

Arcadia University  
Fall 2021  
MA 141, Elementary Statistics  
Taylor 316 – MWF 11:00-12:05

**Instructor:** Thomas Lever

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**Office:** Boyer 309

**Office Hours:** Tuesday/Thursday 10:30-11:30 or by appointment

**Prerequisite:** placement exam or successful completion of MA 095

**Credits:** 4 credits

#### Course Materials:

**Textbook:** *Elementary Statistics*, 13<sup>th</sup> edition, by Mario F. Triola; Pearson, Addison Wesley  
ISBN-13: 978-0134462455

**Calculator:** A TI-84+ (or TI-83) calculator is required. If you don't already own one, you may rent one at [www.rentacalc.com/ti-84-plus-graphing-calculators.html](http://www.rentacalc.com/ti-84-plus-graphing-calculators.html) for \$6.95 per month with the first month free. Shipping is free. There is a fully refundable deposit.

#### Course Description:

This is a basic course in the principles and techniques of statistics. The course will treat descriptive and inferential statistics. Topics to be covered include classification of data, probability theory, measures of central tendency, measures of dispersion, normal distribution, population parameters, testing hypotheses, analysis of variance, and correlation and regression.

#### Learning Outcomes:

Upon successfully completing this course, students will be able to:

1. Use critical thinking skills to evaluate the design and results of surveys and experiments.
2. Identify data types and the methods for collecting data.
3. Interpret and identify tables and graphs.
4. Calculate the measures of center, variation, and relative standing for quantitative data.
5. Calculate probabilities using addition, multiplication, conditional probability, complements, and counting rules.
6. Calculate statistics and probabilities for normal and discrete distributions, including the binomial distribution.
7. Determine sample size and confidence intervals for population parameters.
8. Estimate and test claims for population parameters.
9. Describe and model data using correlation coefficients and regression analysis.
10. Analyze categorical data goodness-of-fit and contingency tables using Chi-Square tests.
11. Test the equality of three or more independent means using one-way ANOVA.

#### Grading Breakdown:

Homework (20 %)

Four tests (50 %)

Final exam (20 %)

Group Work & Participation (10 %)

\* *This break-down of grades is tentative and subject to change with ample notice.*

### Classroom Expectations:

1. I expect you to be a good classroom citizen and a full participant in the course. Turn off your phone and other distractions. If attending via Zoom, find a quiet place to work, keep your camera turned on so we can see you, but mute your audio when you're not speaking.
2. Read the textbook and do the practice exercises regularly. You can't learn Math by cramming the night before an exam. An average student should spend at least two hours outside of class for every hour in class.
3. Submit homework and group assignments by their due dates. Homework is essential to your understanding and your ability to use the material – keep up with it!
4. Ask questions in class, before or after class, during office hours, or via email when you don't understand a concept, a technique, or an answer. You can also contact the Learning Resource Network (LRN) for free tutoring help.
5. Make every effort to attend every class. Arriving more than 10 minutes late, doing unrelated activities during class time, or leaving early will count as absence. If you miss more than 15% of classes, your highest possible course grade will be "B". If you miss more than 30%, your highest possible grade will be "C".
6. There are no make-up exams. However, if you have a conflict on a testing day and consult your instructor in advance, it may be possible to make other arrangements.
7. If you miss a test, your lowest test score will count twice, and your highest possible course grade will be "C". You will receive a zero for each additional test missed.
8. I will post class notices on Canvas which can forward them to your phone or send them to your student email account. It is your responsibility to check these resources frequently.

### Health and Safety:

If an individual in the class tests positive for COVID, the University will contact people who were in close proximity to that person for an extended period of time. In our class, we will frequently work in small groups. Maintaining the same individuals in these groups throughout the semester will facilitate contact tracing. Please work with the same group of students consistently during the semester.

Masking requirements can fluctuate during the semester based on changes in the pandemic. Please follow current University mask requirements. When required to wear a mask, use it to cover your nose and mouth; do not come to class without wearing it properly.

### Remote Attendance:

Unless you make other arrangements in advance, you are expected to attend classes in person. The class will be accessible via Zoom for students who are not on campus. In cases of illness or other emergency, you may request short-term access to Zoom or class recordings from your instructor.

To support the health and safety of Arcadia community members, please do not attend class for any of the following reasons and contact Student Health Services for assistance:

- A positive test for COVID
- Assignment to quarantine or isolation
- You feel unwell
- Notification or personal awareness that you may have been exposed to a person with COVID

Changes in the pandemic could result in shifts by the University to remote learning. Because of the availability of the vaccine and our capacity for COVID testing, such changes would likely be for short periods of time. Decisions will be made based on changes in our environment, and local, state, and national guidance.

### Tutoring:

Free tutoring is available in the LRN. Also join the Virtual LRN. You can self-enroll using this URL: <https://arcadia.instructure.com/enroll/476LYR>. Instructions for requesting a tutor, updates, schedules, and other academic support resources are posted there.

Code of Academic Responsibility:

This code may be found here:

<https://www.arcadia.edu/faculty-handbook/6000-course-policies-procedures-and-resources/6004-code-academic-responsibility>

Violations of this code are handled as described here:

<https://www.arcadia.edu/faculty-handbook/6000-course-policies-procedures-and-resources/6005-violations-code-academic>

Academic Support:

Tutoring is available from the [Learning Resource Network](#). Their web page explains the process for joining the Virtual LRN and scheduling appointments.

Disability statement:

Arcadia University provides reasonable accommodations for students with documented disabilities. If you require accommodations or other academic supports due to a physical, psychological, psychiatric or learning disability, you should contact Disability Support Services at (215) 572-4033.

Title IX Statement:

"Arcadia University is committed to providing a learning, living, and working environment that is free from discrimination. The University has a [Policy Prohibiting Sexual Misconduct, Relationship Violence, and Stalking](#) detailing our commitment to preventing and addressing such behavior. I understand the impact that sexual harassment and sexual misconduct can have and am committed to doing my part to foster an environment that is safe and equitable.

Please know that all faculty on campus are mandatory reporters. This means that if you disclose an experience of sexual harassment or sexual misconduct to me outside of a classroom discussion, a writing assignment, or a University-approved research project, I must share what you reported to me with Arcadia's Title IX Coordinator. This does not mean that you will have to pursue an investigation or go through a grievance process. Even if you do not choose these options, the Title IX Office can provide supportive measures and other resources to you.

If you or someone you know has experienced sexual harassment or sexual misconduct, please know that you are not alone. If you would like to speak to someone confidentially, confidential resources are provided on the [Office of Equity and Civil Rights](#) website."

## MA 141 – Tentative Course Schedule

Week of	Sections	Topics
August 30	1-1 thru 1-3 2-1 thru 2-3	Sampling, variation, levels, and experiments Frequency distributions, histograms, and graphs
Sept 8 (W-F)	3-1 and 3-2 3-3	Measures of center and variation Measures of relative standing and boxplots
Sept 13	<b>TEST #1</b> 4-1	<b>Chapters 1 thru 3</b> Probability concepts
Sept 20	4-2 4-3	Probability: addition and multiplication rules Complements and conditional probability
Sept 27	4-4 5-1	Counting, permutations and combinations Random variables and probability distributions
Oct 4	5-2 <b>TEST #2</b>	Binomial distributions <b>Chapters 4 and 5</b>
Oct 11	6-1 and 6-2 6-3 and 6-4	Standard normal distribution and applications Sampling Distributions and the Central Limit Theorem
Oct 18	7-1 7-2 and 7-3	Confidence interval for population proportion Confidence interval for mean and standard deviation
Oct 27 (W-F)	<b>TEST #3</b> 8-1	<b>Chapters 6 and 7</b> Basics of hypothesis testing
Nov 1	8-2 8-3	Comparing a population proportion to a claimed value Comparing a population mean to a claimed value
Nov 8	8-4 9-1	Comparing a population variance to a claimed value Comparing proportions from two populations
Nov 15	9-2 and 9-3 10-1 and 10-2	Comparing means from two populations Correlation and Regression
April 13	11-1 11-2	Goodness of fit Test of independence
Dec 6	12-1 <b>TEST #4</b>	Analysis of Variance (ANOVA) <b>Chapters 9 thru 12</b>
Dec 13 (M)		Course review
Dec 17 (F)	<b>FINAL EXAM</b>	<b>Comprehensive</b>