

Columbus State Community College
Mathematics Department
STAT 1450 Student Syllabus

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Office Hours: By virtual appointment only

Course Number: STAT 1450 **Course Name:** The Practice of Statistics
Sem/Yr: Spring 2022 **Course Section:** 001L
Meeting Times: Live Online via Zoom, MW 10:00 – 11:20 am; F 10:00 – 11:50 am
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.

WHAT IS STATISTICS?

Statistics is the art and science of working with data. Big Data is everywhere as websites, social media apps, business, and other entities collect all kinds of information about customers. Statistics looks at data like this in a variety of ways, including graphs and summary statistics and talking about what different populations might look like. In this class, you will learn the language of statistics – the words we use and the meanings behind them as well as the process of statistics. How do we look at this data in ways that help us make decisions and improve well-being? How do we learn from statistical summaries presented by others? In other words, how do we understand what others are attempting to tell us through graphs and statistics? These are some of the ideas you’ll engage with this semester.

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.

REQUIRED MATERIALS

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

ATTENDANCE POLICY

This section of STAT 1450 meets “live online,” which means we have three sessions per week where everyone is online together in Zoom (linked through Blackboard). By selecting this section, I assume you have that time available each week and you have the necessary technology to engage in the online class sessions. The pace of this class is such that it will not be advisable to miss any sessions. If you know you will be absent, please inform me in advance. When you are absent, it will be your responsibility to look on Blackboard for the uploaded lecture, notes, and announcements. While attendance does not factor into your grade, I will record attendance for my own records. You are expected to be an active participant for the entire class.

LATE WORK AND MAKE-UP POLICY

No late work will be accepted. Any assignments not completed by the assigned due date without a pre-approved extension will receive a zero. Extensions may be granted on a case-by-case basis at the discretion of the instructor. It is the responsibility of the student to contact the instructor well in advance.

There are three Tests and a Final in STAT 1450. All Tests and the Final will be available for a window of three days so that you can choose when to take the exam based on your own schedule. If you are not able to complete an exam during its scheduled window, please reach out to me so we can work on alternatives.

GRADING

Grading Scale:

- A = 90 – 100%
- B = 80 – 89%
- C = 70 – 79%
- D = 60 – 69%
- E/EN = up to 59%

(Note a “C” is the minimum most students need to “pass” or transfer this course to another institution. Check with your advisor for specific requirements.)

NOTE: I will record a failing grade (of either E or EN) if you earn less than a 60% in the course. I will record the E grade for those students who attempted at least 70% of the coursework, and I will record the EN grade for those students who did not attempt at least 70% of the coursework. CSCC considers both the E and EN grades failing grades.

Grades in this course will consist of four components: **Labs (10%), Quizzes (15%), Tests (50%) and a Final Exam (25%).**

- **10% – Labs:** Weekly Excel labs to practice content of the week utilizing real world data and examples. These will be graded for quality and accuracy.
- **15% – Quizzes:** Weekly proctored quizzes over section content. These will be graded for quality and accuracy.
- **50% – Tests:** Three Tests, each focused on content from different sets of Units.
- **25% – Final Exam:** A departmental comprehensive Final Exam covering all sections from every Unit of the course.

WEEKLY EXCEL LAB ACTIVITIES

There will be 14 weekly in-class collaborative Excel Labs scheduled throughout the semester. We may not be able to get to all of them depending on our pace, but there will be a minimum of 11. Labs will be graded for correct analysis. Labs will account for 10% of the total grade.

The main purpose of these labs is to pull course content together to analyze a given dataset in the context of a real-world statistical application. When there is a lab for the week, there will be dedicated class time to work on it where we may break into small groups. The hope is to be able to complete a large portion of each lab during our live class session. There may be labs that require some “finishing touches” outside of class time. For the most part, there is one Lab for each Unit.

Each Unit will have a corresponding Pre-Lab Practice on iMathAS, which can be accessed via Blackboard. These practice assignments are comprised of questions that review the content to help you determine what you are understanding and where you might need to review. These assignments are not graded. However, you **MUST** obtain a score of at least 80% for the corresponding Lab(s) to be graded by the due date of the Lab. If you fail to reach a score of at least 80% prior to the deadline, you will receive a zero on the Lab.

QUIZZES

There will be 11 quizzes throughout the semester, one per Learning Unit. Each quiz will cover material from the section covered throughout that Learning Unit. These are proctored, closed-note quizzes that will be graded for quality and accuracy. Each quiz will be taken during the live sessions. Quizzes will account for 15% of the total grade.

TESTS AND FINAL

There will be three Tests that together account for 50% of the total grade. At the end of the semester, there will be a departmental comprehensive Final worth 25% of the total grade. Questions will be a mix of short answer and multiple choice. If you have completed the other assignments for the course, you will be prepared for each Test and the Final. A set of review questions over the entire course will be provided to help students prepare for the Final.

Each Test and the Final are to be taken individually at the Testing Center. It is the responsibility of the student to schedule a time to take the test during the appropriate testing window shown below. The testing window for each Test and the Final will be roughly three days. The last day of each testing window is the final due date and there will NOT be class on each of these days.

- **TEST 1** – Testing Window is from Friday, February 11 to Monday, February 14.
- **TEST 2** – Testing window is from Wednesday, March 9 to Friday, March 11.
- **TEST 3** – Testing window is from Monday, April 18 to Wednesday, April 20.
- **FINAL** – Testing window is from Sunday, May 8 to Tuesday, May 10.

Prior to each Test and the Final, there will be an announcement with instructions for how the student can schedule an appointment with the Testing Center.

COURSE CALENDAR AND COURSE OVERVIEW

<i>Units of Instruction</i>	<i>Sections</i>	<i>Lab</i>
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, Excel Lab 6B
7. Estimates and Sample Sizes	7.1 – 7.4	Excel Lab 7
8. Hypothesis Testing	8.1 – 8.5	Excel Lab 8A, Excel Lab 8B
9. Inferences from Two Samples	9.1 – 9.4	Excel Lab 9A, Excel Lab 9B
10. Contingency Tables	10.1 – 10.2	Excel Lab 10
11. Correlation and Regression	11.1 – 11.4	Excel Lab 11

SEE 'Course Overview, Calendar, and Due Dates' section located in the 'Course Information' tab on Blackboard.

- Course Overview document that contains information about which Units are covered on each Test.

- Course Calendar gives a tentative day-by-day schedule of when we will cover what topics and when we will have Labs.
- Due Dates outlines when each assignment will be due, subject to change.

NOTE: I may make modifications to the Syllabus, Course Calendar, assignments, etc. based on the needs of the class as a whole. Any changes will be communicated as early as possible.

ACADEMIC INTEGRITY

All students taking courses at Columbus State Community College must familiarize themselves with and uphold the Student Code of Conduct. While this includes the entire Code, students in STAT 1450 should pay particular attention to the sections on plagiarism and cheating. All work you submit for this course must be your own. Copying answers from others (including current or former students and various online resources) or sharing your answers with others so they can copy them is not allowed.

All known violations of the Student Code of Conduct will result in your instructor reporting the violation to the Office of Student Conduct at CSCC. Penalties for such violation vary depending on the nature of the violation and any past history a student has with the Office of Student Conduct.

Columbus State Community College and its employees hold copyright in the exams, lectures, and other course materials. This copyright encompasses student notes and other summaries or reproductions of the College's course materials. These materials are made available to students for their personal use only and may not be distributed for commercial purposes without the College's express written consent. Violation of the College's copyright may result in referral to the Office of Student Conduct and disciplinary action up to and including dismissal.

If you are unsure whether what you are doing is in violation of the Student Code of Conduct, please ask your instructor so they may guide you appropriately.

STATEMENT ON DIVERSITY, EQUITY, AND INCLUSION

The CSCC Mathematics Department faculty value diversity of thought, perspective, and experience, and respect your identities (including but not limited to race, gender identity or expression, class, sexual orientation, religion, and ability). The education, rights, and well-being of all students are encouraged and cultivated. Our goal is to foster and support safe and inclusive learning environments with equitable opportunities for all students to participate, contribute, and succeed.

LAST DAY TO WITHDRAW FROM COURSE

If you should decide to drop this course, but do not officially do so through Records & Registration, a failing grade will be recorded on your transcript. **The last day to drop this course is Monday, March 28th, 2022.** No drops will be allowed after that date. Drop forms are available from the Counseling/Advising Center and from Records and Registration.

INSTITUTIONAL LEARNING GOALS

This course addresses the following Columbus State general education goals:

- Critical Thinking
- Quantitative Skills

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.

NOTE TO STUDENTS

To master this course material, the Mathematics Department recommends that the student should be prepared to spend an average of 12 hours per week on this course.

ASSESSMENT

Columbus State Community College is committed to assessment (measurement) of student achievement of academic outcomes. This process addresses the issues of what you need to learn in your program of study and if you are learning what you need to learn. The assessment program at Columbus State has four specific and interrelated purposes: (1) to improve student academic achievements; (2) to improve teaching strategies; (3) to document successes and identify opportunities for program improvement; (4) to provide evidence for institutional effectiveness. In class you are assessed and graded on your achievement of the outcomes for this course. You may also be required to participate in broader assessment activities.

FINANCIAL AID REPORTING REQUIREMENTS

All instructors are asked to report student attendance and engagement at various points throughout the semester in accordance with federal financial aid guidelines. If you are not participating, or have stopped participating, you may be administratively dropped from the course if this is the case.

Reporting windows for Autumn and Spring terms are roughly Weeks 4 and 10. The reporting window for Summer term is roughly Week 4. To be Counted as Participating: The student has established regular, consistent pattern of course participation (as demonstrated by completed course assignments, participation in classroom/practicum activities or participation in online discussion boards - which are all indicators of active engagement).

TUTORING RESOURCES

The following are ways of obtaining free tutoring:

- You can always access tutoring by logging in to your Blackboard course and clicking the small green “n” at the top right of your screen. That “n” stands for “NetTutor,” where you can go to get course-specific tutoring from trained professionals.
- The Learning Resource Center (DH room 313) during the posted hours. **You will be required to sign in and out using your CougarID number.** Tutoring is also available at the Dublin, Westerville, and Reynoldsburg branch locations. LRC hours at these locations change each semester. For additional information, please visit:
<http://www.csc.edu/academics/departments/math/tutoring.shtml>.
- Peer Tutoring – sign up for Peer Tutoring in WD 1095. This is not always an option, as it depends on the availability of a student volunteer who has taken STAT 1450. Sometimes this is only one peer tutor per semester, and their schedules are limited.
- Depending upon availability, a walk-in tutoring session may be held on Saturdays from 9am–1pm. Contact Peer Tutoring at 287-2474 for additional information.
- Online Tutoring - You can post a question to our Math Tutoring Forum on Blackboard OR setup an appointment for a live one-on-one online tutoring session via the web. To find out more, sign into Blackboard and look for “**Math Tutoring**” in the “**My Organizations**” section.

COUNSELING SERVICES

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating, and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce your ability to participate in daily activities. Services are available to assist you with addressing these and other concerns you may be experiencing. Counseling Services are FREE of charge for all enrolled students. Counseling Services at Columbus State are only offered at the College’s downtown Columbus campus. If you are attending classes in Delaware or at a Regional Learning Center and are in search of counseling services closer to home, a list of community providers can be found at the Counseling Services website below. To schedule an appointment or to learn more about mental health services at Columbus State or in your local community, contact Counseling Services at 614-287-2818. You may also obtain more information by visiting the Counseling Services office located in NH Room 010 or via the web at: www.csc.edu/services/counseling.

STUDENT ADVOCACY

Team members in Student Advocacy are dedicated to helping students resolve issues so they can stay focused on achieving academic and personal success. A keyway we provide help is to connect students to College and community resources. We also offer tips on how to best access and utilize these resources and services.

Below is a partial list of common areas of need for students and some key resources for support. This list does not encompass all possible needs and resources; the information and links are provided for your convenience and should not be considered an endorsement of any resource referenced. For individual assistance, contact a Peer Advocate. You can also visit www.csc.edu/services/essential-needs/.

Hands on Central Ohio
Job & Family Services
Legal Aid Society of Columbus
Food
Housing
Utilities

Child Care
Health Care Coverage
Mental Health
Transportation
Financial Literacy/Wellness
Employment

ELECTRONIC DEVICES IN THE CLASSROOM

As a courtesy to your fellow classmates and instructor, please turn off your cell phone, beeper, or anything else that might cause a disturbance during class. The use of any electronic device capable of wireless communication (phone, computer, pager, etc.) is **strictly prohibited** during any proctored assessment (test, quiz, etc.)

COLLEGE SYLLABUS STATEMENTS

You can find Columbus State Community College required College Syllabus Statements on College Policies and Student Support Services at www.cscs.edu/academics/syllabus.shtml or on the College website – Quick Links – “Syllabus Statements”.