

**WALTERS STATE COMMUNITY COLLEGE
COURSE SYLLABUS**

COURSE NAME AND NUMBER: Business Statistics - ECON 2210
Probability and Statistical Applications - MATH 2050

SEMESTER AND YEAR:

INSTRUCTOR:

Mathematics Division Fax: 423-585-6873
Division Secretary: 423-585-6864
Tutoring: Mrs. Beth Dixon at Beth.Dixon@ws.edu or 423-585-6872 or MBSS 222
or Ms. Mary Breedlove at Mary.Breedlove@ws.edu or 423-585-6920 or CCEN 261
Office Hours: Posted on office door. Office hours are times the instructor is on campus.
It is recommended that students make an appointment.

REQUIRED TEXTBOOK: Statistical Techniques in Business & Economics by Douglas Lind,
William Marchal, and Samuel Wathen (Thirteenth Edition)

REQUIRED TECHNOLOGY: TI-83 or TI-84 graphing calculator required for course – discuss with
instructor if you own a different graphing calculator

Students may need a ream of computer paper to print materials.

CATALOG DESCRIPTION:

Descriptive statistics, including measures of central tendency, variation, bivariate trends and time series analysis; concepts of probability and probability distributions, binomial and normal distributions, linear correlation and regression; properties of samples and populations, statistical inference, including estimation and significance tests for means, contingency tables. (Prerequisite: Math 1830 or Math 1910)

3 Semester Credits

COURSE OUTCOMES:

The student should be able to:

1. Organize and summarize data using frequency distributions, histograms, and descriptions of central tendency and variation.
2. Compute probabilities using fundamental principles.
3. Compute mean and standard deviation for a discrete probability distribution. Calculate probabilities for a binomial distribution.
4. Calculate probabilities and percentile values for applied problems with normal distributions.
5. Use Central Limit Theorem to calculate probabilities for sample means.
6. Make inferences from samples about population means and proportions using confidence intervals.
7. Test claims for a one-sample mean using hypothesis testing.
8. Analyze data and make predictions using simple linear regression and correlation.
9. Compute simple index numbers.
10. Define the four components of time series data. Compute and graph moving averages. Make predictions given linear trend and seasonal indexes.
11. Use the Chi-Square Test to test for independence.
12. Construct control charts for mean (\bar{X}) and range (R) charts for variable data and use the charts to evaluate process performance.
13. Use computer programs and/or a statistical calculator to perform statistical analysis.

COURSE CONTENT:

Chapter 1 – What is Statistics?

Chapter 2 – Describing Data: Frequency Tables, Frequency Distributions, and Graphic Presentation

Chapter 3 – Describing Data: Numerical Measures

Chapter 4 – Describing Data: Displaying and Exploring Data

Chapter 5 – A Survey of Probability Concepts

Chapter 6 – Discrete Probability Distributions

Chapter 7 – Continuous Probability Distributions

Chapter 8 – Sampling Methods and the Central Limit Theorem

Chapter 9 – Estimation and Confidence Intervals

Chapter 10 – One-Sample Tests of Hypothesis

Chapter 13 – Linear Regression and Correlation

Chapter 15 – Index Numbers

Chapter 16 – Time Series and Forecasting

Chapter 17 – Nonparametric Methods: Chi-Square Applications

Chapter 19 – Statistical Process Control and Quality Management

INSTRUCTIONAL AND EVALUATION METHOD:

FINAL EXAM:

COURSE GROUND RULES:

All students attending Walters State Community College, regardless of the time and location of the class, must abide by the rules and regulations outlined in the current *Walters State Catalog/Student Handbook* and the current *Walters State Timetable of Classes*. A copy of the Catalog/Handbook and the Timetable of Classes may be obtained from the admissions office on the main campus or at any of our off-campus sites. You may also access the Catalog/Handbook on-line at the following web address: <http://www.ws.edu/catalog>

Students should attend the first day of class or contact the instructor prior to the first class. Failure to do this may result in being dropped from the class.

Plagiarism, cheating, and other forms of academic dishonesty are prohibited.

Students with disabilities must register with Student Support Services (CCEN), Room 262 (phone 423-585-6892) if they need any special facilities, services, or consideration.

Students in need of tutoring assistance are encouraged to contact the Office of Student Tutoring located in the College Center (CCEN), Room 261. The phone number is 423-585-6920.

Students receiving any type of financial aid or scholarship should contact the Financial Aid Office before making any changes to their schedule. Schedule changes without prior approval may result in loss of award for the current term and future terms.

Students who have not paid fees on time and/or are not correctly registered for this class and whose names do not appear on official class rolls generated by the Admissions and Records Office will not be allowed to remain in class or receive credit for this course.

Cellular phone use during classroom interaction is prohibited. Cellular phones must be turned to the non-audible mode until after class, at which time calls can be received or checked. (See *the Walters State Catalog/Handbook*)

For information related to the cancellation of classes due to inclement weather, please check the college's Web site at www.ws.edu or call the college's student information line, 1-800-225-4770, option 1; InfoConnect, (423) 581-1233, option 1045; the Sevier County Campus, (865) 774-5800, option 9; or the Greeneville/Greene County Center for Higher Education, (423) 798-7940, option 4. Also, please monitor local TV and radio stations for weather-related announcements. For additional information on this policy see the college catalog.

In the event of a pandemic or other college declared critical event that impacts the college's ability to proceed with academic course activities as planned, the college reserves the right to alter this course plan. In the event of a pandemic or other event, please refer to the college's home web page, www.ws.edu or call InfoConnect, (423) 581-1233 for further information.

Regular class attendance is a student's obligation. (See *the Walters State Catalog/Student Handbook*) If for some reason a student misses class, it is his or her responsibility to see the instructor regarding missed assignments and/or activities and to be prepared for the next class. Excessive absences may substantially lower the semester grade. The college requires the instructor to keep accurate records and to report when students are not attending class.

ALTERNATE TEACHING PLAN: Email instructor for additional information (go to <https://elearn.ws.edu>).

DROP DEADLINE:

WEB RESOURCES: <https://elearn.ws.edu>