

## **Student Learning Outcomes**

### **Undergraduate**

#### **Mathematics**

##### **Foundational Knowledge and Information Literacy**

1. Students will demonstrate knowledge of basic mathematical and statistical concepts, including calculus, linear algebra, analysis, modern algebra, probability, and statistics.
2. Students will demonstrate the ability to locate, evaluate, and effectively use information sources, including appropriate use of technology to apply algorithms and perform mathematical computations.

##### **Critical Thinking**

3. Students will demonstrate the ability to think critically and apply mathematical and statistical knowledge and reasoning to model and solve problems.
4. Students will demonstrate the ability to construct and interpret logical arguments, including mathematical proofs.

##### **Thoughtful Expression and Inquiry**

5. Students will demonstrate the ability to engage in rigorous mathematical inquiry and express mathematical ideas and results clearly and effectively, both orally and in writing.
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#### **Statistics**

##### **Foundational Knowledge and Information Literacy**

1. Students will demonstrate knowledge of basic mathematical and statistical concepts, including use of appropriate statistical procedures and methods.
2. Students will demonstrate the ability to locate, evaluate, and effectively use information sources, including appropriate use of statistical software and computerized data management.

##### **Critical thinking**

3. Students will demonstrate the ability to think critically and apply mathematical and statistical knowledge and reasoning to model and solve problems.
4. Students will demonstrate the ability to interpret output from statistical software and draw appropriate conclusions.

##### **Thoughtful Expression and Inquiry**

5. Students will demonstrate the ability to engage in rigorous statistical inquiry and express statistical ideas and results clearly and effectively, both orally and in writing.

## **Graduate**

### **Mathematics**

#### **Foundational knowledge**

1. Students will have a broad understanding of mathematics/statistics.
2. Students will be able to use technology appropriately.

#### **Information literacy**

3. Students will possess a familiarity with the language of mathematics and statistics.

#### **Critical Thinking**

4. Students will have an ability to apply sound mathematical reasoning and/or statistical analysis to solve problems.
5. Students will be able to construct and interpret logical arguments.

#### **Thoughtful expression**

6. Students will be able to read, write, discuss, and speak about mathematics and/or statistics effectively.

#### **Teamwork**

7. Students will have developed the ability to work both independently and collaboratively.

### **Statistics Certificate**

#### **Foundational knowledge**

1. Students will be able to select appropriate statistical methodologies which balance the technical and practical aspects of real-world applications of statistics.
2. Students will be able to properly implement statistical methodologies to ensure that data-based inferences and decisions are based on sound statistical principles.

#### **Information literacy**

3. Students will possess a familiarity with the language of statistics.

#### **Critical Thinking**

4. Students will have an ability to apply sound statistical analysis to solve problems.

#### **Thoughtful expression**

5. Students will be able to report the results of statistical investigations so that they are understandable to a variety of audiences.