

Information about STAT 1450

Course Number and Name: STAT 1450 - The Practice of Statistics

Credit Hours: 4 semester credits (3 lecture and 2 lab hours per week)

Prerequisite: A grade of “C” or higher in MATH 1122, MATH 1123, MATH 1130, MATH 1148, or MATH 1150.

DESCRIPTION OF COURSE

This course is designed to acquaint students with statistical methods used in gathering and analyzing data. The course includes: sampling methods and data classification, descriptive statistics; exploratory data analysis; percentiles and z-scores; basic concepts in probability; discrete and continuous probability distributions; the Central Limit Theorem; estimating population parameters; hypothesis testing; linear correlation and regression; interval estimation and hypothesis testing with two samples; and chi-square tests of independence. STAT 1450 is intended primarily for students needing a college level, non-calculus based course in probability and statistics.

COURSE GOALS

- To introduce students to the concepts, methods, and uses of statistics.
- To develop competence in problem recognition, calculator computation, and interpretation of results.
- To use Microsoft Excel as a statistical tool.

INSTITUTIONAL LEARNING GOALS

This course addresses the following Columbus State general education goals:

- Critical Thinking
- Quantitative Skills

REQUIRED TEXTBOOK, CALCULATOR AND OTHER RESOURCES

- **OER Course Materials provided for free through Blackboard**
- **Microsoft Excel.** This software is available in DH 104, DH107, and off-campus computer labs (**REQUIRED**).
- **A graphing calculator is REQUIRED.** The Texas Instruments' TI-84 (regular, Plus, Silver, etc.) graphing calculator is strongly recommended, fully supported, and approved for use during proctored assessments.

Calculator Alternatives: Some students may prefer to use a CASIO-FX-9750GII, TI-Nspire (non CAS version), or a TI-83. These are less expensive options that are similar to the TI-84, and that are approved for use during proctored assessments. However, note that your instructor will primarily use the TI-84 when teaching, meaning that you will need to learn how to perform any necessary operations, using these other calculators, without your instructor's help.

Other graphing calculators may be permitted. If you own a different calculator, please check with your current instructor to see if your calculator will be allowed during their proctored assessments.

The TI-89, TI-92, TI-Nspire CAS, or other Computer Algebra System (CAS) calculators, are never allowed during proctored assessments.

Your instructor may require that your graphing calculator's memory be reset (all RAM cleared) prior to each proctored assessment.

The Columbus State Bookstore sells both the TI-84 and CASIO-FX-9750GII for your convenience. Additional resources supporting the use of the TI-84 and CASIO-FX-9750GII may be available at: <http://www.csc.edu/academics/departments/math/graphing-calculator.shtml>.

- Tutoring is available in the Learning Resource Center. See <http://www2.csc.edu/academics/departments/math/tutoring.shtml> for details.

INSTRUCTIONAL METHODS

Instructional methods may include face-to-face or video lectures or demonstration, face-to-face or virtual discussion, individual or group activities including the use of visual aids, graphing calculators, computers and/or other technologies. Students may be expected to participate in these activities during class and/or outside of class. Instructors may require class participation, collaborative learning, and peer review.

UNITS OF INSTRUCTION

1. Introduction to Statistics (1.1-1.4, Excel Lab 1)
2. Summarizing and Graphing Data (2.1-2.4, Excel Lab 2)
3. Descriptive Statistics (3.1-3.4, Excel Lab 3)
4. Probability (4.1-4.5, Excel Lab 4)
5. Discrete Probability Distributions (5.1-5.5, Excel Lab 5)
6. Continuous Probability Distributions (6.1-6.5, Excel Lab 6a, Lab 6b)
7. Estimates and Sample Sizes (7.1-7.4, Excel Lab 7)
8. Hypothesis Testing (8.1-8.5, Excel Lab 8a, Lab 8b)
9. Inferences from Two Samples (9.1-9.4, Excel Lab 9a, Lab 9b)
10. Contingency Tables (10.1-10.2, Excel Lab 10)
11. Correlation and Regression (11.1-11.4, Excel Lab 11)

METHODS OF EVALUATION

- Letter grades for the course will be awarded using a 90%-80%-70%-60% scale.
- Weekly Excel Labs will account for 10% of the total course grade.
- Unit tests will account for 60% of the course grade (15% for each of 4 tests).
- A comprehensive Final Exam will account for 25% of the course grade.
- The following are the requirements determined by your individual instructor: