

Borough of Manhattan Community College  
City University of New York

**Department of Mathematics**

**Introduction to Statistics**

**Mat 150**

**Instructor:**

**Office:**

**Class hours: 4**

**Credits: 4**

**Telephone:**

**Email:**

**A. Course Description:** This course covers basic statistics, including: measures of central tendency, measures of dispersion, graphs, correlation, the regression line, confidence intervals, the significance of differences, and hypothesis testing, including z-tests, t-tests, and chi-square tests.

**B. Prerequisites and co-requisites**

The student must have passed or have been exempted from MAT 041, MAT 051 or MAT 012. This course satisfies the mathematics requirement for majors in Accounting, Business Management, Liberal Arts (but not the Science concentration), Office Automation, Medical Records Technology and Community Mental Health Assistant.

**C. Required Text and Supplementary Material**

Your instructor will select one of the two textbooks below. ASK YOUR INSTRUCTOR BEFORE YOU PURCHASE A TEXTBOOK!

1. Essentials of Statistics, Sixth Edition, By Mario E. Triola, 2018, Pearson Education, Inc.
2. Elementary Statistics: Picturing the World, Seventh Edition, By Ron Larson and Betsy Farber, 2018, Pearson Education, Inc.

THE TEXTBOOK MUST BE PURCHASED IN THE BMCC STUDENT BOOKSTORE WITH THE MYSTATLAB BUNDLE!!

**D. Other Resources**

The resources available in the Math Lab (Room S535) include tutors, videotaped lessons, technology (statistics computer programs, graphing calculators and internet access) and additional worksheets.

**E. Use of Technology**

A scientific calculator is required. The new textbook comes with a free internet account that provides online tutorials, extra practice problems and video recorded lessons. Some MAT 150 sections listed in the Schedule of Classes as taught with technology require students to use computers and/or graphing calculators.

**F. Evaluation and Requirements of Students**

At the beginning of the semester, the instructor will advise the student how the final grade will be determined (based on class work, examinations, quizzes, writing assignments and the final examination). Students are required to attend all scheduled classes.

### G. Outline of Topics

<i>Class hours</i>	<i>Sections in Triola</i>	<i>Sections in Larson</i>	<i>Topics</i>
2 hours	1.1 – 1.3	1.1 – 1.3	Introduction to Statistics, Types of Data, Data Collection
8 hours	2.1 – 2.4 3.1 – 3.3	2.1 – 2.5	Exploring Data with Tables and Graphs, Measures of Center, Measures of Variation.
4 hours	4.1 – 4.4	3.1 – 3.4	Probability: Addition Rule, Multiplication Rule, Conditional Probability and Counting.
6 hours	5.1 – 5.2	4.1 – 4.2	Discrete Probability Distributions; Random Variables, Binomial Distributions.
8 hours	6.1 – 6.4	5.1 – 5.4	Normal Probability Distributions; Sampling distributions and the Central Limit Theorem.
8 hours	7.1 – 7.2	6.1 – 6.3	Confidence Intervals for Means and Proportions, Estimating Sample Sizes.
8 hours	8.1 – 8.3	7.1 – 7.4	Introduction to Hypothesis Testing, Tests for a Mean, Test for a Proportion.
4 hours	10.1 – 10.2	9.1 – 9.2	Correlation and Regression.
2 hours	11.1 – 11.2	10.1 – 10.2	Chi-squared tests of Independence and Goodness of Fit.

### College Attendance Policy

At BMCC, the maximum number of absences is limited to one more hour than the number of hours a class meets in one week. For example, you may be enrolled in a three-hour class. In that class, you would be allowed 4 hours of absence (not 4 days). In the case of excessive absences, the instructor has the option to lower the grade or assign an F or WU grade.

### Academic Adjustments/Students with Disabilities

Students with disabilities who require reasonable accommodations or academic adjustments for this course must contact the Office of Services for Students with Disabilities (Room N360; (212) 220-8180). BMCC is committed to providing equal access to all programs and curricula to all students.

### BMCC Policy on Plagiarism and Academic Integrity Statement

Plagiarism is the presentation of someone else's ideas, words or artistic, scientific, or technical work as one's own creation. Using the idea or work of another is permissible only when the original author is identified. Paraphrasing and summarizing, as well as direct quotations, require citations to the original

source. Plagiarism may be intentional or unintentional. Lack of dishonest intent does not necessarily absolve a student of responsibility for plagiarism. Students who are unsure how and when to provide documentation are advised to consult with their instructors. The library has guides designed to help students to appropriately identify a cited work. The full policy can be found on BMCC's Web site, [www.bmcc.cuny.edu](http://www.bmcc.cuny.edu). For further information on integrity and behavior, please consult the college bulletin (also available online).

<b>Student Learning Outcomes</b>	<b>Measurements</b>
Students will be able to define the vocabulary, terminology and symbols used in statistics.	Quizzes, tests, labs, homework, or projects
Students will be able to construct and interpret simple statistical charts.	Quizzes, tests, labs, homework, or projects
Students will be able to calculate key statistics and parameters such as measures of central tendency, variation, and position.	Quizzes, tests, labs, homework, or projects
Students will be able to calculate elementary probabilities, as well as probabilities determined from continuous distributions (e.g., the normal distribution and central limit theorem).	Quizzes, tests, labs, homework, or projects
Students will be able to calculate confidence intervals and construct hypothesis tests.	Quizzes, tests, labs, homework, or projects
Students will be able to understand concepts in regression and correlation.	Quizzes, tests, labs, homework, or projects
Students will be able to use critical thinking to evaluate the strengths and weaknesses of statistical studies.	Quizzes, tests, labs, homework, or projects

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Students with disabilities who require reasonable accommodations or academic adjustments for this course must contact the Office of Accessibility (Room N324; 220-8180). BMCC is committed to providing equal access to all programs and curricula to all students.

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**Below are the college's general education learning outcomes; the outcomes that are checked in the left-hand column indicate goals that will be covered and assessed in this course.**

	<b>General Education Learning Outcomes</b>	<b>Measurements (means of assessment for general education goals)</b>
<input type="checkbox"/>	Communication Skills- Students will be able to write, read, listen and speak critically and effectively.	

<input checked="" type="checkbox"/>	Quantitative Reasoning- Students will be able to use quantitative skills and the concepts and methods of mathematics to solve problems.	Quizzes, tests, homework, and\or projects
<input type="checkbox"/>	Scientific Reasoning- Students will be able to apply the concepts and methods of the natural sciences.	
<input type="checkbox"/>	Social and Behavioral Sciences- Students will be able to apply the concepts and methods of the social sciences.	
<input type="checkbox"/>	Arts & Humanities- Students will be able to develop knowledge and understanding of the arts and literature through critiques of works of art, music, theatre or literature.	
<input checked="" type="checkbox"/>	Information & Technology Literacy- Students will be able to collect, evaluate and interpret information and effectively use information technologies.	Quizzes, tests, homework, and\or projects
<input type="checkbox"/>	Values- Students will be able to make informed choices based on an understanding of personal values, human diversity, multicultural awareness and social responsibility.	