

**NORTHEASTERN TECHNICAL COLLEGE
COURSE OUTLINE**

COURSE:	PREFIX	NO.	EFFECTIVE DATE	NEXT REVIEW DATE
	MAT	120	August 2011	August 2012
TITLE:			CREDITS	CONTACTS
				CLASS - LAB - TOTAL
Probability and Statistics			3	3 0 3

PREREQUISITES: Acceptable placement scores or completion of MAT 102 with grade of "C" or better.

DESCRIPTION: This course includes the following topics: introductory probability and statistics, including organization of data, sample space concepts, random variables, counting problems, binomial and normal distributions, central limit theorem, confidence intervals, and test hypothesis for large and small samples; type I and II errors; linear regression; and correlation.

TEXTBOOK(S) OR ALTERNATIVE: Elementary Statistics, Mario F. Triola, 11th edition, 2010.

MATERIALS: Graphing and/or scientific calculators are required.

COLLATERAL READING: None

CLASS MANAGEMENT ACTIVITIES (Attendance, tardies, testing, academic dishonesty, etc.):

Academic dishonesty:

Students are expected to do their own work. Please refer to the NETC Student Code and Grievance Procedure for a definition of academic dishonesty and an outline of the disciplinary action that may result.

Attendance:

Students are expected to attend all scheduled classes and are responsible for all classwork, homework, notes, etc., whether or not they are present. In the event of extenuating circumstances, such as illness, you are allowed to miss up to 8 hours. The student will be dropped after missing more than 8 hours of scheduled classes. If an instructor drops a student for excessive absences at any time during the semester, a grade of "F" will be assigned. If the student withdraws from the course, a grade of "W" or "WF" will be assigned as outlined in the college catalog. There is no such thing as an excused absence! If you exceed the allowed number of absences, you will be dropped.

A student is considered tardy if not present for roll call, which is taken at the beginning of the class. Three tardies constitute 1 hour of absence.

Class Etiquette:

1. Electronic communication devices (pagers, cell phones, etc.) are not allowed in the classroom. On-call emergency personnel should see the instructor for an exemption.
2. No visible food or drinks are allowed in the classroom.
3. No radios or headphones are allowed in the classroom.

Student ID:

It is mandatory that every student wear his or her student ID at all times. During the first week of classes, the instructor will issue a reminder to wear the ID. This reminder is a warning.

After the first week of classes, instructors are required to dismiss students without ID from class. The student may get his/her ID (or a new one in Student Services for \$3.00) and return to class before the midpoint of the class. If the student cannot get his/her ID and return to class by midpoint, the instructor will record the absence.

DISABILITIES STATEMENT:

Students with disabilities are encouraged to contact the Dean of Student Services to discuss needs or concerns as they pursue an academic program and participate in campus life. The Dean of Student Services will provide guidance regarding official documentation of disabilities and/or accommodation of needs. (See College Catalog)

RESOURCES (A-V, persons, tools/equipment): Computerized instruction on selected topics and video taped lecture materials are available in the student Success Center. Ask your instructor for details.

COURSE TOPICAL OUTLINE: (List topics and sub-topics of course) and Calendar or approximate length of time devoted to topic.

TENTATIVE CLASS OUTLINE

<u>WEEK</u>	<u>SECTION</u>	<u>DESCRIPTION</u>
1	1.3	Types of Data
	1.4	Critical Thinking
	1.5	Collecting Sample Data

			TEST 1	_____
2	2.2	Frequency Distributions		
	2.3	Histograms		
	2.4	Statistical Graphics		
			TEST 2	_____
			PROJECT 1	_____
3	3.2	Measures of Center		
	3.3	Measures of Variation		
	3.4	Measures of Relative Standing		
			TEST 3	_____

COURSE TOPICAL OUTLINE: (Continued)

<u>WEEK</u>	<u>SECTION</u>	<u>DESCRIPTION</u>		
4-5	4.2	Basic Concepts of Probability		
	4.3	Addition Rule		
	4.4	Multiplication Rule: Basics		
	4.5	Multiplication Rule: Complements		
			TEST 4	_____
6-7	5.2	Random Variables		
	5.3	Binomial Probability Distribution		
	5.4	Mean, Variance and Standard Deviation for the Binomial Distribution		
			TEST 5	_____
			PROJECT 2	_____
8-9	6.2	The Standard Normal Distribution		
	6.3	Applications of Standard Normal Distributions		
	6.4	Sampling Distributions and Estimators		
	6.5	The Central Limit Theorem		
	6.6	Normal As Approximation to Binomial		
			TEST 6	_____

10-11	7.2	Estimating a Population Proportion
	7.3	Estimating a Population Mean: σ Known
	7.4	Estimating a Population Mean: σ Not Known

TEST 7 _____

12-14	8.2	Basics of Hypothesis Testing
	8.3	Testing a Claim About a Proportion
	8.4	Testing a Claim About a Mean: σ Known
	8.5	Testing a Claim About a Mean: σ Not Known
	8.6	Testing a Claim About a Variation

TEST 8 _____

15	10.2	Correlation
	10.3	Regression
	13.6	Rank Correlation

TEST 9 _____

COLLEGE WIDE COMPETENCIES: Apply mathematical/computational skills to solve problems.

GENERAL EDUCATION OUTCOME: Graduates will be able to:
1. use a systematic approach to solving problems.

STUDENT LEARNING OUTCOMES / OBJECTIVES OF COURSE: The student will demonstrate an ability to solve problems with probability and descriptive statistics, binomial and normal distributions, Central Limit Theorem, confidence intervals and test hypothesis, type i and ii errors, linear regression, and correlations.

INSTRUCTIONAL METHODS TO COMPLETE OBJECTIVES: Lectures covering course material will be supplemented by problem solving and projects

ASSESSMENT METHODS TO APPRAISE OBJECTIVES: Tests, projects and rubrics will be used to compute your grade for MAT 120. **NO** test grades will be dropped.

MAKE-UP TEST PROCEDURE: **NO make-up tests** are given except in extenuating circumstances. The student is responsible for contacting the instructor, prior to the time the test is scheduled to arrange a meeting to discuss the process of making up the missed test.

GRADING SCALE: The grade point scale that will be used is as follows:

100 - 93 = A

92 - 85 = B

84 - 77 = C

76 - 69 = D

Below 69 = F