

This is a sample syllabus only. (Do not purchase the textbook until you confirm with the instructor.)

Borough of Manhattan Community College

MAT 150

Introduction to Statistics

Prof. Miller

Course Syllabus

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Welcome to MAT 150, Introduction to Statistics, with Professor Miller!

This course is not self-paced. It is structured on the basis of weekly assignments. While the course does not meet on any prescribed days and times, I strongly encourage you to allocate a regularly scheduled portion of your time each week to completing the assignments. Be sure to budget enough time for this course. It is a four credit course and time requirements will be similar to what you expect for a "seated" version of this course: 4 hours per week of "in class" time plus up to 8 hours per week to complete the assignments. The weeks begin on Wednesday meaning that assignments for the week will be posted on Wednesday and the due date for all weekly assignments will be the following Tuesday evening at 9 pm.

There are a few types of activities required on a weekly basis (not all of these each week). They are:

- Participating in (posting on) an on-line discussion board.
- Completing homework worksheets assigned by the instructor
- Taking exams
- Completing steps in a term project in which you collect and analyze your own data set. While the final completed version will be due on the last day of the semester, you will be required to submit your project as it progresses to various stages of completion as the course progresses.
- Reading assignments from the textbook. The recommended textbook Essentials of Statistics, Mario Triolla, Third Edition, 2008. Pearson Education, Inc.
- Reading my lecture notes. My notes are brief and should serve as a starting point for your studies. For more resources, consider the text (above), on-line texts (see the External Links on this BlackBoard site), and other on-line resources such as Wikipedia for specific topics. I will also assign sections of an on-line course developed at Carnegie Mellon University's Open Learning Initiative (details will be provided)

Probably the best way to keep track of your progress is by going to the menu item for each week and selecting the Assignment Checklist. It will detail the assignments due that week. The same information is available, but in abbreviated form, for the entire semester in the Course Outline.

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Grading:

Students' grades will be determined as follows:

Assessment	Description	Percent of Final Grade
Homework Assignments	These assignment worksheets (Word documents) will be posted on Bb each Wednesday. You will be required to submit your responses (as a Word doc) by the following Tuesday at 9pm. They will be graded not so much for correctness but as to whether an honest effort was made on the problems. Upon return of your assignment, you will also get an answer key from me.	20%
Discussion Board participation	I will create discussion board "threads" on a question related to each week's topic. You are required to post both your solution and reflections on other student's solutions. I will grade your participation on both the quantity and quality of your contributions to the on-line discussion.	20%
Exams (3 tests)	The exams are similar to the homework assignments but are more comprehensive in terms of the broader range of topics. The class will be separated into groups for the exams and each group of approx. 5 students will get their own version of the exam. While you may consult with other members of the class while working on the exam, each member will submit his or her own exam to me.	40%
Course Project	During the semester, you collect and analyze your own data set. While the final completed version will be due on the last day of the semester, you will be required to submit your project as it progresses to various stages of completion as the course progresses.	20%

Lateness Policy: Homework assignments must be turned in on time for credit (because I will post the answer key immediately after the due date.) You are allowed two missed homeworks during the semester. Any exam turned in after the deadline but within one week of the deadline will face a 20% deduction for lateness. Exams will not be accepted if more than a week late. The third exam and the final course project will not be accepted if late

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Communication:

If you have questions about the course material at any time, the place to pose that question is on the Discussion Board. The reason for this is that if I post a response to your question on the discussion board, any other student that has the same question will learn from the response whereas if you send it to me via e-mail, the response could only benefit one student.

Use e-mail for any personal communication. For example, if you have a question about your grade or the schedule of upcoming assignments or a question that might reveal personal information that you would not want to share with other students.

Please feel free to come to my regular office hours at BMCC (see Staff Information on the main menu). You may also schedule an appointment to speak with me at other times.

If you have a technical question about accessing BlackBoard or the CUNY Portal for example, contact the BMCC Helpdesk (212) 220-8122 or E-mail: it@bmcc.cuny.edu. As much as I would like to help with these issues, I am not the expert on technical issues and need to save my time and energy for helping you with course content.

Technical Requirements:

Course materials will generally be in Microsoft Word and/or Microsoft Excel. The 2007 version of these programs is recommended, but NOT required. I will post documents in the .doc and .xls extensions although I generally create the documents in the Office 2007 version. I assume that students have some basic proficiency in using spreadsheets such as the ability to sort and to add a column of numbers. The college's Learning Resource Center offers workshops on the use of Excel as well as instruction designed for students enrolled in on-line courses. I highly recommend both.

Tentative Schedule of Topics:

MAT 150 Introduction to Statistics Prof. Miller			
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	TOPIC	Readings	Assignments
Week 1 (8/28 – 9/1)	Course information and answer to "what is statistics (and why it's important)?"	Read course structure and requirements, tentative schedule, and "Course Overview: Big Picture"	-Post bio on discussion board -Submit Assignment on Course Policies
Week 2 (9/2 – 9/8)	Introductory Definitions	Read Introductory definitions (in Week 1 folder) and Chapter 1 in the text	-Post link on discussion board to article that uses sampling with your analysis. - Submit Assignment on Introductory Definitions
Week 3 (9/9-9/15)	Measures of Central Tendency	Read Measures of Central Tendency (in Week 2 folder) and Sections 3-1 and 3-2 in the text	-Post example of data set with given characteristics (mean greater than median; no mode, for example) -Submit Mean, Median, Mode Assignment -Post survey question for your project

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Week 4 (9/16-9/22)	Shape of a distribution: Graphical depiction of a data set	Read Graphical depiction of Data (in Week 3 folder) and Chapter 2 in the text	-Submit assignment on grouped frequency distribution with histogram and ogive -Post on discussion board an example of a data set that might have a given shape such as skewed to the left.
Week 5 (9/23-9/29)	Measures of Spread	Read Section 3-3 in the text	-Participate in discussion of the meaning of standard deviation -Submit homework assignment on standard deviation
Week 6: (9/30) Exam 1: Descriptive Statistics (Due 10/6, 9 pm)	Measures of Positions	Read Section 3-4 in the text	-Exam 1 Due 10/6 9 pm -Presentation of descriptive statistics for your project due
Week 7 (10/7-10/13)	Introduction to Probability	Read Lecture #6	-Post on discussion board: compare and contrast probability and statistics
Week 7	Algebra of Probabilities	Read Lecture #7	-Submit homework assignment on probabilities of compound events
Week 8 (10/14-10/20)	Probability distributions	Read Lecture #8	-Submit assignment on Expected value
Week 8	Binomial distribution	Read Lecture #9	-Submit assignment on Binomial Probabilities
Week 9 (10/21-10/27)	Normal distribution	Read Lecture #10	-Submit assignment on finding probabilities for normal distributions
Week 9	Normal approximation to the binomial	Read Lecture #11	-Submit assignment on normal approximation to the binomial
Week 10 (10/28-11/3) Exam 2: Probability and Probability distributions (Due 11/3 9pm)	Central Limit Theorem	Read Lecture #12	Exam 2 due 11/3
Week 11 (11/4-11/10)	Hypothesis test for μ (μ): Classical approach & p-value	Read Lecture #13	-Post on discussion board: Your analysis of the conclusion for an example of a hypothesis test.
Week 12 (11/11-11/17)	Hypothesis test for μ (μ) when σ (σ) unknown	Read Lecture #14	-Submit assignment
Week 12	Confidence interval for μ (μ)	Read Lecture #15	-Submit assignment
Week 13 (11/18-11/24)	Hypothesis test and confidence interval for π	Read Lecture #16	-Submit assignment -Post link to article using hypothesis test with analysis

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Week 13 (11/25-12/1)	Hypothesis test for the difference between means	Read Lecture #17	Exam 3 due.
Week 14 (12/1-12/9) Exam 3: Hypothesis tests and Confidence Intervals	Correlation and Regression	Read Lecture #18	Final project due on 12/15
Week 15: Final Exam Due 12/20 9 pm			Final exam due

Student Learning Outcomes

- Students will be able to define the vocabulary, terminology and symbols used in statistics.
- Students will be able to construct simple statistical charts as well as to calculate key statistics and parameters such as the mean, the mode, the median, the midrange, the variance, the standard deviation, quartiles, percentiles and correlations.
- Students will be able to calculate measures of center, measures of dispersion and measures of position, by way of appropriate formulas, procedures or algorithms.
- Students will be able to quantify probabilities and inferences based on the Normal and other distributions: Estimating the percentage of population in an interval as well as inferring a confidence interval or margin of error based on a percent.
- Students will be able to construct simple statistical studies and hypothesis tests using Normal distributions as well as with other distributions such as the t, the chi-squared, the sampling distribution and analysis of variance.
- Students will be able to use critical thinking to evaluate the strengths and weaknesses of currently published statistical studies.

Required Texts and/or Other Resources

Essentials of Statistics, Third Edition, 2008. Pearson Education, Inc.

Tutoring is available in the Math Lab (Room S511) as well as video taped lessons, technology (in terms of statistics computer programs, graphing calculators and internet access) and additional worksheets.

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 N324;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.