

South Plains College – Spring 2020
Course Syllabus: MATH 1342-501

Instructor: Tom Johnson, tjohnson@southplainscollege.edu Ext. 4318

Department: Mathematics, Engineering, and Computer Science **Discipline:** Mathematics

Course Number: MATH 1342-501 **Course Title:** Statistical Methods

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

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

Prerequisite: Minimum score of 350 on the TSIA, TSI-exempt status, or a successful completion with a grade of 'C' or better in MATH 0337.

Credit: 3 Lecture: 3 Lab: 0

Textbook:

McClave, James T.; Sincich, T. (2013) A First Course in Statistics. 11th Ed. Boston: Pearson.
 ISBN 978-0-321-75595-7

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 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. 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.

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.

Disability 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.

Nondiscrimination Policy: 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.

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.

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 1342-501: Spring 2020 – Mr. Johnson

Week #	Mo	Day	Lesson / Tentative Assignment
1	01	13	1.4 Types of Data, 1.5 Collecting Data
1		15	1.6 The Role of Statistics in Critical Thinking & Ethics
2		22	2.1 Describing Qualitative Data, 2.2 Graphical Methods for Describing Qualitative Data
3		27	2.3 Summation Notation, 2.4 Numerical Measures of Central Tendency
3		29	2.5 Numerical Measures of Variability, 2.6 Interpreting the Standard Deviation
4	02	03	2.7 Numerical Measures of Relative Standing, 2.8 Methods for Detecting Outliers; Box-Plots & z-Scores
4		05	Test #1
5		10	3.1 Events, Sample Spaces, & Probability, 3.3 Complementary Events
5		10	3.4 The Additive Rule & Mutually Exclusive Events, 3.5 Conditional Probability
6		19	3.6 The Multiplicative Rule & Independent Events, 3.7 Random Sampling
7		24	4.1 Two Types of Random Variables, 4.2 Probability Distributions for Discrete Random Variables
7		26	4.3 The Bivariate Random Variable, 4.4 Probability Distributions for Continuous Random Variables
8	03	02	4.5 The Normal Distribution, 4.8 Sampling Distributions
8		04	4.9 The Sampling Distributions of \bar{x} & the Central Limit Theorem
9		09	Test #2
9		11	TECH
10		23	5.2 Confidence Interval for a Population Mean: Normal (z) Statistic, 5.3 Confidence Interval for a Population Mean: Student's t-Statistic
10		25	5.4 Large-Sample Confidence Interval for a Population Proportion, 5.5 Determining the Sample Size
11		30	6.1 The Elements of a Test of Hypothesis, 6.2 Formulating Hypotheses and Setting Up the Rejection Region
11	04	01	6.3 Test of Hypothesis about a Population Mean: Normal (z) Statistic, 6.4 Observed Significance Levels: p-Values
12		06	6.5 Test of Hypothesis about a Population Mean: Student's t-Statistic, 6.6 Large-Sample Test of Hypothesis about a Population Proportion
12		08	Test #3
13		15	7.2 Comparing Two Population Means: Independent Sampling, 7.4 Determining the Sample Size
14		20	7.7 Comparing Three or more Population Means: Analysis of Variance (ANOVA), 8.2 Determining Sample Size, 9.5 The Coefficients of Correlation & Determination
14		22	Test #4
15		27	Project for FINAL
15		29	Project for FINAL
FINALS	05	04-07	FINAL EXAM WEEK