

## Statistics Learning Outcomes Assessment Report

**Academic Year:** 2016-2017

**Course:** STAT 411

**Semester:** Fall 2016

**Assessment conducted by:** Jennifer Weeding and Mark Greenwood

**Assessment Results:**

In Fall 2016, we assessed outcomes 4 and 5 on undergraduate mathematics major (statistics option) students in STAT 411 using a signature assignment. Of the eight statistics students in the course, three were assessed as acceptable and two were excellent. The goal of having at least 50% acceptable or excellent was met.

**Comments based on assessment:** None

Learning outcomes and rubric:

Learning Outcome	Unacceptable	Marginal	Acceptable	Excellent
(4) <i>Given a scientific question and information about the study design used to collect data, students will be able to conduct an appropriate statistical analysis</i>	The student fails to recognize any appropriate method for question and data. The implementation does not matter.	The student may recognize the best statistical method or chose a sub optimal but appropriate method, however they implement the method they have chosen incorrectly and arrive at an incorrect answer.	The student does not recognize the best statistical method but chooses one that can be considered reasonable. They implement the method they have chosen correctly and arrive at the correct answer for their method.	The student recognizes the best statistical method to use, chooses the correct approach to analyze the data, and arrives at the correct answer.
(5) <i>Students will be able to explain and interpret the results of a statistical data analysis in a written report, and in a way that is consistent with research question and study design.</i>	Major flaws in terms of the statistical results, scope of inference and vocabulary which invalidate the conclusions or the report is so poorly written that it is very difficult to read and extract the relevant information. The student did not display an understanding of what needed to be done.	There may be flaws in terms of the statistical results, scope of inference, and vocabulary that invalidates some of the conclusions. The student displayed an understanding of what needed to be done but the execution was flawed. The report may ramble and have several writing errors but it is readable.	There may be minor flaws in terms of the statistical results, scope of inference, and vocabulary, but nothing that invalidates the conclusions. It may not be concise and it may have several writing errors but overall it is easily readable.	The report is clear and concise. It is correct in terms of the statistical results, scope of inference, and vocabulary. It has minimal writing errors (grammar, spelling, etc.)

## Statistics Learning Outcomes Assessment Report

**Academic Year:** 2016-2017

**Course:** STAT 412

**Semester:** Spring 2017

**Assessment conducted by:** Mark Greenwood

**Assessment Results:**

In Spring 2017, we assessed outcomes 4 and 5 on undergraduate mathematics major (statistics option) students in STAT 412 using a signature assignment. Of the thirteen statistics students in the course, five were assessed as acceptable and four were excellent. The goal of having at least 50% acceptable or excellent was met.

**Comments based on assessment:** None

Learning outcomes and rubric:

Learning Outcome	Unacceptable	Marginal	Acceptable	Excellent
(4) <i>Given a scientific question and information about the study design used to collect data, students will be able to conduct an appropriate statistical analysis</i>	The student fails to recognize any appropriate method for question and data. The implementation does not matter.	The student may recognize the best statistical method or chose a sub optimal but appropriate method, however they implement the method they have chosen incorrectly and arrive at an incorrect answer.	The student does not recognize the best statistical method but chooses one that can be considered reasonable. They implement the method they have chosen correctly and arrive at the correct answer for their method.	The student recognizes the best statistical method to use, chooses the correct approach to analyze the data, and arrives at the correct answer.
(5) <i>Students will be able to explain and interpret the results of a statistical data analysis in a written report, and in a way that is consistent with research question and study design.</i>	Major flaws in terms of the statistical results, scope of inference and vocabulary which invalidate the conclusions or the report is so poorly written that it is very difficult to read and extract the relevant information. The student did not display an understanding of what needed to be done.	There may be flaws in terms of the statistical results, scope of inference, and vocabulary that invalidates some of the conclusions. The student displayed an understanding of what needed to be done but the execution was flawed. The report may ramble and have several writing errors but it is readable.	There may be minor flaws in terms of the statistical results, scope of inference, and vocabulary, but nothing that invalidates the conclusions. It may not be concise and it may have several writing errors but overall it is easily readable.	The report is clear and concise. It is correct in terms of the statistical results, scope of inference, and vocabulary. It has minimal writing errors (grammar, spelling, etc.)