



Statistical Methods

MAT 220 – Wesleyan College

Syllabus

Summer 2024, June 24 - July 26

Professor Contact Information

Professor: TBA

Office Hours: *By appointment.*

Contact Information: TBA

Text/ISBN: Triola, *Elementary Statistics*, Pearson Publishing, 13th Edition

*You will need to purchase an access code for MyStatLab and StatCrunch. This comes with an e-book, so it is optional to purchase the physical textbook. The price of a single semester access code for the online homework and the StatCrunch software is about \$102.99 or more.

Policies and Procedures

Course Goals

This course is designed to be an introduction to basic principles of measurement, data collection and analysis. Topics include data distributions, preparation of tables and graphs, descriptive statistics (measures of variability, center and association), and statistical inference (sampling distributions, estimation, and hypothesis testing).

Prerequisites

MAT 126, 130, 140, 192, or equivalent placement.

Credit Hours: 3

Participation and Grading

Your grade in this course will be determined by your performance in the following categories:

Assignments	Percentage
Online Homework	15%
Written Assignments	25%
Midterm Exam	30%
Final Exam	30%
Total	100%



Grading Scale:

The grading scale in the class will be as follows:

- A=90-100%
- B=80-89%
- C=70-79%
- D=60-69%
- F=59% And Below

Academic Integrity

Wesleyan's College expects student to show integrity in all of their work. Cheating, plagiarism, unauthorized collaboration, inventing or falsifying information, turning in work for more than one class without authorization, or helping someone else are all violations of the Honor Code and are not tolerated. Any of these forms of cheating will not be tolerated and will be grounds for a grade of zero on the exam or assignment and a grade of F for the course, in addition to any penalties imposed by the Provost.

Potential Changes to Course Schedule

The following week-to-week schedule is a general plan for the course. Deviations may be necessary and will be announced in advance via announcement and/or e-mail. Students should check their course site announcements and emails at least once every twenty-four hours throughout the term to watch for updates regarding this course.

Course Schedule

Week 1

Describing data

- 1.1: Statistical & Critical Thinking
- 1.2: Types of Data
- 1.3: Collecting Sample Data
- 2.1: Frequency Distributions for Organizing and Summarizing Data
- 2.2: Histograms
- 2.3: Graphs that Enlighten & Graphs that Deceive
- 2.4: Scatterplots, Correlation, and Regression
- 3.1: Measures of Center
- 3.2: Measures of Variation

Week 2

Describing data and basic probability

- 3.3: Measures of Relative Standing and Boxplots
- 4.1: Basic Concepts of Probability
- 4.2: Addition Rule & Multiplication Rule
- 4.3: Complements, Conditional Probability, and Bayes' Theorem
- 4.4: Counting
- 5.1: Probability Distributions



- 5.2: Binomial Probability Distribution
- 5.3: Poisson Probability Distributions

Week 3

Probability and Normal Distribution

MIDTERM EXAM (CH 1 – 5)

- 6.1: The Standard Normal Distribution
- 6.2: Real Applications of the Normal Distribution
- 6.3: Sampling Distributions & Estimators
- 6.4: The Central Limit Theorem
- 7.1: Estimating a Population Proportion
- 7.2: Estimating a Population Mean

Week 4

Estimation, test of hypotheses

- 8.1: Basics of Hypothesis Testing
- 8.2: Testing a Claim About a Proportion
- 8.3: Testing a Claim About a Mean
- 9.1: Two Proportions
- 9.2: Two Means: Independent Samples
- 9.3: Two Dependent Samples (Matched Pairs)

Week 5

Regression

- 10.1: Correlation
- 10.2: Regression

FINAL EXAM (CH 6 – 10)

Civility in the Academic Community

Students, faculty, and staff are expected to treat one another with respect in all interactions. In the classroom, rude, disruptive and/or disrespectful behaviors as determined by a faculty member interfere with other students' rights and with the instructor's ability to teach. Therefore, any student exhibiting unacceptable behaviors during a class will be asked to leave and will be counted absent for that class period. Failure to cooperate with this process will result in disciplinary action that may include withdrawal from the class or dismissal from the College. Violations will be reported to the Provost's Office.

Disabilities Statement

Wesleyan College is committed to equal education, full participation and access to facilities for all students. Any student who requires reasonable academic accommodations, use of auxiliary aids or facility access for a class must first register with Disability Resources by contacting Jill Amos, Director of Disability and Advocacy Services, jamos@wesleyancollege.edu or (478) 757-5219. If reasonable accommodations are established, students should request Accommodation Letters from Disability Resources then schedule an appointment to meet with the professor to determine how the accommodations will be implemented for each class as early in the semester as



possible. Accommodations require advance notice to implement and will not be retroactively administered for the semester. Accommodations that decrease the integrity of a course will not be approved.