



## MATH 1342 - Elementary Statistical Methods MATH 1342.103 Course Syllabus

### Description

Collection, analysis, presentation and interpretation of data, and probability. Analysis includes descriptive statistics, correlation and regression, confidence intervals and hypothesis testing. Use of appropriate technology is recommended.

### Semester Offered

Fall

Winter

Spring

May

Summer

Credits 3

Lecture Hours 3

Lab Hours 0

Extended Hours 0

Contact Hours 48

State Approval Code 27.0501.51 19

Instructor Name Marie Graham

Semester/Year Spring 2025

### Meeting Time and Location

MWF 11:15a-12:05p @ Monk 1302

### Alternate Operations During Campus Closure

In the event of an emergency or announced campus closure due to a natural disaster or pandemic, it may be necessary for Panola College to move to altered operations. During this time, Panola College may opt to continue delivery of instruction through methods that include, but are not limited to: online learning management system (CANVAS), online conferencing, email messaging, and/or an alternate schedule. It is the responsibility of the student to monitor Panola College's website ([www.panola.edu](http://www.panola.edu)) for instructions about continuing courses remotely, CANVAS for each class for course-specific communication, and Panola College email for important general information.

### Student Basic Needs

Unexpected circumstances may arise, but Panola College offers various resources to support students. If you need mental health services or are facing challenges with transportation, affording class materials and supplies, or accessing food regularly—issues that may impact your class performance—please visit [panola.edu/resources](http://panola.edu/resources).

### Class Attendance

Regular and punctual attendance of classes and laboratories is required of all students. When a student has been ill or absent from class for approved extracurricular activities, he or she should be allowed, as far as possible, to make up for the missed work. If a student has not actively participated by the census date, they will be dropped by the instructor for non-attendance. This policy applies to courses that are in-person, online, hybrid, and hyflex.

Attendance in online courses is determined by submission of an assignment or participation in an activity. According to federal guidelines, simply logging into a distance learning course without participating in an academic assignment does not constitute attendance. Distance learning is defined as when a majority (more than 50%) of instruction occurs when the instructor and students are in separate physical locations. Students must engage in an academic activity prior to the course census date.

When an instructor feels that a student has been absent to such a degree as to invalidate the learning experience, the instructor may recommend to the Vice President of Instruction that the student be withdrawn from the course. Instructors may seek to withdraw students for non-attendance after they have accumulated the following number of absences:

Fall or spring semesters:

3 or more class meeting times per week - 5 absences

2 class meeting times per week - 3 absences

1 class meeting per week - 2 absences

The student is responsible for seeing that he or she has been officially withdrawn from a class. A student who stops attendance in a class without officially withdrawing from that class will be given a failing grade; consequently, the student must follow official withdrawal procedures in the Admissions/Records Office.

Please note: Health Science and Cosmetology courses may require more stringent attendance policies based on their accreditation agencies. Please see the addendum and/or program handbook for further information concerning attendance.

### **Pregnant/Parenting Policy**

Panola College welcomes pregnant and parenting students as a part of the student body. This institution is committed to providing support and adaptations for a successful educational experience for pregnant and parenting students. Students experiencing a need for accommodations related to pregnancy or parenting will find a Pregnancy and Parenting Accommodations Request form in the Student Handbook or may request the form from the course instructor.

### **Artificial Intelligence (AI) Course Policy**

There are situations throughout the course where you may be permitted to use artificial intelligence (AI) tools to aide in further understanding of mathematical concepts. However, AI tools may not be used for any graded assignments including but not limited to exams, quizzes, and projects. Use of any AI-generated content in this course without the instructor's consent qualifies as academic dishonesty and violates Panola College's standards of academic integrity.

### **Student Learning Outcomes**

**Critical Thinking Skills – to include creative thinking, innovation, inquiry and analysis, evaluation and syntheses of information**

- CT2: Gather and assess information relevant to a question
- CT3: Analyze, evaluate, and synthesize information

**Communication Skills – to include effective development, interpretation, and expression of ideas through written, oral, and visual communication**

- CS1: Develop, interpret, and express ideas through written communication

**Empirical and Quantitative Skills – to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions**

- EQS1: Manipulate and analyze numerical data and arrive at an informed conclusion

### **Instructional Goals and Purposes**

The purpose of this course is to develop critical thinking skills, help students learn to analyze and interpret different charts and graphs that they might encounter in newspapers, magazines, and online information sites, and help students improve their decision making skills. Since many degree plans call for "College Algebra or higher", Statistics (Math 1342) will work as the math requirement in many degree plans.

## Learning Outcomes

After studying all materials and resources presented in the course, the student will be able to:

1. Explain the use of data collection and statistics as tools to reach reasonable conclusions.
2. Recognize, examine and interpret the basic principles of describing and presenting data.
3. Compute and interpret empirical and theoretical probabilities using the rules of probabilities and combinatorics.
4. Explain the role of probability in statistics.
5. Examine, analyze and compare various sampling distributions for both discrete and continuous random variables.
6. Describe and compute confidence intervals.
7. Solve linear regression and correlation problems.
8. Perform hypothesis testing using statistical methods.

## Course Content

A general description of lecture/discussion topics included in this course are listed in the Learning Objectives / Specific Course Objectives sections of this syllabus.

Students in all sections of this course will learn the following content:

1. Define and/or explain the concepts of vocabulary, terminology, and notation used in this course.
2. Create a frequency distribution from a set of data, and draw a histogram from this table. Perform analysis of histograms.
3. Create a pie graph, a pareto chart, a scatter-plot, and a stem and leaf plot from a set of data, either by hand or using statistical software. Perform analysis of different charts constructed.
4. Compute mean, median, mode, midrange, variance, and standard deviation of data sets. Compare and contrast the measures of center.
5. Compute the z-score and percentile of a given score of data sets.
6. Compute the probabilities of simple and compound events. Use critical thinking to interpret the results.
7. Summarize the results of a probability procedure in a probability distribution. Calculate the mean, variance, and standard deviation of a probability distribution.
8. Find the probabilities associated with binomial distributions. Find the mean, variance, and standard deviation of a binomial distribution.
9. Find the probabilities associated normal distributions.
10. Construct a confidence interval for mean, proportion, and standard deviation and use critical thinking to interpret the results. Determine the sample size necessary to estimate the mean, proportion, and variance.
11. Test a hypothesis about a mean, proportion, and standard deviation and use critical thinking to interpret the results.
12. Find the linear correlation coefficient, perform a hypothesis test for linear correlation, and find the equation of the regression line of a linearly correlated set of data. Use critical thinking to interpret the results.

## Methods of Instruction/Course Format/Delivery

Methods of Instruction/Course Format/Delivery: Methods employed will include Lecture/demonstration have discussion, problem solving, analysis, and reading assignments. Homework will be assigned. Faculty may choose from, but are not limited to, the following methods of instruction:

1. Lecture
2. Discussion
3. Internet
4. Video
5. Television
6. Demonstrations
7. Field trips
8. Collaboration
9. Readings

## Major Assignments/Assessments

The following items are assigned and assessed during the semester and used to calculate the student's final grade.

### Assignments

Faculty may assign both in- and out-of-class activities to evaluate students' knowledge and abilities.

Faculty may choose from – but are not limited to -- the following methods attendance, class preparedness and participation. Collaborative learning projects, exams/tests/quizzes, homework, internet, library assignments, readings, research papers, scientific observations, student-teacher conferences, and written assignments.

### Assessments

1. Daily Grades
2. Exam per two or three Chapters
3. Comprehensive Final Exam

Mathematics Department does not accept late work.

### Course Grade

#### Assignment Weights

- Daily Grades 25%
- Major Exams 50%
- Comprehensive Final Exam 25%

### Letter Grades for the Course will be assigned as follows:

A:  $90 \leq \text{Average} < 100$

B:  $80 \leq \text{Average} < 90$

C:  $70 \leq \text{Average} < 80$

D:  $60 \leq \text{Average} < 70$

F:  $0 \leq \text{Average} < 60$

### Texts Materials, and Supplies

- Textbook: Introductory Statistics by OpenStax, 2016, iBook ISBN-13: 978-1-938168-29-1
- The free OpenStax Introductory Stat eBook is accessible to students through Canvas.
- Canvas Access
- StatCrunch Access
- StatCrunch is a Web-based statistical software application from Pearson Education. Pay for access to StatCrunch is included with course fees.
- Scientific Calculator (Optional)

### Other

- Courses conducted via video conferencing may be recorded and shared for instructional purposes by the instructor.
- For current texts and materials, use the following link to access bookstore listings: <https://www.panolacollegestore.com>.
- For testing services, use the following link: <https://www.panola.edu/student-services/student-support/academic-testing-center>.
- If any student in this class has special classroom or testing needs because of a physical learning or emotional condition, please contact the ADA Student Coordinator in Support Services located in the Charles C. Matthews Student Center or go to <https://www.panola.edu/studentservices/student-support/disability-support-services> for more information.

- Withdrawing from a course is the student's responsibility. Students who do not attend class and who do not withdraw will receive the grade earned for the course.
- Student Handbook: <https://www.panola.edu/> (located on at the bottom under student)