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|  | **Introductory Statistics - Math 1342.212 Hybrid, SYNC**  **Course Syllabus:**  **Spring 2021** | | | | | |
| ***“Northeast Texas Community College exists to provide personal, dynamic learning experiences empowering students to succeed.”***  **Instructor: Dr. Leah Reagan**  **Office: Humanities, 128 B (teaching from home this semester)**  **Phone: Text me on Remind or email me.**  **Email:**  [lreagan@ntcc.edu](mailto:lreagan@ntcc.edu) | | | | | |
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| **Online Office Hours on Zoom** | **Monday** | **Tuesday** | **Wednesday** | **Thursday** |  |  |
| 1:30 – 4:00 pm | 1:30 – 4:00 pm | 1:30 – 4:00 pm | 1:30 – 4:00 pm |  | \*\*Professor checks email and Remind texts often daily. |

***This syllabus serves as the documentation for all course policies and requirements, assignments, and instructor/student responsibilities.***

*Information relative to the delivery of the content contained in this syllabus is subject to change. Should that happen, the student will be notified.*

**Course Description:**  This is a first course in statistics with topics that span collection, analysis, presentation and interpretation of data, and probability. Analysis includes descriptive statistics, correlation and regression, confidence intervals and hypothesis testing. Three hours credit.

**Prerequisite(s):** 1) TSI Not Complete – Multiple Measures Placement with Corequisite Model

***or*** 2) TSI Complete Status

# Student Learning Outcomes:

# 1342.1 Explain the use of data collection and statistics as tools to reach reasonable conclusions.

# 1342.2 Recognize, examine and interpret the basic principles of describing and presenting data.

# 1342.3 Compute and interpret empirical and theoretical probabilities using the rule of probabilities and combinatorics.

# 1342.4 Explain the role of probability in statistics.

# 1342.5 Examine, analyze and compare various sampling distributions for both discrete and continuous random variables.

# 1342.6 Describe and compute confidence intervals.

# 1342.7 Solve linear regression and correlation problems.

# 1342.8 Perform hypothesis testing using statistical methods.

# 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.

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# 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.

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# Program Student Learning Outcomes:

# Critical Thinking Skills

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# 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.

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# Communication Skills

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

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# Empirical and Quantitative Skills

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# EQS.1 Students will manipulate numerical data or observable facts by organizing and converting

# relevant information into mathematical or empirical form

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# EQS.2 Students will analyze numerical data or observable facts by processing information with correct

# calculations, explicit notations, and appropriate technology.

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# EQS.3 Students will draw informed conclusions from numerical data or observable facts that are

# accurate, complete, and relevant to the investigation.

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| **Evaluation/Grading Policy:** | | |  |
| You will have 2 major 100 point examinations, evenly spaced throughout the semester. Each exam  will be worth 20% of the final grade (total 40% of final grade). Quizzes will count for 10% of your  grade. Homework will count a total of 25% of your final grade, and the Final Exam will count 25% of  your overall 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 2nd Exam and Final Exam must be proctored. We will  discuss your options closer to test time.  **Tests/Exams:**  Exam #1 20%  Exam #2 20%  Quizzes 10%  Online Homework Assignments\*\* 25%  Final Exam 25%  ---------  TOTAL 100 %  "A" - 90%  "B" - 80%  "C" - 70%  "D" - 60%  "F" - Below 60%  QUIZ rules: If you miss a quiz, you will receive a zero for that quiz. No exceptions, no re-takes.  \*\* Any online assignment, quiz, or exam not submitted (it will say “past due”) will receive a grade of zero at  the end of the semester when I average grades. |  |
| Required Instructional Materials: Triola, *Elementary Statistics*, 13th Edition  Printed textbook with MyStatLab access code. Publisher: Pearson Publishing Co. ([www.pearson.com](http://www.pearson.com)) **ISBN Number**-978-0-13-474853-5  (Inclusive Access Content – MyStatLab access code)  **ISBN Number**-978-0-13-446306-3 (Loose-leaf print upgrade)  Note: The NTCC Bookstore link is at [www.ntcc.edu](http://www.ntcc.edu) Optional Instructional Materials: NoneMinimum Technology Requirements:Graphing Calculator is required. TI-84 is preferred, but other models may be approved by the instructor. **Required Computer Literacy Skills**:  1) Communicate via email;  2) Saving and reloading saved files;  3) Navigate Blackboard to access posted materials and MyStatLab assignments.  4) Navigate the Internet to access Zoom meetings. Course Structure and Overview: This is a 16-week course where students are required to accessgraded activities on MyStatLab via the Blackboard Learning Management System.In this class you are expected to attend online Zoom meetings during class timeeach week during regular class time, and to participate in online assignments during the same week.Much of the work done and submitted online is in preparation for active participation in thefollowing classroom (Zoom) activities – peer group discussions, whole class discussions, statisticalactivities, etc. Online activities each week include watching videos on our topic, responding todiscussion prompts, responding to the comments of other students, and completing onlinehomework in MyStatLab. Once a week attendance (in Zoom meeting) is mandatory and critical toyour overall grade.On your schedules, this class is listed as SYNC (Synchronous). The definition of Synchronous is: SYNC - The SYNC classes will be delivered via a live remote format, where both the students  and the instructor will be on Zoom at the same time (the same day/time) and it will be an interactive class,  just in a virtual classroom instead of being on campus. Communications:Emails and Remind texts will be responded to within 24 hours.The college’s official means of communication is via your campus email address. Your instructorwill use your campus email, Blackboard, and Remind texting to communicate with you outside of class.You need to check these daily so that you won’t miss any information from your instructor.Make sure you keep your campus email cleaned out and below the limit so you can receiveimportant messages.Institutional/Course Policy:   Attendance is extremely important in this class. It is a very fast-paced class, and students  should attend every class. If a student is sick, he/she should contact the instructor prior to  missing class. Students need to be self-motivated to keep up with the work. Students should be  working on homework daily in order to keep up. In addition to attending class, students  need to watch the videos provided in Blackboard and on MyStatLab to help them learn  the material. The videos are very helpful.  No late work will be accepted. It is the student’s responsibility to check Blackboard, Remind Texting  and NTCC email for important information/announcements regarding the course. Students should  be working on course material via Blackboard daily. Do not wait until the last minute to complete  and submit assignments in case of technology issues. | | |  |

**Alternate Operations During Campus Closure and/or Alternate Course Delivery Requirements:**

In the event of an emergency or announced campus closure due to a natural disaster or pandemic, it

may be necessary for Northeast Texas Community College to move to altered operations. During this time, Northeast Texas Community College may opt to continue delivery of instruction through methods that include, but are not limited to, online through the Blackboard Learning Management System, online conferencing, email messaging, and/or an alternate schedule.  It is the responsibility of the student to monitor NTCC’s website (<http://www.ntcc.edu/>) for instructions about continuing courses remotely, Blackboard for each class for course-specific communication, and NTCC email for important general information.

Additionally, there may be instances where a course may not be able to be continued in the same delivery format as it originates (face-to-face, fully online, live remote, or hybrid).  Should this be the case, every effort will be made to continue instruction in an alternative delivery format.  Students will be informed of any changes of this nature through email messaging and/or the Blackboard course site.

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# Course Outline:

1. Introduction to Statistics
2. Statistical and Critical Thinking
3. Types of Data
4. Collecting Sample Data
5. Summarizing and Graphing Data
6. Frequency Distributions
7. Histograms
8. Graph Qualities
9. Statistics for Describing, Exploring, and Comparing Data
10. Measures of Center
11. Measures of Variation
12. Measures of Relative Standing and Boxplots
13. Probability
14. Basics
15. Addition Rule
16. Multiplication Rules
17. Counting
18. Discrete Probability Distributions
19. Probability Distributions
20. Binomial Probability Distributions
21. Normal Probability Distributions
22. Standard Normal Distribution and Applications
23. Sampling Distributions and Estimators
24. The Central Limit Theorem
25. Assessing Normality
26. Normal as Approximation to Binomial
27. Estimates and Sample Sizes
28. Estimating a Population Proportion
29. Estimating a Population Mean
30. Estimating a Population Standard Deviation or Variance
31. Hypothesis Testing
32. Testing a Claim About a Proportion
33. Testing a Claim About a Mean
34. Testing a Mean About a Standard Deviation or Variance
35. Inferences From Two Samples (if time permits)
36. Two Proportions
37. Two Means
38. Correlation and Regression
39. Correlation
40. Regression

# NTCC Academic Honesty/Ethics Statement:

NTCC upholds the highest standards of academic integrity. The college expects all students to engage in their academic pursuits in an honest manner that is beyond reproach using their intellect and resources designated as allowable by the course instructor. Students are responsible for addressing questions about allowable resources with the course instructor. Academic dishonesty such as cheating, plagiarism, and collusion is unacceptable and may result in disciplinary action. This course will follow the NTCC Academic Honesty and Academic Ethics policies stated in the Student Handbook. Refer to the student handbook for more information on these subjects.

# 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 request accommodations. An appointment can be made with the Academic Advisor/Coordinator of Special Populations located in Student Services and can be reached at 903-434-8264. For more information and to obtain a copy of the Request for Accommodations, please refer to the special population’s page on the NTCC website[.](http://www.ntcc.edu/index.php?module=Pagesetter&func=viewpub&tid=111&pid=1)

# 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.

**Tentative Course Timeline (\*note\* instructor reserves the right to make adjustments to this timeline at any point in the term):**

Course Schedule:

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| [1](javascript:void(0);) |  | **ASSIGNMENTS:**  ORIENTATION Homework |  |  |  |  | **Tentative Due Dates:**  Week 1 |  | **\*\*All homework is due on the night before class at midnight** |
| [2](javascript:void(0);) |  | **Chapter 1 Homework** –Introduction to Statistics |  |  |  |  | Week 1 |  |  |
| [3](javascript:void(0);) |  | Ch1 **QUIZ** |  |  |  |  | Week 2 |  |  |
| [4](javascript:void(0);) |  | **Ch2 Homework** – Summarizing & Graphing Data |  |  |  |  | Week 2 |  |  |
| [5](javascript:void(0);) |  | Ch2 **QUIZ** |  |  |  |  | Week 3 |  |  |
| [6](javascript:void(0);) |  | **Ch3 Homework –**  Describing, Exploring, and Comparing Data |  |  |  |  | Week 3 |  |  |
| [7](javascript:void(0);) |  | Ch3 **QUIZ** |  |  |  |  | Week 4 |  |  |
| [8](javascript:void(0);) |  | **REVIEW** FOR EXAM #1 |  |  |  |  | Week 4 |  |  |
| [9](javascript:void(0);) |  | **EXAM #1 (Chapters 1,2,3)** |  |  |  |  | **Week 4** |  | **\*Professor will give exact date later** |
| [10](javascript:void(0);) |  | **Section 4.1 Homework** –  Probability Basics |  |  |  |  | Week 5 |  |  |
| [11](javascript:void(0);) |  | **Section 4.2 Homework** –  Addition Rule |  |  |  |  | Week 5 |  |  |
| [12](javascript:void(0);) |  | **Section 4.3 Homework** –  Multiplication Rules |  |  |  |  | Week 5 |  |  |
| [13](javascript:void(0);) |  | **Section 4.4 Homework** –  Counting |  |  |  |  | Week 6 |  |  |
| [14](javascript:void(0);) |  | Ch4 **QUIZ** |  |  |  |  | Week 6 |  |  |
| [15](javascript:void(0);) |  | **Ch5 Homework** –  Discrete Probability Distributions |  |  |  |  | Week 7 |  |  |
| [16](javascript:void(0);) |  | Ch5 **QUIZ** |  |  |  |  | Week 8 |  |  |
| [17](javascript:void(0);) |  | **Ch6 Homework** –  Normal Probability Distributions |  |  |  |  | Week 8 |  |  |
| [18](javascript:void(0);) |  | Ch6 **QUIZ** |  |  |  |  | Week 8 |  |  |
| [19](javascript:void(0);) |  | **REVIEW** for Exam #2 (Chapters 4, 5, 6) |  |  |  |  | Week 9 |  |  |
| [20](javascript:void(0);) |  | **EXAM #2 (Chapters 4, 5, & 6)** |  |  |  |  | **Week 9** |  |  |
| [21](javascript:void(0);) |  | **Ch7 Homework** (7.1, 7.2, 7.3)  Estimates and Sample Sizes |  |  |  |  | Week 10 |  |  |
| [22](javascript:void(0);) |  | Ch7 **QUIZ** |  |  |  |  | Week 10 |  |  |
| [23](javascript:void(0);) |  | **Ch8 Homework** –  Hypothesis Testing |  |  |  |  | Week 11 |  |  |
| [24](javascript:void(0);) |  | Ch8 **QUIZ** |  |  |  |  | Week 12 |  |  |
| [25](javascript:void(0);) |  | **Ch10 Homework –**  Correlation & Regression |  |  |  |  | Week 13 |  |  |
| [26](javascript:void(0);) |  | Ch10 **QUIZ** |  |  |  |  | Week 14 |  |  |
| [27](javascript:void(0);) |  | **REVIEW** for Final Exam (Chapters 7, 8, 10) |  |  |  |  | Week 15 |  |  |
| [28](javascript:void(0);) |  | **FINAL EXAM!!!**  **Chapters 7, 8, & 10** |  |  |  |  | **Week 16** |  |  |
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