

**Statistics Content Learning Outcomes  
From April 2014 Fac2Fac Conference**

**Learning Outcome 1**

**Descriptive Statistics**

*Students should be able to:*

- Compute and interpret measures of center and spread of data
- Construct and analyze graphical displays to summarize data.

**Learning Outcome 2**

**Probability**

*Students should be able to:*

- Utilize basic concepts of probability including independence and conditional probability to calculate, interpret and communicate event probabilities.

**Learning Outcome 3**

**Discrete and continuous probability distributions**

*Students should be able to:*

- Determine the appropriate probability distribution based on experiment conditions and assumptions (including the uniform, normal, and binomial distributions)
- Calculate, interpret and communicate probabilities.

**Learning Outcome 4**

**Correlation and Regression**

*Students should be able to:*

- Calculate, interpret and communicate the correlation coefficient and simple linear regression equation.

**Learning Outcome 5**

**Sampling distributions**

*Students should be able to:*

- Calculate, interpret and communicate probabilities involving the sample mean using the CLT.

**Learning Outcome 6:**

**Inference**

*Students should be able to:*

- Calculate, interpret and communicate confidence intervals
- Perform, interpret and communicate (the basic components of) hypothesis tests for one and two samples.

**Learning Outcome 7**

**Data collection/experiment design**

*Students should be able to:*

- Identify and evaluate common sampling techniques and experimental designs including sources of bias.

**Recommendations from the [Colorado Math Pathways Task Force](#) – May 2015**

▪ **StatPath**

- Use the existing Intro to Statistics content
- Encouraging using modeling as an approach for the course
- Students should be able to take Intro to Stats without a credit-bearing pre-requisite
  - No college-level math pre-requisites are necessary, e.g., College Algebra
  - Enter the course when college ready (that is, have completed remedial if needed, like MAT 050: Quantitative Literacy)