MATH 201 - Statistics I
Fall 2023

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Office Hours: Monday – Thursday, 2:00 – 3:30, or send me an email and set up a time.

Required Text – OpenStax – Statistics (sponsored by Rice University). Go online to openstaxcollege.org – donate $15 to the foundation.

Course Description – This course provides a fundamental understanding of basic probability and statistics. You will learn the methods and theory behind commonly used statistics so that you can apply them in a business setting. As an aid in statistical analysis we will utilize computer techniques.

Excel: all the statistical functions you will need are under **"Data"** menu, out to the right is **"Data Analysis".** If this doesn't appear in your version of Excel then do the following steps to add the functionality:

Go under "File"/ "Options", then click on "Add-ins" on the lefthand side of the screen. On the same screen you will see "Analysis Toolpack" over to the right side. Click that and then click "GO" below. **NOTE: do not click "OK" on this screen.** After you click "GO", then another screen will appear, make sure the "Analysis Toolbox" box is checked and then click "OK". When you return to the main screen, the "Data Analysis" button will magically appear under the "Data" menu.

Evaluation and Grading Policy

Two Exams worth 40%
HW projects worth 50%
Participation 10%

The sum of the weighted values will be translated into a final grade as follows:

92 - 100 .....A
89 - 91 .....A-
85 - 88 .....B+
80 - 84 .....B
78 - 79 .....B-
75 - 77 .....C+
70 - 74 C
66 - 69 .....C-
60 - 65 .....D
59 and below.....F

Attendance Policy - absence is discouraged because concepts in this course build upon earlier concepts and so continuity must be maintained. Make-up exams will typically be more difficult than the original.

General Education Program: At Bryant University, the General Education Program goes a step beyond the typical disciplines and skills to prepare students to make a social impact by engaging students with the United Nations' Sustainable Development Goals (SDGs), using these as a lens to introduce students to local and global needs to improve people's lives. Students will gain insight into how to take on broad workplace challenges, culminating in addressing a concrete problem in the Gen Ed Capstone.

This course will look at small datasets and emphasize the following goals (SDG) through the use of problem-solving and critical thinking:

- Good health and well-being
- Gender equality
- Climate action

Tentative Course Outline

Section 1 – Data Collection and Descriptive Statistics

- Sampling
- Organizing Data
- Descriptive Statistics

Section 2 – Probability

- Counting Rules
- Unions and Intersections
- Conditional Probability
- Discrete Probability

Section 3 – Continuous Distributions

- Normal Distribution
- Uniform Distribution
- Sampling Distributions
- Statistical Inference

EXAM I

Section 4 – Confidence Intervals

- Confidence Intervals for means
- Confidence Intervals for proportions
- Hypothesis Testing

Section 5 – Two Samples

- Two-Sample Confidence Intervals for means
- Two-Sample Confidence Intervals for proportions
- Two-Sample Hypothesis Testing

Section 6 - Regression

- Linear Regression
- P-values and R-squared
- Multiple Regression
- Project

EXAM II