I. Course Description

An introduction to basic concepts and formulas for both descriptive and inferential statistics. Topics include the nature of data, uses and abuses of statistics, methods of sampling, summarizing data, pictures of data, counting techniques, measures of central tendency, measures of variation, measures of position, understanding probability, binomial and normal distributions, central limit theorem, confidence intervals, fundamentals of hypothesis testing for both one and two samples, and linear regression.

Credit Hours: 3 credits (3 class hours)

Level 2 placement or higher in Math or concurrent enrollment in MATH 0835.

II. Course Outcomes and Topics

Upon successful completion of this course, students will:

1. Solve problems using mathematics, and determine if solutions are reasonable.
   - Analyze and solve counting and probability application problems.
   - Analyze and solve problems relating to the binomial and normal distributions.
   - Analyze a linear correlation and determine if it is reasonable.
2. Apply mathematical concepts to solve real-life problems using formulas (deduction) and interpret the meaning of the solution.
   - Perform multiple types of hypothesis tests such as binomial, chi-square, one-sample and two-sample, and analyze the results.
3. Construct meaningful connections (transfer of knowledge) between mathematics and other disciplines.
4. Apply technology for mathematical reasoning and problem solving.
   - Use graphing calculators, computer software, and tables in an appropriate manner to assist in solving descriptive and inferential related problems in the study of statistics.
5. Analyze data/graphs by using mathematical modeling and/or statistical reasoning.
6. Calculate sample size, as well as use a given sample to determine the true population parameter within the established constraints utilized in the Central Limit Theorem.
7. Construct frequency distribution tables, histograms, graphs, and charts from raw data sets, using traditional methods as well as computer software and/or graphing calculators.
8. Apply and utilize correct statistical terms.

III. Topics

- Frequency Tables
- Histograms, Statistical Graphs
- Measures of Center
- Measures of Variation
- Measures of Relative Standing
- Probability and Counting
- Probability Distributions, Mean, Variance, Expectation
- Binomial Distribution
- Standard Normal Distribution
- Applications of Normal Distributions
• Central Limit Theorem
• Estimate Population Proportion, Sample Size
• Basics of Hypothesis Testing/Proportions (& p-value)
• Testing a Claim about a Mean: \( \sigma \) Not Known
• Testing a Claim about a Standard Deviation and Variation
• Inferences about Two Means (Independent t-test)
• Correlation/Significance of Correlation
• Linear Regression
• Contingency Tables
• Test for Independence

IV. Course Materials

The following materials are **required:**

- **MyStatLab Access Code:** ISBN 0321694643 (this can be purchased in the bookstore or directly from Pearson, see instructions on MyStatLab handout.)

  **Note:** The required MyStatLab access code contains an e-textbook. Therefore, the custom text is **not required**, but it is **strongly recommended** as a hard copy of the book is often easier for students to navigate.

- **Graphing Calculator:** The TI-84+ calculator will be the demonstration tool in the classroom. The TI-83/84 series is strongly recommended. Cell phones may not be used as calculators on exams.

The following materials are **strongly recommended:**

- **Shrink Wrapped Text/Software Bundle:** *Elementary Statistics*, Mario F. Triola, 12\textsuperscript{th} Edition, ISBN 1269350137 (This is a custom version for NSCC.) This package contains the text, Student Solutions Manual, and the **required** MyStatLab access code.

  **Note:** The above items may be purchased separately (but the bundle is cheaper)


- **Student Solution Manual** (if purchased separately): ISBN 0321837924

VI. Course Policies

**Attendance:**
Attendance in this class expected and will be taken at every class meeting. Students are expected to be on time for and remain until the completion of all class meetings. Students who miss class need to get the notes from a classmate as soon as possible to get caught up. See the section regarding Tests and Missed Tests on page 4.

**Tardies:**
Students are expected to come to class on time. Being tardy disrupts the class (see the section on Classroom Behavior on page 5). Students with repeated tardies may be required to meet with the Dean of Students before
being allowed to return to class. If you have circumstances that cause you to regularly be late to class, you need to enroll in a section that you can arrive on time for.

**Homework (10% of grade):**
All homework assignments are completed using MyStatLab. Understand that you should not put off an assignment until the last minute, as you may experience technical difficulties or run out of time when attempting to do the work. It is your responsibility to manage your time carefully. Homework assignments are given firm deadlines. All homework must be completed by the listed due date & time. Due dates will be posted in MyStatLab and will be correspond to the day and time of the test they are for (or the second test day for a two-day test). To raise your score, simply rework missed problems (you do not need to repeat the whole assignment) until your overall score reaches a score you are happy with. It is suggested that you rework any problem you guess on or do not get correct the first attempt to ensure you have mastered the material.

**Note:** The “Prepare for Homework” is not factored into your overall grade although if you are co-registered for MATH 0835, you are required to complete it before beginning the MATH 1530 homework.

**Quizzes (10% of grade):**
There will be a MyStatLab quiz corresponding to each MyStatLab homework assignment. Quizzes will be given firm deadlines which are posted on MyStatLab. Quiz deadlines will correspond with the test day (or the second test day for a two-day test). All three attempts for each quiz are due at class time the day of the exam they correspond with. Students are responsible for keeping track of the due dates.

Students will have 3 attempts for each quiz but unlike the homework, you will not be able to rework individual problems. Instead, you should study in between attempts and when ready, retake the entire quiz to improve the quiz grade. Only the highest of the three quiz attempts for each quiz will be used for the quiz average. It is suggested that you wait to complete a quiz until you have completed the corresponding MyStatLab homework assignment with a score of at least 90%, but the homework is not a prerequisite for the quiz. Students should take advantage of all 3 quiz attempts for each quiz. The extra practice will help on the tests and can improve your overall average. If your score drops on a second or third quiz attempt – rest assured, only the highest score for each quiz will be considered. So use all three attempts! If you want to review a quiz after you have closed it, simply go to the MyStatLab Gradebook, and click “review” by the quiz you need to review.

**Note:** The “Review Quiz” for each test is not factored into your overall grade although it can be a great way to prepare for exams. You can do specific problems for practice or take the whole thing. You can also review all homework and quizzes for each test by going to the MyStatLab Gradebook, and clicking “review” by the assignment you want to go back and look at.

**Make up policy:**
No make-ups or late work of any kind will be accepted. Manage your time carefully, use a calendar to record due dates, attend class and work in MyStatLab regularly so that you are aware of due dates. There are no exceptions to this policy. You need to prepare for technological difficulties by not leaving your work until the last minute.

**Tests and Missed Tests (Test 1, 2 and 3 are each 20% of grade):**
There are three in class tests as well as one comprehensive Final Exam. Tests dates for Tests 1, 2 and 3 will be announced 1-2 weeks before the day of the test. Attend class regularly so you know when tests will occur. If you miss a test, the test will be counted as a zero. There are no make-up tests given in MATH 1530. However, the lowest test score (including a zero for a missed exam) will be replaced by the Final Exam grade provided that the Final Exam grade is higher than the test grade that it replaces. This will only apply to one test. If you miss more than one test, the second zero will stand. Tests cannot be taken early; tests cannot be taken late. Tests can only be taken at the scheduled day and time.
Final exam: This course has a required Comprehensive Final Exam that is 20% of the final grade.

Note: To earn an A in this class, you need to do consistent work. You should do a little bit of homework every day if possible. The MyStatLab homework is your way of mastering what was presented in class. Understanding the lectures is very different from being able to complete the work yourself, so be prepared to sometimes get stuck on the homework. There are many options for getting help. Use those. The quizzes are your best predictor of your readiness for tests. Try to take each quiz at least one time without your notes to be sure you have mastered the concepts for the test. Practice is incredibly important in this class.

Grading: Grades will be based on in class tests, homework, quizzes, and a final exam as follows:

- Three In Class tests worth 60% (20% each)
- MyStatLab Homework worth 10% (see details on page 3)
- MyStatLab Quizzes worth 10% (see details on page 3)
- Required Final Exam (comprehensive) worth 20% (up to 40% if the Final replaces a lower test score).

Grading Scale:

A range is 90-100%
B range is 80-89%
C range is 70-79%
D range is 60-69%
F range is 59% or below.
FA (see below)
FN (see below)

Per TBR policy, a student who does not officially drop or withdraw from a course, but receives a failing grade, will receive an “FA” if the last day of attendance was earlier than two-thirds into the part-of-term. That date equates to the last day to withdraw from the course.

An FN grade is awarded to students who never attended class.

Note: The last day to withdraw from the course with a W is Wednesday, November 1st.

VI. Communications

It is the student’s responsibility to check D2L (NSOnline) and MyNSCC email on a regular basis. These are the official communication channels between the college and students. Students are responsible for the information communicated through those channels.

VII. ADA Statement

Nashville State complies with the Americans with Disabilities Act. If you wish to request any special accommodations for any courses in which you are enrolled, contact the Access Center at 615.353.3741 or 615.353.3721.

VIII. Classroom Behavior

Nashville State Community College has a zero tolerance policy for disruptive conduct in the classroom. Students whose behavior disrupts the classroom will be subject to disciplinary sanctions. The Nashville State
Student Code of Conduct policy is available at http://www.nscc.edu/content/resources/Student_Code_of_Conduct_Policy.pdf.

Please be aware that children are not allowed in class or unattended on campus.

IX. Academic Honesty (Honor Code)

Any form of academic dishonesty, cheating, plagiarizing, or other academic misconduct is prohibited. Students are responsible for understanding and aiding by the Academic Misconduct Policy in the Nashville State Student Code of Conduct that can be found at http://www.nscc.edu/content/resources/Student_Code_of_Conduct_Policy.pdf.

In addition to other possible disciplinary sanctions that may be imposed through regular college procedures as a result of academic dishonesty the instructor has the authority to assign an “F” or a “Zero” for the exercise, paper, or examination or to assign an “F” for the course. Students may appeal through the appropriate college grade appeal procedures.

X. Rave Emergency Alert System

Emergency events can happen at any time and Nashville State Community College wants to be able notify students if and when they occur. For this reason, all students have been enrolled in the free RAVE alert system. If you have not already done so, please log in at https://getrave.com/login/nscc to confirm and update your contact information and notification preferences. It is critical that your information be correct so that you will receive any emergency notifications. Your RAVE Username is your NSCC email address. If you’ve never received an email from RAVE with your password, or if you need to reset your password, select “Forgot your password?” and a new password will be emailed to you. Should the RAVE system indicate “user not found”, select Register and create your own RAVE account.

XI. Inclement Weather Policy

Nashville State will use the RAVE alert system to send a text message to students, staff, and faculty about adjusted hours of operation and/or closings at individual campuses. All students should check the Nashville State web site home page at www.nscc.edu for announcements on campus closures, which may vary from campus to campus. Campus closures will also be announced on local television stations.