



# Introductory Statistics - Math 1342.89

## Course Syllabus: Summer 2, 2017

“Northeast Texas Community College exists to provide responsible, exemplary learning opportunities.”

**Dr. Leah Reagan**  
**Office: Humanities Bldg.**  
**Phone: 903.434.8290**  
**Email: lreagan@ntcc.edu**

Office Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Online
	Online via email	Online via email	Online via email	Online via email	Online via email	Professor checks email often

*The information contained in this syllabus is subject to change without notice. Students are expected to be aware of any additional course policies presented by the instructor during the course.*

**Catalog Course Description (include prerequisites):** This is an elementary course in statistics, designed to meet the needs of nursing, business, education and behavioral science students. Included are the following topics and their applications in various fields: frequency distributions, probability, random sampling, central tendency, dispersion, normal distribution, binomial distribution, sampling distributions, confidence intervals, hypothesis testing, Chi square, analysis of variance (ANOVA, and linear regressions analysis. **PREREQUISITE:** MATH 0305 (Intermediate Algebra) or its equivalent.

Students are expected to have a sufficient algebra background in addition to the ability to read at college-level. Students will earn three hours college credit for each course.

**Required Textbook(s):**

Triola, Essentials of Statistics, 5<sup>th</sup> Edition

**Publisher:** Pearson, Boston, MA

**ISBN Number:** # 0-13-386496-0 (The MyStatLab Access code and the ebook are required.)

Note: The NTCC Bookstore link is at [www.ntcc.edu](http://www.ntcc.edu).

**Recommended Reading(s):**

None

**Student Learning Outcomes:**

Upon successful completion of this course, students will

1342.1 Demonstrate an understanding of descriptive statistics.

1342.2 Exhibit an understanding of the basic principles of sampling.

1342.3 Determine values using various probability distributions.

1342.4 Develop an ability to generalize from sample to population.

1342.5 Utilize various hypothesis tests including linear regression and correlation.

### **Core Curriculum Purpose and Objectives:**

Through the core curriculum, students will gain a foundation of knowledge of human cultures and the physical and natural world; develop principles of personal and social responsibility for living in a diverse world; and advance intellectual and practical skills that are essential for all learning.

Courses in the foundation area of mathematics focus on quantitative literacy in logic, patterns, and relationships. In addition, these courses involve the understanding of key mathematical concepts and the application of appropriate quantitative tools to everyday experience.

### **College Student Learning Outcomes:**

#### Critical Thinking Skills

**CT.1** Students will demonstrate the ability to 1) analyze complex issues, 2) synthesize information, and 3) evaluate the logic, validity, and relevance of data.

#### Communication Skills

**CS.1** Students will effectively develop, interpret and express ideas through written communication.

#### Empirical and Quantitative Skills

**EQS.1** Students will manipulate numerical data or observable facts by organizing and converting relevant information into mathematical or empirical form

**EQS.2** Students will analyze numerical data or observable facts by processing information with correct calculations, explicit notations, and appropriate technology.

**EQS.3** Students will draw informed conclusions from numerical data or observable facts that are accurate, complete, and relevant to the investigation.

### **SCANS Skills:**

N/A

### **Lectures and Discussions:**

Since this is an online class, students must be self-motivated to keep up with the due dates, turn in assignments ON TIME, and take Exams as scheduled. Students need to check their email accounts daily AND log in to MyMathLab to make sure they receive all communications from the professor.

## Course Outline:

- I. Introduction to Statistics
  - A. Statistical and Critical Thinking
  - B. Types of Data
  - C. Collecting Sample Data
  
- II. Summarizing and Graphing Data
  - A. Frequency Distributions
  - B. Histograms
  - C. Graph Qualities
  
- III. Statistics for Describing, Exploring, and Comparing Data
  - A. Measures of Center
  - B. Measures of Variation
  - C. Measures of Relative Standing and Boxplots
  
- IV. Probability
  - A. Basics
  - B. Addition Rule
  - C. Multiplication Rules
  - D. Counting
  
- V. Discrete Probability Distributions
  - A. Probability Distributions
  - B. Binomial Probability Distributions
  
- VI. Normal Probability Distributions
  - A. Standard Normal Distribution and Applications
  - B. Sampling Distributions and Estimators
  - C. The Central Limit Theorem
  - D. Assessing Normality
  - E. Normal as Approximation to Binomial
  
- VII. Estimates and Sample Sizes
  - A. Estimating a Population Proportion
  - B. Estimating a Population Mean
  - C. Estimating a Population Standard Deviation or Variance
  
- VIII. Hypothesis Testing
  - A. Basics of Hypothesis Testing
  - B. Testing a Claim about a Mean
  
- IX. Inferences from Two Samples
  - A. Two Means: Independent Samples
  - B. Two Means: Dependent Samples

- X. Correlation and Regression
  - A. Correlation
  - B. Regression
  
- XI. Chi-Square
  - A. Test of Independence
  - B. Test of Homogeneity

**Evaluation/Grading Policy:**

Three major 100 point examinations will be given, and together they will count for 50% of your total grade. If an exam is missed or failed, the highest possible make-up grade is a 70 (with instructor notification prior to the exam missed). The 2<sup>nd</sup> exam and the Final Exam MUST BE TAKEN IN PERSON IN THE NTCC TESTING CENTER. If you do not live near NTCC, you may take your exam from a testing facility near you (student is responsible for getting testing site information to me and also for paying any fees the alternate testing facility may charge).

The average of a series of homework assignments will be worth 30% of the total grade (all homework is on MyStatLab. All homework due dates are posted on MyStatLab. Homework is due on the due date...no exceptions.

A comprehensive final examination will contribute 20% to the final grade, and the final must be taken in the testing center of the NTCC campus. If you do not live near NTCC, you may take your exam from a nearby testing facility (student responsible for getting testing site information to me and also for paying any fees the facility may charge).

**Tests/Exams:**

Three Major Exams	50%
Online Homework Assignments*	30%
Final Exam	20 %
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TOTAL	100 %

- "A" - 90%
- "B" - 80%
- "C" - 70%
- "D" - 60%
- "F" - Below 60%

\* Online assignments are graded exercises posted on MyStatLab for each chapter assigned. The last grade earned for each homework assignment will be posted for the final grade. There are no make-up assignments.

Any online assignment or exam not submitted will receive a grade of zero (at the end of the semester).

**Other Course Requirements:**

A graphing calculator is required for this course.

**Student Responsibilities/Expectations:**

Being an online student requires you to keep up with all assignments and Exams on their DUE DATES. This takes intrinsic motivation and commitment to the course.

**NTCC Academic Honesty Statement:**

"Students are expected to complete course work in an honest manner, using their intellects and resources designated as allowable by the course instructor. Students are responsible for addressing questions about allowable resources with the course instructor. NTCC upholds the highest standards of academic integrity. This course will follow the NTCC Academic Honesty policy stated in the Student Handbook."

**Academic Ethics**

The college expects all students to engage in academic pursuits in a manner that is beyond reproach. Students are expected to maintain complete honesty and integrity in their academic pursuit. Academic dishonesty such as cheating, plagiarism, and collusion is unacceptable and may result in disciplinary action. Refer to the student handbook for more information on this subject.

**ADA Statement:**

It is the policy of NTCC to provide reasonable accommodations for qualified individuals who are students with disabilities. This College will adhere to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student's responsibility to arrange an appointment with a College counselor to obtain a Request for Accommodations form. For more information, please refer to the NTCC Catalog or Student Handbook.

**Family Educational Rights And Privacy Act (FERPA):**

The Family Educational Rights and Privacy Act (FERPA) is a federal law that protects the privacy of student education records. The law applies to all schools that receive funds under an applicable program of the U.S. Department of Education. FERPA gives parents certain rights with respect to their children's educational records. These rights transfer to the student when he or she attends a school beyond the high school level. Students to whom the rights have transferred are considered "eligible students." In essence, a parent has no legal right to obtain information concerning the child's college records without the written consent of the student. In compliance with FERPA, information classified as "directory information" may be released to the general public without the written consent of the student unless the student makes a request in writing. Directory information is defined as: the student's name, permanent address and/or local address, telephone listing, dates of attendance, most recent previous education institution attended, other information including major, field of study, degrees, awards received, and participation in officially recognized activities/sports.

**Other Course Policies:**

The college's official means of communication is via your campus email address. I will use your campus email address, Blackboard, and MyStatLab to communicate with you outside of class. Make sure you keep your campus email cleaned out and below the limit so you can receive important messages.