Course Number, Title and Credits

MATU 203 - Introduction to Statistics - 3 credits

Course Catalog Description

Prerequisite: MATU 099 or higher. This course presents an introduction to statistics and its practical applications. Topics include methods of sampling, graphical representation of data, descriptive statistics, elementary probability principles, discrete and continuous random variables, probability distributions, Central Limit Theorem, confidence intervals, hypothesis testing, correlation and regression, goodness-of-fit, and contingency tables. Students will explore the use of data analysis and statistical methods in the disciplines of business, health sciences, education, and social sciences. Computer software for statistical analysis of application problems is required. 3 credits.

Learning Outcomes and Assessment

Learning Outcomes are statements that specify what learners will know, understand, or be able to demonstrate at the end of a learning experience.

Types of Learning Outcomes include:

- Course Learning Outcome – Result of finishing a course.
- Program Learning Outcome – Result of finishing a program.
- Institutional Learning Outcome – Result of finishing a degree at an institution, reflecting the core learning values and experiences of all graduates.

A Signature Assignment is an assignment used to measure a student's mastery of a program or institutional learning outcome. If a course you are taking includes a Signature Assignment, it will be clearly marked (**SIGNATURE ASSIGNMENT**).

Click here to access information on the Program Learning Outcomes (PLOs) and/or Institutional Learning Outcomes (ILOs) and Curriculum Map related to this course.

Prerequisites

(MATU 10000 OR MATU 30000 OR MATU 099 OR MATU 103 OR MATU 104)

Essential Equipment

All students must have reliable access to a working computer with Internet access throughout each week of the class. Each student will need to be able to access and work in the University's online Learning Management System, Blackboard. For more information about personal computer requirements [click here](#).

Additional Required Equipment and Facilities

- MyMathLab access code (this includes the digital textbook and can be purchased from the school bookstore, or directly from www.mymathlab.com when registering for your professor's course)
- Statistics software package (comes free with subscription to MyMathLab)
- MyMathLab login and requested software installation

Academic Integrity

The University of Massachusetts Global is an academic community based on the principles of honesty, trust, fairness, respect, and responsibility. Academic integrity is a core University value, which ensures respect for the academic reputation of the University, its students, faculty and staff, and the degrees it confers. The University expects that students will conduct themselves in an honest and ethical manner and respect the intellectual work of others.

Submitting to faculty work completed by the use of any artificial intelligence tool without permission and/or when prohibited by class policy. When faculty require the use of technology, including artificial intelligence, as a part of an assignment for the course, there is no violation. Students are reminded to consult syllabi, assignment sheets/rubrics, program documents and their faculty. Use of artificial intelligence, when permitted, must be correctly cited in the assignment.

The [UMass Global online library](#) provides resources to support research, proper citation styles, and the safe and responsible use of generative artificial intelligence or Gen AI.

- The [Academic Integrity and Plagiarism Avoidance](#) page provides guidance to help students better understand academic integrity and includes tips on how to avoid plagiarism.
- The [Citing Sources](#) page offers guidance on how to properly cite using APA, MLA, and Chicago styles.

- The [Artificial Intelligence Resource Guide for Students](#) provides advice for understanding and appropriately using generative artificial intelligence tools such as ChatGPT and Bard.

University Policies

Students are responsible for complying with university policies including, but not limited to: incompletes, course drops, and student conduct. Information may be found in the [University Catalog.](#)

Required Textbooks
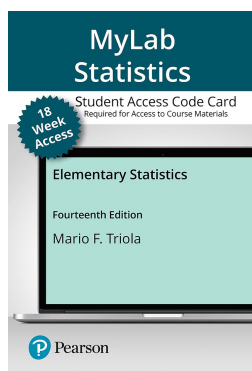
MyLab Statistics with Pearson eText -- 18 Week Instant Access -- for Elementary Statistics, 14th Edition
Required
9780137374748
For courses in Introductory Statistics.

This ISBN is for the 18-week MyLab instant access code. Pearson eText is included.

Real data brings statistics to life

From cybersecurity to drones and Internet traffic, statistics influences and shapes the world around us. Market-leading author Marty Triola is committed to keeping Elementary Statistics currentwith an unprecedented amount of new real datato help students of all majors understand the role of statistics in the world around us. The revision continues to bolster the hallmarks that have made it so effective, giving students the foundational skills to apply statistical procedures and interpret data. Updates in the 14th Edition keep the text and MyLab® more relevant and supportive than everwith a wealth of new data sets, exercises, and examples along with larger data sets, content updates, and new videos to support students.
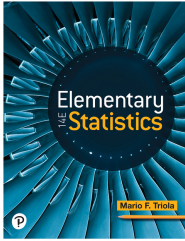Mario F. Triola
Pearson
2022
14th ed.

Elementary Statistics [RENTAL EDITION], 14th Edition
Optional physical textbook version of eText. Must still purchase eText.
9780136803201
This print textbook is available for students to rent for their classes. The Pearson print rental program provides students with affordable access to

learning materials, so they come to class ready to succeed.

Renting a physical textbook is optional. Students must purchase MyLab Statistics with Pearson eText above
Mario F. Triola
Pearson
2022
14th ed

All student textbooks are available at the University of Massachusetts Global Bookstore:

https://www.bkstr.com/umassglobalstore

Course Learning Outcomes

Upon completion of this course, students will be able to:

1. Define and interpret basic statistical concepts.
2. Calculate and analyze descriptive statistics.
3. Create and understand graphs and charts.
4. Understand basic probability theory.
5. Compute and analyze confidence intervals.
6. Perform hypothesis tests (demonstrate understanding of null/alternative hypothesis, one/two tailed tests, significance levels, significance test, p-values).
7. Calculate and interpret inferential statistics.
8. Determine which statistical procedure to use and interpret statistical outcomes.
9. Apply knowledge of statistics to a cumulative final project.

Major Study Units

First Study Unit: Descriptive Statistics

a. Variables and Measurement
b. Summarizing and Graphing Data
c. Measures of Central Tendency
d. Measures of Variation
e. Measures of Relative Standing
f. Probability
g. Normal Distribution
h. Central Limit Theorem

Second Study Unit: Inferential Statistics

   a. Confidence Intervals

   b. z-tests

   c. t-tests

   d. Correlation and Regression

   e. ANOVA

Instructional Strategies

This class includes readings, textual and video instruction, exercises, discussions, and projects. Instructional Strategies are further explained in the Blackboard course shell.

Attendance Policy

Requirements for student attendance and participation will be defined by each instructor based on the following policy:

- Monday of the first week of the session is the first day of class.
- Regular attendance/engagement is expected for student success. Online engagement is evident through posting to a discussion board, blog, completing assignments including journal entries, or taking quizzes and exams. If regular attendance/engagement are not evident, the student's grade may be adversely affected. If a student misses more than one week of engagement in an online class, the student may, at the discretion of the instructor, fail the course.
- Students in courses with required synchronous class sessions are expected to remain for the full duration. If a student misses more than one required synchronous online class, the student may, at the discretion of the instructor, fail the course.
- Students must submit an academically-related assignment through the Learning Management System (LMS) before the end of Week 2 (i.e., a quiz, test, course content-related Discussion Board post, or other course content-related assignment). Introduction posts do not count as an academically-related assignment. If a student does not submit an academically-related assignment, the student will be administratively dropped from the course. Students administratively dropped for non-attendance/participation will not be reinstated in the course. In infrequent cases, students in certain classes may be exempt from the requirement to submit an academically-related assignment before the end of Week 2; students may consult with their instructor for further information.
- Students should consider withdrawing from a course if they will be unable to participate each week. Instructors may, but are not obligated to, accommodate students under extraordinary circumstances, but the student must request accommodation and provide requested supporting documentation.
- Schools and programs may have different attendance policies. Refer to school and program specific information for additional attendance policies.

Letter Grade/Percentage Equivalents

Grade Point System
(Rounded up at .5 and up)

A = 94%-100%	B = 84%-86%	C = 74%-76%	D = 64%-66%
A- = 90%-93%	B- = 80%-83%	C - =70%-73%	D - = 60%-63%
B+ = 87%-89%	C+ = 77%-79%	D+ = 67%-69%	F = 59% and below

Methods of Evaluation for Determining Grades

Assignment Detail for <u>Fully Online Course</u>:

Assignments for Blended course	Total Possible Points
Introduction Assignment Two Introduction Assignments will be due in Week 1, in addition to the normal weekly assignments: • Introduction Discussion Board (20 pts) • MyMathLab Orientation (20 pts)	40
Discussion Board (8 @ 40 pts each) One Discussion Board per week. Based on the weekly prompt in Blackboard, students will be required to present an initial post, as well as respond to two other classmates each week. Real examples using statistics will be discussed. Some discussions will require utilizing statistical software to generate statistics and/or graphs to answer questions. Discussion boards count as part of weekly attendance.	320
MyMathLab Homework (7 @ 40 pts each) One MyMathLab assignment per week (except for Week 8). Math problem-set homework assignments are found by going to www.mymathlab.com. You may repeat each question on the homework until you get the correct answer.	280
Final Project: Parts 1 and 2 A Final Project where students analyze a provided set of data will be completed. Parts 1 and 2 (only) are due in Week 4.	60

Final Project: Complete paper, Parts 1 through 4 A Final Project where student analyze a provided set of data will be completed. The complete paper (Parts 1-4) is due in Week 8.		200
Final Exam A 20-question final exam, based upon the cumulative material learned in class, will be completed in Week 8. The final exam is open book and technology may be used.		100
	Total: 1000	

Class by Class Outline for <u>Fully Online Course</u>:

Week	Topics	Assignments
Week 1	Overview- Collecting, Summarizing and Graphing Data	Read Chapters 1 and 2 MyMathLab Orientation Assignment MyMathLab Homework #1 Online Threaded Discussion Introductions Online Threaded Discussion Topic #1
Week 2	Describing and Comparing Data	Read Chapter 3 MyMathLab Homework #2 Online Threaded Discussion and Technology Topic #2
Week 3	Introduction to Probability; The Normal Distribution, Central Limit theorem	Read Chapters 4-6 MyMathLab Homework #3 Online Threaded Discussion and Technology Topic #3
Week 4	Confidence Intervals, Estimates, and Sample Size	Read Chapter 7 MyMathLab Homework #4 Online Threaded Discussion Topic #4 Final Project – Parts 1 and 2
Week 5	Hypothesis Testing (one population)	Read Chapter 8

		MyMathLab Homework #5
		Online Threaded Discussion Topic #5
Week 6	Hypothesis Testing (two populations)	Read Chapter 9
		MyMathLab Homework #6
		Online Threaded Discussion and Technology Topic #6
Week 7	Correlation and Regression; ANOVA	Read Chapters 10 and 12
		MyMathLab Homework #7
		Online Threaded Discussion and Technology Topic #7
Week 8	Review	Review Chapters 1-12
		Online Threaded Discussion Topic #8
		Final Project Due – Parts 1-4
		Final Exam

Methods of Evaluation for Determining Grades

Only offered as an online course

UMass Global's Office of Accessible Education

Students who require disability-related services or accommodations to access their educational experience can register with the Office of Accessible Education (OAE). The Office of Accessible Education (OAE) is committed to ensuring equal educational access and opportunity for all members of our academic community. Students will be provided equitable and reasonable accommodations and services that are in compliance with [Section 504 of the Federal Rehabilitation Act of 1973](#) and the [Americans with Disabilities Act of 1990 (ADA)/Americans with Disabilities Act Amendments Act of 2008 (ADAA)](#). Registration with OAE is on a voluntary, self-identifying basis. Please visit the [Office of Accessible Education (OAE) website](#) for more information about how to register for services, eligibility requirements, and information about potential academic accommodations and services.

Our university is committed to ensuring equal access for all students. Let us know about any accessibility barriers you encounter using any of our online systems or websites by submitting a [Feedback or Accessibility Concern Submission Form.](#) We'll do our best to improve things and get you the information you need.

UMass Global's CARES Team

The [CARES team](#) is a campus-wide team of appointed staff and faculty responsible for identifying, assessing, and responding to concerns and/or disruptive behaviors by students, faculty/staff, and community members who struggle academically, emotionally, or psychologically, or who present a risk to the health or safety of the university or its members.

Individuals may refer themselves or other community members of concern by emailing cares@umassglobal.edu or by filling out a referral form [here](#). The CARES Team provides short term

assessment, intervention, support, and recommendations of resources to those referred and engaged in the process.

UMass Global's Title IX Statement

The University of Massachusetts Global strives to maintain and foster a climate that promotes respect and human dignity. Sexual misconduct and relationship violence in any form is antithetical to the university's mission and core values, violates university policies, and may also violate federal and state law. The office of Title IX is primarily concerned for students' safety and well-being and is tasked with investigating all reports of sexual misconduct experienced by our community members. Title IX prohibits sex-based and gender-based discrimination and harassment, which includes discrimination based on pregnancy and/or pregnancy-related complications, parental status, and marital status. Students expecting or experiencing pregnancy-related complications, that may require educational accommodations, should contact the University's Title IX Coordinator and/or the Office of Accessible Education.

The University and Title IX's prohibition of sex discrimination also covers sexual harassment, sexual violence, and any other form of sexual misconduct. We offer options and resources to all students affected by these issues and are committed to providing a fair, thorough, and prompt investigation and adjudication process. If you or someone you know has been impacted by sexual assault, dating, and domestic violence, stalking, or sexual exploitation, please visit the [University's Title IX Resource Page](#) to access additional resources and information.

UMass Global's staff and faculty are tasked with reporting any possible sex or gender-based discrimination or Title IX violations to the University's Title IX Coordinator at civilrightscomplaints@umassglobal.edu.

[Click on this Link to our University Title IX Policy](#)