

BRONX COMMUNITY COLLEGE OF THE CITY UNIVERSITY OF NEW YORK  
DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

SYLLABUS: **MTH 23 Probability and Statistics**

PREREQUISITE: MTH 04 or equivalent; co-requisite ENG 04 and/or RDL 02, if required.

TEXT: *Understanding Basic Statistics* by Charles Brase and Corinne Brase, Houghton Mifflin Co.  
(4th Edition, ISBN-10: 0-618-63227-1)

SECTION	TOPIC	Pages	PROBLEMS
<b>Chapter 1: Getting Started</b>			
1.1	What is statistics?	10-11	1-9
1.2	Random Samples	17-18	1-11
<b>Chapter 2: Organizing Data</b>			
2.1	Frequency Distributions, Histograms and Related Topics	43-47	1-10
2.2	Bar Graphs, Circle Graphs, and Time Series Graphs	54-56	1-10
2.3	Stem-and-Leaf Displays	61-64	1-10
<b>Chapter 3: Averages and Variation</b>			
3.1	Measures of Central Tendency	80-82	1-10
3.2	Measures of Variation	93-98	1-12
3.3	Percentiles and Box-and-Whisker Plots	106-108	1-10
<b>Chapter 4: Correlation and Regression</b>			
4.1	Scatter Diagrams and Linear Correlation	131-134	1-12
4.2	Linear Regression and the Coefficient of Determination	146-149	1-8
<b>Chapter 5: Elementary Probability Theory</b>			
5.1	What is Probability?	167-169	1-11
5.2	Some Probability Rules: Compound Events	182-185	1-15
<b>Chapter 6: The Binomial Probability Distribution and Related topics</b>			
6.1	Introduction to Random Variables and Probability Distributions	213-216	1-10
6.2	Binomial Probabilities	225-228	1-12
6.3	Additional Properties of the Binomial Distribution	234-236	1-10

### **Chapter 7: Normal curves and Sampling Distributions**

7.1	Graphs of Normal Probability Distribution	253-255	1-11
7.2	Standard Units and Areas Under the Standard Normal Distribution	266-268	1-48
7.3	Areas Under any Normal Curve	277-279	1-26
7.4	Sampling Distributions	285	1-9
7.5	The Central Limit Theorem	293-294	1-8
7.6	Normal Approximation to the Binomial Distribution	301-303	1-8

### **Chapter 8: Estimation**

8.1	Estimating $\mu$ when $\sigma$ is Known	324-327	1-10
8.2	Estimating $\mu$ when $\sigma$ is Unknown	334-339	1-14
8.3	Estimating p in the Binomial Distribution	347-350	1-16

### **Chapter 9: Hypothesis Testing**

9.1	Introduction to Statistical Testing	372-375	1-12
9.2	Testing the Mean $\mu$	388-391	1-16
9.3	Testing a Proportion p	400-403	1-20

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