

South Plains College
Department of Mathematics and Engineering
MATH 1342-Statistical Methods
Spring 2022 Course Syllabus

Instructor: Mrs. Bethany Goen, B.S., M.A.

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Facebook Page: Mrs. Goen's Mathematics Class

Office: Room 41

Office Hours: M-Th 1:45pm-3pm, or by appointment

Course Description: MATH 1342. (3:3:0). STATISTICAL METHODS. M-F 9:52AM-10:37AM

Prerequisite: Two units of high school algebra or MATH 1314 or MATH 1324. This course is a study of the methods of analyzing data, statistical concepts and models, estimation, tests of significance, introduction to analysis of variance, linear regression, and correlation. (SPC catalog)

Disclaimer: The instructor reserves the right to alter any class policies/dates as deemed necessary by the instructor, and will announce any changes in class.

Supplies: You will need a graphing calculator, pencils, and paper. You may use either the TI-84+ or TI-nSpire CX (not the CX CAS) graphing calculators. You will also be required to bring your chrome book to class each day. Please use a notebook to keep all class notes, homework, and exams together, which will be useful for your comprehensive final exam. Please note: I require pencil on all graded work. You will be given one warning and after that, you will earn a zero on any work where you fail to follow my instructions.

Textbook: Illowsky, Barbara, et al. *Introductory Statistics*. OpenStax, Rice University, 2018.

Accessing Blackboard: Go to: <http://spc.blackboard.com>

User name: first initial, last name, and last 4 digits of your Student ID Password: See Blackboard Instructions. If you need assistance with Blackboard, please email blackboard.southplainscollege.edu.

Course Objectives: Successful completion of this course should reflect mastery of the following objectives:

1. Represent raw data in a variety of ways
2. Calculate measures of central tendency, variation, and location for both grouped and ungrouped data
3. Calculate coefficients of variation and skewness
4. Calculate classical and empirical probabilities
5. Apply various distributions and their properties
6. Calculate mean, variance, standard deviation, coefficients of correlation and determination, etc.
7. Correctly use hypothesis testing and identify Type I and II errors
8. Calculate simple and multiple linear regression equations and correctly use interpolation and extrapolation
9. Interpret in writing the significance and meaning of statistical calculations

Grading Policy: Grades will be posted on blackboard. If you think I have recorded a grade incorrectly, please notify me immediately and I will check my hard copy.

<u>Category</u>	<u>Percentage of Final Grade</u>	<u>Overall Grade</u>
Assignment Assessments	10%	A: 90%-100%
Quizzes	30%	B: 80%-89%
Exams	40%	C: 70%-79%
Comprehensive Final	20%	D: 60%-69%
		F: 0%-59%

Concerning Assignments & Assessments: You should expect to spend as much time outside of class as you do in class completing homework problems and studying. Your goal is to acquire the skills necessary to be successful in any following mathematics course. If you are absent, your homework assignment can be found on Blackboard. Homework is an opportunity to learn and practice the art of algebra. Please feel free to collaborate with your classmates, check the solutions in your book, watch videos on YouTube, such as those at KhanAcademy.org, or use resources such as desmos.com, wolframalpha.com, etc. If you are interested in passing the class, you will need to do well on the quizzes and tests. These assessments will be done independently and without the aid of any technology, with the exception of your calculator. Even when using calculators, one must show all pertinent work. To do well on the quizzes, you will need to not only complete the homework, but understand it. You should show all work when doing any assignment or assessment in this class, and it must be done in pencil. **There are no retakes or corrections in this class.** Assignments will be assessed through a seven minute quiz. If you complete all assignment quizzes on time and make above a 60 on each one, I will drop your lowest quiz grade. If you do poorly on an exam, you may replace up to one exam grade with the grade from your comprehensive final exam.

Attendance: In order to be successful, you must be in attendance. Class attendance may be taken at any time during the class period, so please do not be tardy or leave early. Failure to attend this class can result in an F on your transcript. If you should incur an absence, please refer to your syllabus, contact your professor, or contact another student to get the assignment completed BEFORE the next class. Late homework and makeup quizzes are not an option. If you miss an exam, a make-up exam will only be given if prior arrangements have been made, preferably prior to the exam day.

Testing: All tests will last one hour. Once you begin the exam, you will not be allowed to leave the classroom until the exam is submitted for grading. The use of electronics (smart phones and watches, computers, etc.) during an exam will earn you a zero on the exam. For other consequences, see the SPC policy on academic integrity.

The following statements are taken from the Employee Handbook:

Academic Integrity: It is the aim of the faculty of South Plains College to foster a spirit of complete honesty and a high standard of integrity. The attempt of any student to present as his or her own any work which he or she has not honestly performed is regarded by the faculty and administration as a most serious offense and renders the offender liable to serious consequences, possibly suspension, but at the least a mandatory and irreparable zero. Dishonesty of any kind on examinations or on written assignments, illegal possession of examinations, the use of unauthorized notes during an examination, obtaining information during an examination from the textbook or from the examination paper of another student, assisting others to cheat, alteration of grade records, illegal entry or unauthorized presence in an office are examples of cheating. Complete honesty is required of the student in the presentation of any and all phases of course work. This applies to quizzes of whatever length, as well as to final examinations, to daily reports and to term papers. Offering the work of another as one's own, without proper acknowledgment, is plagiarism; therefore, any student who fails to give credit for quotations or essentially identical expression of material taken from books, encyclopedias, magazines and other reference works, or from the themes, reports or other writings of a fellow student, is guilty of plagiarism.

Diversity Statement: In this class, the teacher will establish and support an environment that values and nurtures individual and group differences and encourages engagement and interaction. Understanding and respecting multiple experiences and perspectives will serve to challenge and stimulate all of us to learn about others, about the larger world and about ourselves. By promoting diversity and intellectual exchange, we will not only mirror society as it is, but also model society as it should and can be.

Disabilities Statement: Students with disabilities, including but not limited to physical, psychiatric, or learning disabilities, who wish to request accommodations in this class should notify the Disability Services Office early in the semester so that the appropriate arrangements may be made. In accordance with federal law, a student requesting accommodations must provide acceptable documentation of his/her disability to the Disability Services Office. For more information, call or visit the Disability Services Office at Levelland (Student Health & Wellness Office) 806-716-2577, Reese Center (Building 8) 806-716-4675, or Plainview Center (Main Office) 806-716-4302 or 806-296-9611.

Non-Discrimination Statement: South Plains College does not discriminate on the basis of race, color, national origin, sex, disability or age in its programs and activities. The following person has been designated to handle inquiries regarding the non-discrimination policies: Vice President for Student Affairs, South Plains College, 1401 College Avenue, Box 5, Levelland, TX 79336. Phone number 806-716-2360.

Attendance Policy: Students are expected to attend all classes in order to be successful in a course. The student may be administratively withdrawn from the course when absences become excessive as defined in the course syllabus. When an unavoidable reason for class absence arises, such as illness, an official trip/activity, the instructor may permit the student to make up work missed. It is the student's responsibility to complete work missed within a reasonable period of time as determined by the instructor. Students are officially enrolled in all courses for which they pay tuition and fees at the time of registration. Should a student, for any reason, delay in reporting to a class after official enrollment, absences will be attributed to the student from the first class meeting. A student who does not meet the attendance requirements of a class as stated in the course syllabus and does not officially withdraw from that course by the official census date of the semester, may be administratively withdrawn from that course and receive a grade of "X" or "F" as determined by the instructor. Instructors are responsible for clearly stating their administrative drop policy in the course syllabus, and it is the student's responsibility to be aware of that policy. It is the student's responsibility to verify administrative drops for excessive absences through MySPC using his or her student online account. If it is determined that a student is awarded financial aid for a class or classes in which the student never attended or participated, the financial aid award will be adjusted in accordance with the classes in which the student did attend/participate and the student will owe any balance resulting from the adjustment.

As per department policy:

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. Demonstrate and apply knowledge of properties of functions, including domain and range, operations, compositions, and inverses.
2. Recognize and apply polynomial, rational, radical, exponential and logarithmic functions and solve related equations.
3. Apply graphing techniques.
4. Evaluate all roots of higher degree polynomial and rational functions.
5. Recognize, solve and apply systems of linear equations using matrices.

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 Policy: Attendance and effort are the most important activities for success in this course. Records of your attendance are maintained throughout the semester. Five (5) absences, *for any reason*, are allotted to the student for the semester. Tardies count as one-half (1/2) of an absence. Tardies will be applied for consistently being late to class, as deemed by the instructor and leaving class early. If this number is exceeded, the instructor has the right to drop you with a grade of F or an X, depending on their discretion.

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.

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Title IX Pregnancy Accommodations Statement: If you are pregnant, or have given birth within six months, Under Title IX you have a right to reasonable accommodations to help continue your education. To [activate](#) accommodations you must submit a Title IX pregnancy accommodations request, along with specific medical documentation, to the Director of Health and Wellness. Once approved, notification will be sent to the student and instructors. It is the student's responsibility to work with the instructor to arrange accommodations. Contact the Director of Health and Wellness at 806-716-2362 or [email cgilster@southplainscollege.edu](mailto:cgilster@southplainscollege.edu) for assistance.

Campus Concealed Carry: Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in South Plains College buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and South Plains College policy, license holders may not carry a concealed handgun in restricted locations. For a list of locations and Frequently Asked Questions, please refer to the Campus Carry page at: <http://www.southplainscollege.edu/campuscarry.php>

Pursuant to PC 46.035, the open carrying of handguns is prohibited on all South Plains College campuses. Report violations to the College Police Department at 806-716-2396 or 9-1-1.

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. 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.

Tentative Course Schedule

MATH 1342 - Statistics-A	MATH 1342 - Statistics-B
Introduction	Using CLT
Definitions & Data 1.1 & 1.2	Quiz 7
Frequencies 1.3	Review
Experiments & Ethics 1.4 & 1.5	Exam 3 (Ch 5, 6, & 7)
Sampling 1.6	AssignQ3 & Confidence Intervals 8.1-8.6
Quiz 1	SPRING BREAK
Descriptive Stats & Models 2.1 & 2.2	Confidence Intervals 8.1-8.6
Measures-Location & Box Plots 2.3 & 2.4	Confidence Intervals 8.1-8.6
Measures-Center of Data & Skewness 2.5 & 2.6	Quiz 8
Measures-Spread 2.7	Intro-Hypothesis Testing
Descriptive Stats 2.8	Null & Alt Hypos 9.1
M&M Lab 1	Type I & II Errors 9.2
Quiz 2	Distributions 9.3
Review	Hypo Test Apps
Exam 1 (Ch 1 & 2)	Quiz 9
AssignQ1 & Intro to Probability 3.1	Hypo Tests 2 Samples 10.1-10.5
Probability Rules 3.2 & 3.3	Chi-Square & Goodness of Fit 11.1-11.6
Contingency Tables 3.4	Quiz 10/11
Diagrams 3.5	Exam 4 (Ch 8, 9, 10, & 11)
Probability Packet & Applications	AssignQ4 & Scatter Plots 12.2
Probability Packet & Applications	Linear Regression 12.3
Quiz 3	Testing Significance 12.4
PDFs 4.1	Predictions & Outliers 12.5 & 12.6
Expected Value 4.2	Regression Apps
Distributions 4.3-4.6	Quiz 12
Quiz 4	MultiLinear Regressions
Review	One-Way ANOVA 13.1
Exam 2 (Ch 3 & 4)	ANOVA & F-Dist 13.2-13.5
AssignQ2 & Continous Random Variables 5.1-5.4	Quiz 13
Continous Random Variables 5.1-5.4	Review
Quiz 5	Exam 5 (Ch 12 & 13)
Standard Normal Distributions 6.1	AssignQ5 & Project
Z-Scores & The Empirical Rule 6.1	LAB
Using SNDs 6.2	LAB
Quiz 6a & Applications SNDs	LAB
M&M Lab 2	LAB
Quiz 6b	LAB
Central Limit Thm 7.1	APPLICATIONS
Central Limit Thm 7.2	REVIEW
Central Limit Thm 7.3	FINAL EXAM