goal Summary/Comments
None

Changes Made/Proposed Related to Goal
None

Upload Rubrics/Other Files

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 graduating a B.S. degree in Data Science will demonstrate the ability to develop a high-performance machine learning and deep learning system using a large data set.

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 develop machine learning and deep learning models and systems by using an appropriate programming language and large data sets.

Timeframe for this Outcome
2023 - 2024 and 2024 - 2025

Performance Target for "Met"
70% or more of students in each of DSCI 340, DSCI 440, and DSCI 499 will score at least 3.5 out of 5 on relevant components of the final project assessment rubric.

Performance Target for "Partially Met"
The target will be consider to be partially met, if it is neither met nor not met.

Performance Target for "Not Met"
Less than 60% of students in one of DSCI 340, DSCI 440, and DSCI 499 will score at least 3.5 out of 5 on relevant components of the final project assessment rubric.

Assessment Measure Used
Relevant components of the final project assessment rubric.

Frequency of Assessment
During each offering of DSCI 340, 440, and 449

Data Collected for this Timeframe (Results)
N/A. See timeframe above.

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

Comments/Narrative
Courses not taught yet.

Resources Needed to Meet/Sustain Results
We are requesting a tenure-track faculty position to help develop and teach upper-level Data Science courses, as well as support the overall program. Our estimated cost is $94K per year, which includes approximately $72K for salary and $22K for employee benefit.

Explanation of How Resources Will Be Used
he faculty member hired to support the Data Science program will be responsible for the following:

1. Developing and teaching upper-level Data Science courses.
2. Mentoring and advising students majoring in Data Science.
3. Representing the Data Science program at open houses and other admissions events.
4. Ensuring that the information on Lander's website and catalog regarding the Data Science program is accurate and up-to-date.
5. Developing the necessary tools and rubrics to assess outcomes aligned with Data Science goals.
6. Ensuring that the Data Science program is assessed annually, with data collected from designated courses, analyzed, and reported in the annual assessment report.
7. Regularly reviewing and updating Data Science courses as needed.

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 assess and fine-tune the performance of machine learning and deep learning models and systems.

Timeframe for this Outcome
2023 - 2024 and 2024 - 2025

Performance Target for "Met"
70% or more of students in each of DSCI 340, DSCI 440, and DSCI 499 will score at least 3.5 out of 5 on relevant components of the final project assessment rubric.

Performance Target for "Partially Met"
The target will be consider to be partially met, if it is neither met nor not met.

Performance Target for "Not Met"
Less than 60% of students in one of DSCI 340, DSCI 440, and DSCI 499 will score at least 3.5 out of 5 on relevant components of the final project assessment rubric.

Assessment Measure Used
Relevant components of the final project assessment rubric.

Frequency of Assessment
During each offering of DSCI 340, 440, and 449

Data Collected for this Timeframe (Results)

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

N/A. See timeframe above.

Comments/Narrative
Course not taught yet.

Resources Needed to Meet/Sustain Results
We are requesting a tenure-track faculty position to help develop and teach upper-level Data Science courses, as well as support the overall program. Our estimated cost is $94K per year, which includes approximately $72K for salary and $22K for employee benefit.

Explanation of How Resources Will Be Used
he faculty member hired to support the Data Science program will be responsible for the following:

1. Developing and teaching upper-level Data Science courses.
2. Mentoring and advising students majoring in Data Science.
3. Representing the Data Science program at open houses and other admissions events.
4. Ensuring that the information on Lander's website and catalog regarding the Data Science program is accurate and up-to-date.
5. Developing the necessary tools and rubrics to assess outcomes aligned with Data Science goals.
6. Ensuring that the Data Science program is assessed annually, with data collected from designated courses, analyzed, and reported in the annual assessment report.
7. Regularly reviewing and updating Data Science courses as needed.

Goal Summary

Goal Summary/Comments
None

Changes Made/Proposed Related to Goal
None

Upload Rubrics/Other Files

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 graduating a B.S. degree in Data Science will demonstrate ethical principles of data science in building data sets and using them in data science applications including machine learning systems

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 collect and/or build a data set that provides equity and fairness, or acknowledge the shortcoming of the data set.

Timeframe for this Outcome
2023 - 2024 and 2024 - 2025

Performance Target for "Met"
70% or more of students in each of DSCI 340, DSCI 440, and DSCI 499 will score at least 3.5 out of 5 on relevant components of the final project assessment rubric.

Performance Target for "Partially Met"
The target will be consider to be partially met, if it is neither met nor not met.

Performance Target for "Not Met"
Less than 60% of students in one of DSCI 340, DSCI 440, and DSCI 499 will score at least 3.5 out of 5 on relevant components of the final project assessment rubric.

Assessment Measure Used
Relevant components of the final project assessment rubric.

Frequency of Assessment
During each offering of DSCI 340, 440, and 499

Data Collected for this Timeframe (Results)
N/A. New outcome. See timeframe above.

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

Comments/Narrative
No comment. This is second year of this program and data have yet to be collected.

Resources Needed to Meet/Sustain Results
We are requesting a tenure-track faculty position to help develop and teach upper-level Data Science courses, as well as support the overall program. Our estimated cost is $94K per year, which includes approximately $72K for salary and $22K for employee benefit.

Explanation of How Resources Will Be Used
he faculty member hired to support the Data Science program will be responsible for the following:

1. Developing and teaching upper-level Data Science courses.
2. Mentoring and advising students majoring in Data Science.
3. Representing the Data Science program at open houses and other admissions events.
4. Ensuring that the information on Lander’s website and catalog regarding the Data Science program is accurate and up-to-date.

5. Developing the necessary tools and rubrics to assess outcomes aligned with Data Science goals.
6. Ensuring that the Data Science program is assessed annually, with data collected from designated courses, analyzed, and reported in the annual assessment report.
7. Regularly reviewing and updating Data Science courses as needed.

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 develop a non-discriminatory system that provides equability and fairness, or acknowledge the shortcoming of the system.

Timeframe for this Outcome
2023 - 2024 and 2024 - 2025

Performance Target for "Met"
70% or more of students in each of DSCI 340, DSCI 440, and DSCI 499 will score at least 3.5 out of 5 on relevant components of the final project assessment rubric.

Performance Target for "Partially Met"
The target will be consider to be partially met, if it is neither met nor not met.

Performance Target for "Not Met"
Less than 60% of students in one of DSCI 340, DSCI 440, and DSCI 499 will score at least 3.5 out of 5 on relevant components of the final project assessment rubric.

Assessment Measure Used
Relevant components of the final project assessment rubric.

Frequency of Assessment
During each offering of DSCI 340. 440, and 499

Data Collected for this Timeframe (Results)
N/A. . See timeframe above.

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

Comments/Narrative
No comment. This is the third year of this program and data have yet to be collected.

Resources Needed to Meet/Sustain Results
We are requesting a tenure-track faculty position to help develop and teach upper-level Data Science courses, as well as support the overall program. Our estimated cost is $94K per year, which includes

approximately $72K for salary and $22K for employee benefit.

Explanation of How Resources Will Be Used
he faculty member hired to support the Data Science program will be responsible for the following:

1. Developing and teaching upper-level Data Science courses.
2. Mentoring and advising students majoring in Data Science.
3. Representing the Data Science program at open houses and other admissions events.
4. Ensuring that the information on Lander's website and catalog regarding the Data Science program is accurate and up-to-date.
5. Developing the necessary tools and rubrics to assess outcomes aligned with Data Science goals.
6. Ensuring that the Data Science program is assessed annually, with data collected from designated courses, analyzed, and reported in the annual assessment report.
7. Regularly reviewing and updating Data Science courses as needed.

Goal Summary

Goal Summary/Comments
There are no results as this is the third year of the program.

Changes Made/Proposed Related to Goal
N/A

Upload Rubrics/Other Files

Dean's Email Address
jyates1@lander.edu

Approved by Dean?
Yes

Signature of Dean
Jennifer R. Yates

Comments from Dean's Review
There are a lot of goals and outcomes in this assessment plan. Particularly due to the small number of enrolled students, the department might consider decreasing the number of goals/outcomes to a more manageable number so that meaningful data might be collected as the program is growing.

Thank you for reviewing and approving this report. The approval and a copy of the report will be emailed to you and the Assessment Coordinator.