Course Syllab

MATH 1442 Elementary Statistical Methods

Instructor:

Walker, Bonnie

Contact Information:

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Catalogue 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.

Term:

Fall 2022

Format of Term:

16 week

End of Course Outcomes:

Upon successful completion of this course, students will:
Explain the use of data collection and statistics as tools to reach reasonable conclusions.
Recognize, examine and interpret the basic principles of describing and presenting data.
Compute and interpret empirical and theoretical probabilities using the rules of probabilities and combinatorics.
Explain the role of probability in statistics.
Examine, analyze and compare various sampling distributions for both discrete and continuous random variables.
Describe and compute confidence intervals.
Solve linear regression and correlation problems.
Perform hypothesis testing using statistical methods.

Required Textbook

Larson, Access code required only - no paper textbook, 7th, Elementary Statistics: Picturing the World, , Pearson, 9780135901021, https://www.templecollegebookstore.com/home

Learning Resources:

Pearson MyLab Statistics has built in help on homework questions

Math Lab for Temple College: https://www.templejc.edu/resources/tutoring/math-tutorial-lab/

SmartThinking offers free tutoring once you create an account. The link is on the Temple College D2L home page.

Evaluation System:

Grading Procedure: A = 90 – 100%   B = 80 – 89%   C = 70 – 79%   D = 60 – 69%   F = Less than 60%

MLS = Pearson's MyLab Statistics

Grading system Total =100%	Attendance 5%	Participation 10%	Homework 28%	3 Exams 45%	Final Exam 12%
Breakdown	Taken every class; lose points for more than 2 absences	Lose points for not participating in class, not turning in assignments or failing assignments	28 HW assignments, all online in MLS worth 1% each with multiple attempts	Each exam is in class, on paper, not MLS. Each worth 15%, no make-ups	Comprehensive final exam, taken in class, on paper on 12/6.

Course Schedule/Topics

Week		Sections covered in class (or exam)
1		
		Intro and 1.1 Overview of Statistics
2		1.2 and 1.3 Data Classification, Collection and Experimental Design
		2.1 and 2.2 Frequency Distributions, Graphs and Displays
3		2.2 and 2.3 More Graphs and Displays and Measures of Central Tendency
		2.4 Measures of Variation

4		2.5 and 3.1 Measures of Position and Basic Concepts of Probability and Counting
		3.2 Conditional Probability and the Multiplication Rule
5		3.3 and 3.4 The Addition Rule and Additional Topics in Probability
		review
6		**Exam I** over Ch 1, 2, 3
		4.1Probability Distributions
7		4.2, 4.3 Binomial and other Discrete Probability Distributions
		5.1 Introduction to Normal Distributions and the Standard Normal Distribution
		5.2, Finding Probabilities based on the Normal Distribution
8		5.2 and 5.3 Finding values using Normal Distributions
		5.4 Sampling Distributions and the Central Limit Theorem
9		5.5 Normal Approximations to Binomial Distributions
		No class – fall break
10		review
		Exam II over Ch 4 and 5
11		6.1 Confidence Intervals for the Mean (Population standard deviation known)
		6.2 Confidence Intervals for the Mean (Population standard deviation sigma unknown)
12		6.3 Confidence Intervals for Population Proportions
		7.1 Intro to Hypothesis Testing

13		7.2 Hypothesis Testing for the mean (Population standard deviation known)
		7.3 Hypothesis Testing for the mean (Population standard deviation unknown)
14		7.4 Hypothesis Testing for Proportions
		review *Last Day to drop is Thu 11/17*
15		**Exam III** over Ch 6 and 7
		No class - Thanksgiving
16		9.1 and 9.2 Correlation and Linear Regression
		Review for final exam
17		**Final Exam**

Marketable Skills

Marketable Skills

- ·   Critical Thinking
- ·   Problem Solving
- ·   Analytical Thinking
- ·   Quantitative Reasoning
- ·   Time Management
- ·   Attention to Detail

Class Policies

Required for Class:

Pearson MLS Code: Students enrolled in this course MUST purchase an access code for Pearson's MyLab Statistics, MLS (also known as MyStatLab). My course cannot be completed without the Pearson code purchase. You do not have to buy the textbook. Upon registration and code purchase, you will have access to this learning platform used for my class. Before paying, students can have *temporary* access for 14 days. All homework assignments are done online through MLS and all grades and class notes will be posted there as well. *To join Pearson MLS for this class, you must access through the link on D2L page.* You do not need a course ID since I've linked your enrollment through D2L and will sync your overall average from MLS to D2L.

Calculator: You *must* have a calculator for this class, as we are constantly analyzing data that requires it. It would be best to have something similar to what I use: TI-84 Plus C Silver Edition. Calculators are required on all assignments and exams. While Excel or a phone app is fine for HW, you must have a calculator for exams.

Attendance: Attendance is mandatory and taken every class meeting. We will meet on TTh from 11am until 12:40pm in Taylor, room 122. You can keep track of your weekly attendance record in D2L. Your attendance grade will be 100 unless you miss excessively without communicating with me. If you have multiple absences due to extenuating circumstances, then please talk to me or email me and we can discuss your attendance grade.

Participation: This grade begins at 100 and will only decrease with lack of participation. Keep up with HW each week in MLS and contribute during class by asking questions, paying attention and working problems on your own when asked. Multiple failing grades or written assignments not turned in by announced due dates will result in a lowered participation score. I expect everyone to engage in class when I cover each section's notes. Check MLS under Course Materials before each class to print out my 'partial notes' which are the slides from my PowerPoint presentation. Use these to follow along with my presentation of the material during class and to help you with your online homework afterwards. I later post full notes in MLS in case you need them or missed class for any reason.

Homework (HW): There will be 28 online homework assignments in MLS with problems that can be attempted multiple times to improve your score. Each HW should be completed *immediately* after we cover that section in class. Due dates are always listed for each assignment in MLS.

A 'past due' score means your assignment has not been attempted or opened by the due date. *Not good.*

You should always open and complete each assignment so that you will never see 'past dues'; this way your overall average will always be accurate. 'Past dues' are not factored into your current average until the end of the course. Any 'past due' scores on assignments will automatically convert to **zeroes** on their final submission date of Mon 12/5 at 11pm. Each past due will bring down your overall average by one point.

If you do not complete an assignment to 100% by its due date, you may still work on problems until the final submission date, but can only earn up to 70% credit for those problems (late penalty).

All grades, including your current average, can be found on Pearson's MLS (MyLab Statistics). D2L should show only your current average (only accurate if you have no past due assignments).

Exams: All exams will be in person, during class time and announced on the course timeline (see next page). All work is to be shown on exams for full/partial credit. Calculators are required and may not be shared. No make-up exams will be given. If you miss an exam, then your final exam score will also count for the missed exam. The final exam is comprehensive and study guides will be provided for you to use during the final. Your final exam grade can replace your lowest regular exam grade if your final exam has a higher score.

Class Rules: To keep distractions in class to a minimum, please silence or turn off cell phones during instruction and store out of sight. No food or snacks during instruction or exams (drinks are ok). In the unlikely event that I am absent or late to class, students are to wait for *at least* 15 minutes and check your TC email.