Statistical Methods ~ MATH-1342-002
M W 9:00 – 10:45   AG105
Fall 2023 Course Syllabus

Instructor: Rebecca Darby
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Blackboard: https://southplainscollege.blackboard.com

Office Hours: As listed below or by appointment.

	Monday	Tuesday	Wednesday	Thursday	Friday
Levelland Campus (M109)	8:30 - 9:00	8:30 - 9:30	8:30 - 9:00	8:30 - 9:30	
	11:00 - 12:00		11:00 - 12:00		
Virtual					9:00 - 12:00

Course Modality: **Fully Face-to-Face** ~ In this course, classes will be held face-to-face, twice a week in a classroom, specifically Mondays and Wednesdays in Room AG105.

Textbook: **NO TEXTBOOK IS REQUIRED FOR THIS COURSE!!** All resources for the course, including the textbook, assignments, etc., are available on Blackboard.

Supplies: You will need pencils, notebook paper, a calculator, and a folder or binder. A graphing calculator is very useful in Statistics but not necessary. I recommend either a non-graphing calculator such as a TI-30XIIS or a graphing calculator such as a TI-84. **Calculators on cell phones or other electronic devices are not allowed**.

You will need access to a working computer with reliable internet access. All homework will be submitted on Blackboard. It is permissible to submit photos of your work but creating pdfs of your homework and uploading those is the best way to ensure a clear, easy to read/grade document. There are several methods/apps for doing this. A couple of popular apps are CamScanner and Genius Scan.

Blackboard: All information and resources needed for this course are available on Blackboard. The syllabus, instructor contact information, and all course resources including the textbook, assignments, etc. are stored there. Assignments due dates and exam dates are posted on the Blackboard calendar. I'll be posting your grades in the gradebook on Blackboard so that is where you can see what your grade is in the course at any time. You should get into the habit of checking Blackboard daily for pertinent information.

Important Dates: **Classes begin on August 28th**. Other important dates are listed below.
- **September 4**   Labor Day
- **November 22-24**   Thanksgiving Holiday
- **November 30**   Last day to drop Fall semester courses
- **December 13**   Final Exam

Homework   Homework will be assigned regularly and each assignment must be submitted on the day that it is due. Homework will be submitted on Blackboard. A penalty will be assessed for late homework.

Exams: There will be four unit exams given during the semester and a comprehensive, departmental final exam given at the end of the semester. There are no exemptions for the final exam. If you are going to miss a unit exam, contact your instructor immediately, preferably prior to the exam. Makeup exams are given only under extremely rare and documented circumstances. Once you begin an exam, you cannot leave the room until the exam is submitted for grading.

Grading Scheme: Your grade in the course will be comprised of scores from the following categories. **This course and its grade will be recorded on your official transcript.** Grades will be posted on Blackboard throughout the semester.

- Exams (Each exam will count 16% for a total of 64%). The following exam dates are tentative. Any changes to these dates will be announced in class.
  - Exam 1 ~ Wednesday, September 20
  - Exam 2 ~ Monday, October 16
  - Exam 3 ~ Wednesday, November 8
  - Exam 4 ~ Monday, December 4
- Homework (16%)
- Comprehensive Final Exam (20%) ~ Wednesday, December 13 @ 8:00 AM

Where to Get Help: Math can be challenging occasionally. Here are some ways in which you can receive quality assistance.

- As your instructor, I am the best resource for providing assistance. I am available during my office hours (both virtual and walk-in) and by appointment.

- **SPC Tutors** ~ Tutoring is <u>FREE</u> for all currently enrolled students. Make an appointment or drop-in for help at any SPC location or online! Visit the link below to learn more about how to book an appointment, view the tutoring schedule, get to know the tutors, and view tutoring locations.
  http://www.southplainscollege.edu/exploreprograms/artsandsciences/teacheredtutoring.php

- **Tutor.com** ~ You also have <u>180 FREE minutes</u> of tutoring with tutor.com each week, and your hours reset every Monday morning. Log into Blackboard, click on the tutor.com link on the left-hand tool bar, click on the tools option from the left-hand menu bar. Then, click on the Tutor.com link and you will automatically be logged in for free tutoring. You can access tutor.com tutors during the following times:
  - Monday – Thursday: 8pm-8am
  - 6pm Friday – 8am Monday morning

Responsibilities
& Expectations:

1. Attend class regularly, be on time, and be prepared to learn.
2. Be attentive, take notes, and fully participate in class.
3. **DO ALL HOMEWORK.** Fully invest yourself in the homework process so that you can maximize your potential to be successful in the course. Do your own work, show all work, and complete the homework early enough that you can seek help if needed. <u>Always</u> <u>turn in your homework on time</u>.
4. Food, drink, and tobacco products are not allowed in class, with the exception of bottled water.
5. Cell phones and any other electronic devices must be silenced and put away while you're in the classroom.
6. Reasonable standards of decency apply to the college community. The student should dress in a manner that does not distract from the academic atmosphere. Revealing attire or clothing carrying obscene or offensive slogans is not permitted. In all academic buildings, classrooms, offices, the Student Center, and dining facilities, students are required to wear shirts and shoes. Refrain from using offensive language, talking loudly or off-topic, or working on outside assignments.
7. Be respectful to others in the classroom and assist in maintaining an optimum learning environment for all. Any student who disrupts the learning environment will be asked to leave and may be dropped from the course.

South Plains College
Common Course Syllabus: MATH 1342
Revised July 2023

Department: Mathematics, Engineering, and Computer Science

Discipline: Mathematics

Course Number: MATH 1342

Course Title: Statistical Methods

Available Formats: conventional, hybrid, and internet

Campuses: Levelland, Downtown Center, Plainview Center, and Dual Credit

Course Description: Collection, analysis, presentation and interpretation of data, and probability. Analysis includes descriptive statistics, correlation and regression, confidence intervals, and hypothesis testing.

Prerequisite: Minimum score of 350 on the TSIA1, minimum score of 950 on the TSIA2, a diagnostic score of 6 on the TSIA2, TSI-exempt status, a successful completion with a grade of 'C' or better in MATH 0337, or successful completion of NCBM-0112.

Credit: 3 **Lecture:** 3 **Lab:** 0

Textbook: *Elementary Statistics: Picturing the World*, Larson and Farber, 2019, 7th Edition, Pearson → **Please note, this textbook is NOT REQUIRED for this course!!** All resources necessary for the course are available on Blackboard.

Supplies: Please see the instructor's course information sheet for specific supplies.

This course partially satisfies a Core Curriculum Requirement: Mathematics Foundational Component Area (020)

Core Curriculum Objectives addressed:
- **Communications skills**—to include effective written, oral, and visual communication
- **Critical thinking skills**—to include creative thinking, innovation, inquiry, and analysis, evaluation, and synthesis of information
- **Empirical and quantitative competency skills**—to manipulate and analyze numerical data or observable facts resulting in informed conclusions

Student Learning Outcomes: Upon completion of this course and receiving a passing grade, 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.

Student Learning Outcomes Assessment: A pre- and post-test questions will be used to determine the extent of improvement that the students have gained during the semester

Course Evaluation: There will be departmental final exam questions given by all instructors.

Attendance/Student Engagement Policy: Attendance and engagement are the most critical activities for success in this course. The instructor maintains records of the student's attendance and submission of assignments throughout the semester. The student is expected to attend at least eighty percent (80%) of the **total** class meetings **and** submit at least eighty percent (80%) of the **total** class assignments to have the best chance of success. If the student fails to meet these

minimum requirements, the instructor <u>may</u> remove the student from the class with an X, upon their discretion, to help the student from harming their GPA. If the student can not receive an X, the instructor will assign an F.

Plagiarism violations include, but are not limited to, the following:
1. Turning in a paper that has been purchased, borrowed, or downloaded from another student, an online term paper site, or a mail order term paper mill;
2. Cutting and pasting together information from books, articles, other papers, or online sites without providing proper documentation;
3. Using direct quotations (three or more words) from a source without showing them to be direct quotations and citing them; or
4. Missing in-text citations.

Cheating violations include, but are not limited to, the following:
1. Obtaining an examination by stealing or collusion;
2. Discovering the content of an examination before it is given;
3. Using an unauthorized source of information (notes, textbook, text messaging, internet, apps) during an examination, quiz, or homework assignment;
4. Entering an office or building to obtain an unfair advantage;
5. Taking an examination for another;
6. Altering grade records;
7. Copying another's work during an examination or on a homework assignment;
8. Rewriting another student's work in Peer Editing so that the writing is no longer the original student's;
9. Taking pictures of a test, test answers, or someone else's paper.

Student Code of Conduct Policy: Any successful learning experience requires mutual respect on the part of the student and the instructor. Neither instructor nor student should be subject to others' behavior that is rude, disruptive, intimidating, aggressive, or demeaning**.** Student conduct that disrupts the learning process or is deemed disrespectful or threatening shall not be tolerated and may lead to disciplinary action and/or removal from class.

South Plains College policies, return to campus plan, and protocols regarding COVID-19 can be found here:

https://www.southplainscollege.edu/emergency/covid19-faq.php

South Plains College policies concerning intellectual exchange, disabilities, non-discrimination, Title IX Pregnancy Accommodations, CARE Team, and Campus Concealed Carry Statements can be found here:

https://www.southplainscollege.edu/syllabusstatements/

SPC Bookstore Price Match Guarantee Policy: If you find a lower price on a textbook, the South Plains College bookstore will match that price. The difference will be given to the student on a bookstore gift certificate! The gift certificate can be spent on anything in the store.

If students have already purchased textbooks and then find a better price later, the South Plains College bookstore will price match through the first week of the semester.   The student must have a copy of the receipt and the book has to be in stock at the competition at the time of the price match.

The South Plains College bookstore will happily price match BN.com & books on Amazon noted as *ships from and sold by Amazon.com*. Online marketplaces such as *Other Sellers* on Amazon, Amazon's Warehouse Deals, *fulfilled by* Amazon, BN.com Marketplace, and peer-to-peer pricing are not eligible. They will price match the exact textbook, in the same edition and format, including all accompanying materials, like workbooks and CDs.

A textbook is only eligible for price match if it is in stock on a competitor's website at time of the price match request. Additional membership discounts and offers cannot be applied to the student's refund.

Price matching is only available on in-store purchases.   Digital books, access codes sold via publisher sites, rentals and special orders are not eligible. Only one price match per title per customer is allowed.

Note: The instructor reserves the right to modify the course syllabus and policies, as well as notify students of any changes, at any point during the semester.

MATH-1342-002 Statistical Methods
Schedule of Topics ~ Fall 2023
M W 9:00 – 10:45   AG105

Week	Date	Lesson	Homework Due Dates
1	Mon 8/28	The Nature and Probability of Statistics: Overview (Chapter 1)	HW 1 due Wed, 8/30
	Wed 8/30	Organizing Data/Histograms, Frequency Polygons, & Ogives (2.1 & 2.2)	HW 2 due Wed, 9/6
2	Mon 9/4	Labor Day ~ No Class	
	Wed 9/6	Other Types of Graphs (2.3)	HW 3 due Mon, 9/11
3	Mon 9/11	Measures of Central Tendency (3.1)	HW 4 due Wed, 9/13
	Wed 9/13	Measures of Variation (3.2)	HW 5 due Mon, 9/18
4	Mon 9/18	Measures of Position/Exploratory Data Analysis (3.3 & 3.4)	HW 6 due Wed, 9/20
	Wed 9/20	Exam 1	
5	Mon 9/25	Correlation (10.1)	HW 7 due Wed, 9/27
	Wed 9/27	Regression (10.2)	HW 8 due Mon, 10/2
6	Mon 10/2	Coefficient of Determination & Standard Error of the Estimate/Multiple Regression (10.3, 10.4)	HW 9 due Wed, 10/4
	Wed 10/4	Sample Spaces & Probability (4.1)	HW 10 due Mon, 10/9
7	Mon 10/9	The Addition Rules for Probability (4.2)	HW 11 due Wed, 10/11
	Wed 10/11	The Multiplication Rules & Conditional Probability (4.3)	HW 12 due Mon, 10/16
8	Mon 10/16	Exam 2	
	Wed 10/18	Probability Distributions/Mean, Variance, Standard Deviation, & Expectation (5.1, 5.2)	HW 13 due Mon, 10/23
9	Mon 10/23	The Binomial Distribution (5.3)	HW 14 due Wed, 10/25
	Wed 10/25	Normal Distributions (6.1)	HW 15 due Mon, 10/30
10	Mon 10/30	Applications of the Normal Distribution (6.2)	HW 16 due Wed, 11/1
	Wed 11/1	The Central Limit Theorem (6.3)	HW 17 due Mon, 11/6
11	Mon 11/6	The Normal Approximation of the Binomial Theorem (6.4)	HW 18 due Wed, 11/8
	Wed 11/8	Exam 3	
12	Mon 11/13	Confidence Intervals for the Mean When σ is Known/ Confidence Intervals for the Mean When σ is Unknown (7.1 & 7.2)	HW 19 due Wed, 11/15
	Wed 11/15	Steps in Hypothesis Testing (8.1)	HW 20 due Mon, 11/20
13	Mon 11/20	z Test for a Mean /t Test for a Mean (8.2, 8.3)	HW 21 due Mon, 11/27
	Wed 11/22	Thanksgiving Holiday ~ No Class	
14	Mon 11/27	z Test for a Proportion (8.4)	HW 22 due Wed, 11/29
	Wed 11/29	Testing the Difference Between Two Means: Using the z Test/ Testing the Difference Between Two Means of Independent Samples: Using the t Test (9.1 & 9.2)	HW 23 due Mon, 12/4
15	Mon 12/4	Exam 4	
	Wed 12/6	Review for the Comprehensive Final Exam	
16	Wed 12/13	Final Exam @ 8:00 AM	