Expected Outcome 1: Career preparation
Graduates should have the statistical knowledge and skills appropriate for a range of professional careers or further graduate studies.

Assessment Method 1: Evaluation by advisory committee

Assessment Method Description
Each student is required to complete a final project designed by the student's advisory committee and give an oral presentation. Each member of the advisory committee will individually assess the student's career preparedness, and answer the questions using the following five categories.

Strongly agree: The committee member strongly agrees with the judgment.

Agree: The committee member agrees with the judgment.

Neutral: The committee member is neutral about the judgment.

Disagree: The committee member disagrees with the judgment.

Strongly disagree: The committee member strongly disagrees with the judgment.
Findings

There are 27 evaluations for 9 students.

Question: The student is well-prepared for his/her professional career.
Strongly agree: 15 (56%)
Agree: 10 (37%)
Neutral: 2 (7%)
Disagree: 0 (0%)
Strongly disagree: 0 (0%)

**How did you use findings for improvement?**

More detailed and more meaningful data were obtained.

**Additional Comments**

**Assessment Method 2:** Program evaluation by graduate students

**Assessment Method Description**

Graduating students will be encouraged to complete exit surveys to assess their experience in the doctoral program and, in particular, their level of career preparedness.

The student will answer the questions using the following five categories.

**Strongly agree:** The student strongly agrees with the judgment.

**Agree:** The student agrees with the judgment.

**Neutral:** The student is neutral about the judgment.

**Disagree:** The student disagrees with the judgment.

**Strongly disagree:** The student strongly disagrees with the judgment.
Findings

There are 9 evaluations from 9 students.

Question: The graduate program adequately prepares me for my future career.

Strongly agree: 4 (44%)
Agree: 4 (44%)
Neutral: 1 (11%)
Disagree: 0 (0%)
Strongly disagree: (0%)

**How did you use findings for improvement?**

More detailed and more meaningful data were obtained.

**Additional Comments**

**Expected Outcome 2: Communication skills and statistical consulting**

Graduates should be able to formulate real problems into statistical questions and communicate statistical methods and results to clients with little statistical background, both orally and in writing.

**Assessment Method 1:** Evaluation by advisory committees

**Assessment Method Description**

Each student is required to complete a final project designed by the student's advisory committee and give an oral presentation. Each member of the advisory committee will individually assess the student's communication skills, and answer the questions using the following five categories.

- **Strongly agree:** The committee member strongly agrees with the judgment.
- **Agree:** The committee member agrees with the judgment.
- **Neutral:** The committee member is neutral about the judgment.
- **Disagree:** The committee member disagrees with the judgment.
- **Strongly disagree:** The committee member strongly disagrees with the judgment.

**Findings**

There are 27 evaluations for 9 students.

**Question:**
The student presents the project clearly and with confidence.

- **Strongly agree:** 10 (42%)
- **Agree:** 8 (33%)
Neutral: 5 (21%)
Disagree: 1 (4%)
Strongly disagree: 0 (0%)

Question:
The student can communicate statistical findings with clients/non-statisticians.
Strongly agree: 9 (38%)
Agree: 10 (42%)
Neutral: 2 (8%)
Disagree: 3 (12%)
Strongly disagree: 0 (0%)

**How did you use findings for improvement?**
As a way of training communication skills, a course project was required in most graduate-level statistical courses. Students were required to work in groups on real data analysis, and presented their projects in the end of semester.

**Additional Comments**

**Assessment Method 2:** Program evaluation by graduating students

**Assessment Method Description**
Students will be encouraged to complete exit surveys to assess their experience in the master’s program and, in particular, their communication skills. The student will answer the questions using the following five categories.

Strongly agree: The student strongly agrees with the judgment.

Agree: The student agrees with the judgment.

Neutral: The student is neutral about the judgment.

Disagree: The student disagrees with the judgment.

Strongly disagree: The student strongly disagrees with the judgment.

**Findings**
As a way of training communication skills, a course project was required in most graduate-level statistical courses. Students were required to work in groups on real data analysis, and presented their projects in the end of semester.

**How did you use findings for improvement?**
**Expected Outcome 3: Knowledge and understanding of statistical theory**

Graduates should have an adequate understanding of mathematical basis and foundations of probability and statistics and be able to comprehend related technical content.

**Assessment Method 1:** Evaluation by advisory committees

**Assessment Method Description**

Each student is required to complete a final project designed by the student's advisory committee and give an oral presentation. Each member of the advisory committee will individually assess the student's knowledge and understanding of statistical theory, and answer the questions using the following five categories.

- **Strongly agree:** The committee member strongly agrees with the judgment.
- **Agree:** The committee member agrees with the judgment.
- **Neutral:** The committee member is neutral about the judgment.
- **Disagree:** The committee member disagrees with the judgment.
- **Strongly disagree:** The committee member strongly disagrees with the judgment.

**Findings**

There are 27 evaluations for 9 students.

**Question:**
The student has a clear understanding of statistical concepts.

- **Strongly agree:** 19 (70%)
- **Agree:** 7 (26%)
- **Neutral:** 1 (4%)
- **Disagree:** 0 (0%)
- **Strongly disagree:** 0 (0%)

The student has a solid understanding of theory in Probability and
Statistics.

Strongly agree: 13 (48%)
Agree: 13 (48%)
Neutral: 1 (4%)
Disagree: 0 (0%)
Strongly disagree: 0 (0%)

**How did you use findings for improvement?**

Faculty were asked to use more examples in lecture to illustrate statistical concepts.

**Additional Comments**

**Assessment Method 2:** Program evaluation by graduating students

**Assessment Method Description**

Students will be encouraged to complete exit surveys to assess their experience in the master's program and, in particular, their level of knowledge and understanding of statistical theory. The student will answer the questions using the following five categories.

- Strongly agree: The student strongly agrees with the judgment.
- Agree: The student agrees with the judgment.
- Neutral: The student is neutral about the judgment.
- Disagree: The student disagrees with the judgment.
- Strongly disagree: The student strongly disagrees with the judgment.

**Findings**

There are 9 evaluations from 9 students.

Question:
I have a clear understanding of statistical concepts.

Strongly agree: 2 (22%)
Agree: 7 (78%)
Neutral: 0 (0%)
Disagree: 0 (0%)
Strongly disagree: 0 (0%)
I have a solid understanding of theory in Probability and Statistics.
Strongly agree: 2 (22%)
Agree: 7 (78%)
Neutral: 0 (0%)
Disagree: 0 (0%)
Strongly disagree: 0 (0%)

How did you use findings for improvement?

Faculty were asked to use more examples in lecture to illustrate statistical concepts.

Additional Comments

Expected Outcome 3: Skills on statistical modeling and data analysis

Graduates should have an adequate understanding of common statistical methods and techniques for data analysis and be proficient in at least one statistical software.

Assessment Method 1: Evaluation by advisory committees

Assessment Method Description

Each student is required to complete a final project designed by the student's advisory committee and give an oral presentation. Each member of the advisory committee will individually assess the student's skills on statistical modeling and data analysis, and answer the questions using the following five categories.

Strongly agree: The committee member strongly agrees with the judgment.

Agree: The committee member agrees with the judgment.

Neutral: The committee member is neutral about the judgment.

Disagree: The committee member disagrees with the judgment.

Strongly disagree: The committee member strongly disagrees with the judgment.
Findings

There are 27 evaluations for 9 students.

Question:
The student is familiar with common statistical models and methods.

Strongly agree: 18 (67%)
Agree: 8 (30%)
Neutral: 1 (4%)
Disagree: 0 (0%)
Strongly disagree: 0 (0%)

The student is proficient in a statistical software (SAS, R, or similar)

Strongly agree: 22 (81%)
Agree: 5 (19%)
Neutral: 0 (0%)
Disagree: 0 (0%)
Strongly disagree: 0 (0%)

The student can independently conduct data analysis correctly and thoroughly.

Strongly agree: 16 (59%)
Agree: 8 (30%)
Neutral: 3 (11%)
Disagree: 0 (0%)
Strongly disagree: 0 (0%)

How did you use findings for improvement?

More detailed and more meaningful data were obtained.

Additional Comments
Assessment Method 2: Program evaluation by graduating students

Assessment Method Description

Students will be encouraged to complete exit surveys to assess their experience in the master’s program and, in particular, their skills on statistical modeling and analysis. The student will answer the questions using the following five categories.

Strongly agree: The student strongly agrees with the judgment.
Agree: The student agrees with the judgment
Neutral: The student is neutral about the judgment.
Disagree: The student disagrees with the judgment.
Strongly disagree: The student strongly disagrees with the judgment.

Findings

There are 8 evaluations from 8 students.
Question:
I am familiar with common statistical models and methods
Strongly agree: 5 (63%)
Agree: 3 (27%)
Neutral: 0 (0%)
Disagree: 0 (0%)
Strongly disagree: 0 (0%)

I am proficient in at least one statistical software (SAS, R or similar)
Strongly agree: 3 (27%)
Agree: 5 (63%)
Neutral: 0 (0%)
Disagree: 0 (0%)
Strongly disagree: 0 (0%)

I am confident in analyzing data independently.
Strongly agree: 3 (27%)
Agree: 5 (63%)
Neutral: 0 (0%)
Disagree: 0 (0%)
Strongly disagree: 0 (0%)

How did you use findings for improvement?

More detailed and more meaningful data were obtained.

Additional Comments