

MTH 113: Introduction to Probability and Statistics with Computer Applications

Updated 8/2021 GF

Required Materials:

- Elementary Statistics, 14th edition (2021), with MyLab access. By Mario F. Triola. ISBN 9780137374748 (for the e-text; there are other options). MyLab is required to access and submit homework, and to utilize the StatCrunch software used in the computer labs.
- Computer Laboratory Assignments: The projects can be downloaded at <http://www.math.csi.cuny.edu/Courses/MTH113/>.
- TI 83 Plus or TI 84 Plus Calculator. These two models have functions that do substantial amounts of calculation in exactly the manner needed for this class. The textbook contains purple boxes detailing how to use these models to do computations.

Computer Laboratory Classes: Each semester has 14 laboratory hours scheduled. The dates will vary by section, as will the use of the Q&A periods, which your instructor may use for exam prep or homework help, or to give you extra time to complete the laboratory assignments.

Lesson	Date	Topic
1		Q & A (period for asking questions, getting caught up on, exam prep, etc)
2		Lab #1: Getting Started with StatCrunch
3		Lab #2: Describing, Exploring and Comparing Data - Graphically
4		Lab #3: Describing, Exploring and Comparing Data - Numerically
5		Q & A
6		Lab #4: Exploring Probabilities
7		Lab #5: The Normal Distribution
8		Q & A
9		Lab #6: Confidence Intervals with known standard deviation
10		Lab #7: Confidence Intervals with estimated standard deviation
11		Q & A
12		Lab #8: Hypothesis Testing
13		Q & A
14		Lab #9: Goodness-of-Fit, Contingency Tables, Linear Regression

Lecture Schedule: Each semester has 42 lecture classes scheduled, each 50 minutes long. The precise timing of the exams varies from section to section to accommodate weekends, holidays, and the lab schedule, and may be impacted by catastrophic weather or other unpredicted emergencies. The reading and pen-and-paper homework is listed here; your instructor will assign additional problems through MyStatLab. For optimal learning, make an attempt at the reading the day before the lecture, attend the lecture, and then start the homework (online or paper) in the hours after the lecture.

Lesson	Date	Topic
1		1: Introduction, 1-1: Statistical and Critical Thinking
2		1-2: Types of data
3		2-1: Frequency Distributions
4		2-2: Histograms
5		2-3: Graphs that enlighten and graphs that deceive
6		3-1: Measures of Center
7		3-2: Measures of Variation
8		3-3: Relative standing and Boxplots
9		Review for Exam 1
10		First Exam, Chapters 1, 2, 3
11		First Exam, Chapters 1, 2, 3
12		4-1: Basic Concepts of Probability
13		4-2: Addition Rule, Multiplication Rule
14		4-3: Complements, Conditional Probability
15		4-4: Counting
16		5-1: Probability Distributions
17		5-2: Binomial Probability Distributions
18		6-1: Standard Normal Distribution
19		6-2: Applications of Normal Distributions
20		6.3: Sampling Distributions and Estimators
21		6.4: The Central Limit Theorem
22		Review for Exam 2
23		Second Exam, Chapters 4, 5, 6
24		Second Exam, Chapters 4, 5, 6
25		Confidence intervals, 7-1: Estimating p
26		7-2: Estimating μ
27		8-1: Hypothesis Testing
28		8-2: Testing p
29		8-3: Testing μ
30		9-1: Testing p_1, p_2
31		9-2: Testing μ_1, μ_2 , (independent samples)
32		9-3: Testing μ_1, μ_2 , (matched pairs)
33		Review Confidence Intervals
34		Review Hypothesis Testing

35		Third Exam, Chapters 7, 8, 9
36		Third Exam, Chapters 7, 8, 9
37		10-1: Correlation
38		10-2: Regression
39		11-1: Goodness-of-Fit
40		11-2: Contingency Tables
41		Review for Final Exam
42		Review for Final Exam