South Plains College
MATH 0342/1342-C151 (Online): Statistical Methods
Spring 2024

Instructor: Taek Hyun Jang, PhD.

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Office: M107 (Math and Engineering Building, Levelland)

Office Hours:
- Tuesday, Thursday and Friday: 10:00 AM – 12:00 PM (Levelland Campus, M107)
- Wednesday: 4:30 PM – 5:30 PM (Downtown Center, B001)
- Thursday: 6:00 PM – 7:00 PM (Downtown Center, B001)
- Virtual meeting by appointment (ZOOM)

Department: Mathematics, Engineering, and Computer Science

Discipline: Mathematics

Course Number: MATH 0342/1342-C151

Course Title: Statistical Methods Support Course / Statistical Method

Available Formats: conventional, hybrid, and internet

Campuses: Levelland, Downtown, Plainview, Lubbock 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 Word*, Ron Larson & Betsy Farer, 7th Edition, Pearson.

Supplies: A graphing calculator with the statistics package is required and you are required to bring your calculator to EVERY class. TI-83, TI-83+, TI-83+TI-84+ are preferred. For any other graphing calculator, you will need to read the manual to determine how to make the processes work. Cell phones and similar devices may NOT be used as calculators. If you have any questions about your calculator or software, check with the instructor immediately.

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.

Assessment		Grading Scale	
Lab Assignment:	10%	90 – 100	A
Homework (Pearson MyLab)	15%	80 – 89	B
Exams (4):	Total 60%	70 – 79	C
Final Exam:	15%	60 – 69	D
		Below 60	F

Course materials
This is an online class, and students need to access class materials through the internet. Students can access Pearson MSL assignments (resources) through the Blackboard without the access code. However, for all MSL assignments (resources), students need to setup the Pearson MyLab course to access the Inclusive Access link and launch the course materials.

1) **To access Pearson MyLab MSL assignments (resources),**
- Login to Blackboard and go to Business Statistics class/
- Click Pearson MyStat/
- Click MATH 1342/
- Click Launch Courseware/
- Click Open MyLab & Mastering,
- Then MyLab Statistics page will appear, and students can access all of the class materials and homework from the page.

2) **In the MyLab Statistics,**

- Video presentation and e-Textbook – Lecture videos and e-textbook are available at "**eText Contents**", and students can select a chapter and sections for video presentation and e-Textbook. Students can watch the lecture videos and read the e-textbook following the class schedule at the end of this syllabus.

- Homework Assignment – Homework for each chapter is assigned in the "**Assignments**". Typically, homework assignments are due at 11:59 pm on the due date. The due date of homework will not be extended, so please frequently check the due date and time. Also, please start all assignments early to avoid any internet problems, Pearson website technical issues, or Blackboard technical issues. Those are the problems that the instructor cannot control.

- Online Quiz – You can access the online quiz for each section (or chapter) from "**Assignment**" and click All Assignments, then select Quizzes & Tests.

Lab assignments will be uploaded at "**Lab Assignment**" content in the SPC Blackboard, and students must submit their solutions through Gradscope by the due date. To access lab assignments, click Lab Assignments in the Blackboard contents and then the Gradscope window will appear. Students can find lab assignment problems by clicking **Assignments** button. After finishing the assignment, the solutions should be uploaded through Gradscope in PDF format, JEPG format, picture file format, etc.

Tentative Exam and Final Schedule:
- Exam 1: Chapters 1 & 2   (Date: 2/08/2024)
- Exam 2: Chapters 3, 4 & 5   (Date: 3/07/2024)
- Exam 3: Chapters 6 & 7   (Date: 4/11/2024)
- Exam 4: Chapters 8 & 9   (Date: 5/02/2024)
- Final Exam: Comprehensive   (Date: 5/09/2024)

Make-up: Make-up work is given at the discretion of the instructor. NO make-up exams are given without prior notification AND proper documentation. If are absent from class, have given prior notification and proper documentation of your absence, you MUST make arrangements to take the exam BEFORE the next class period.

Communication: We will generally communicate through SPC Email during the semester. Please use your SPC email for this course, otherwise I cannot guarantee I will receive and respond to other email addresses. Also, you can join zoom meeting by appointment.

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 may remove the student from the class with an X, upon their discretion, to help the student from harming their GPA. If the student cannot 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.

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 <u>activate</u> 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 <u>email</u> <u>rcanon@southplainscollege.edu</u> 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: <u>http://www.southplainscollege.edu/campuscarry.php</u>
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 0342/1342-C151: Online Statistical Methods Tentative Class Schedule – Spring 2024

Week	Date	Topic	Chapter
1	1/15 - 1/19	1.1 An Overview of Statistics 1.2 Data Classification 1.3 Data Collection	**Ch 1**
2	1/22 - 1/26	2.1 Frequency Distribution and Histogram 2.2 More Graphs and Displays	**Ch 2**
3	1/29 - 2/02	2.3 Measure of Central Tendency 2.4 Measures of Variation 2.5 Measures of Position	
4	2/08	**Exam 1 (Ch 1 and 2)**	
5	2/12 - 2/16	3.1 Basic Concept of Probability 3.3 The Addition Rule 3.2 Conditional Probability and Multiplication Rule	**Ch 3**
6	2/19 - 2/23	4.1 Discrete Probability Distribution 4.2 Binomial Distribution	**Ch 4**
7	2/26 - 3/01	5.1 Introduction to Normal Distribution and Standard Normal Distribution 5.2 Normal Distribution: Finding Probabilities 5.3 Normal Distribution: Finding Values 5.4 Sampling Distribution and the Central Limit Theorem	**Ch 5**
8	3/07	**Exam 2 (Ch 3, 4 and 5)**	
9	3/11 - 3/15	**Spring Braek – No Class**	
10	3/18 - 3/22	6.1 Confidence Interval for the Mean (σ known) 6.2 Confidence Interval for the Mean (σ unknown) 6.3 Confidence Intervals for Population Proportions 6.4 Confidence Interval for Variance and Standard Deviation	**Ch 6**
11	3/25 - 3/29	7.1 Introduction to Hypothesis Testing 7.2 Hypothesis Testing for the Mean (σ known) 7.3 Hypothesis Testing for the Mean (σ unknown)	**Ch 7**
12	4/01 - 4/05	7.4 Hypothesis Testing for the Proportion 7.5 Hypothesis Testing for Variance and Standard Deviation	
13	4/11	**Exam 3 (Ch 6 and 7)**	
14	4/15 - 4/19	8.1 & 2 Testing the Difference between Means: Independent Samples 8.3 Testing the Difference between Means: Dependent Samples 8.4 Testing the Difference between Proportions	**Ch 8**
15	4/22 - 4/26	9.1 Scatter Plot and Correlation 9.2 Linear Regression	**Ch 9**
16	5/02	**Exam 4 (Ch 8 and 9)**	
17	5/09	**Final Exam (Comprehensive: Ch1 to Ch9)**	