

**Nashville State Community College**  
**MANS**  
**Mathematics**  
**2018 Master Course Syllabus – Web Sections**  
**MATH 1530 Introductory Statistics**

**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

**II. Course Outcomes**

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:** Once enrolled, all students should verify that they have the correct textbook and materials information by consulting the D2L/NS Online shell for the course. If you are registered with the Access Center and require an alternate format for the textbook and other course materials, please contact the Access Center at 615-353-3721, 615-353-3741, or [accesscenter@nsc.edu](mailto:accesscenter@nsc.edu).

- **MyStatLab Access Code:** ISBN 0321694643 (this can be purchased in the bookstore or directly from Pearson, see instructions on MyStatLab handout.)
- **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 bundle is available (OPTIONAL) if you prefer a hard copy of the text:**

- **Shrink Wrapped Text/Software Bundle:** *Elementary Statistics*, Mario F. Triola, 12<sup>th</sup> 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)

- **Text** (if purchased separately): *Elementary Statistics*, Mario F. Triola, 12<sup>th</sup> Edition, ISBN 1269350137
- **Student Solution Manual** (if purchased separately): ISBN 0321837924

#### V. Course Policies

- **Attendance:** Attendance is measured by completion of required assignments in MyStatLab.
- **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 are posted in MyStatLab but note that

you should be completing work by the due date, not beginning work on the due date.. To raise your score on a Homework assignment, 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.

- **Quizzes (10% of grade):** There will be MyStatLab quizzes corresponding to MyStatLab homework assignments. Quizzes will be given firm deadlines which are posted on MyStatLab. Quiz deadlines will correspond with the last day of the testing window and all attempts for each quiz are due at that time. Quizzes (taken without notes) are your best preparation for tests, so you should take quizzes as soon after completing the homework as possible. Students will have **unlimited** 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 your quiz attempts for each quiz will be used for your cumulative quiz average. It is strongly 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 each quiz until they are able to score at least an 80% without the use of notes or help. The extra practice will help on the tests and can improve your overall average. If your score drops on a later attempt – rest assured, only the highest score for each quiz will be considered. So use as many attempts as you need to master the material! **IMPORTANT! To review a quiz after you have closed it, 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, print the posted schedule or use a calendar to record all 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):** Students must come to a NSCC campus site to take Test 1 (Chapters 1-3), Test 2 (Chapters 4-6), Test 3 (Chapters 7-9), and the comprehensive Final Exam (Chapters 1-11). For each Test, there will be approximately a one week testing window so that you can find a testing time that suits your schedule. The Tests and Exams are password protected; the test proctor must enter the password. Each Test can only be attempted one time. The last date for taking the exams will not be extended. 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.
- **There are a total of 5 Bonus Points available for each test. The points will be awarded as follows:**
  - 3 points will be awarded to every student who achieves a score of 90% or higher on **all** homework assignments for the corresponding test.
  - 2 points will be awarded to every student who achieves a score of 80% or higher on **all** quizzes for the corresponding test.

**Note:** To pass this class, you need to do consistent work. You should do a little bit of homework every day if possible. Understanding the material is very different from being able to complete the work yourself, so be prepared to sometimes get stuck on the homework. Get help when you need it – don’t just

stop. 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.

- **Final exam:** This course has a required Comprehensive Final Exam that is 20% of the final grade.
- **Grading:** Grades will be based on in class tests, homework, quizzes, and a final exam as follows:
  - Three proctored tests worth 60% (20% each)
  - MyStatLab Homework worth 10%
  - MyStatLab Quizzes worth 10%
  - **Required** Final Exam (comprehensive) worth 20% (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** 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.
- **FN** An FN grade is awarded to students who never attended class.

## **VI. NSCC Policies**

- **D2L/NSOnline and MyNSCC Email:** It is students’ responsibility to check D2L/NS Online course shells for all enrolled courses and myNSCC, including student email, on a regular basis. These are the official communication channels between the college and students, who are responsible for the information communicated through those channels. D2L/NS Online contains specific course information and myNSCC contains information important for other purposes.
- **Technology Statement:** Nashville State's classes are considered to be web-enhanced. Faculty have an expectation that students will use a computer and the Internet to complete assignments, engage in online discussions, and access various course materials through D2L/NS Online course shells. Computers are available for student use at each campus during campus open hours.
- **Academic Early Warning System:** Nashville State Community College uses an Early Alert System to let students know of a faculty member’s concern in one or more of these academic areas: lack of attendance, lack of classroom participation, late or missing assignments, and/or poor performance on assignments/tests. \*Please note that Early Alerts do not affect a student’s academic standing. If you receive an Early Alert email, please see your instructor and your academic advisor as soon as possible.
- **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.

- **Classroom Misconduct:** 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 measures. Please review the Nashville State Student Code of Conduct policy ([https://s3.amazonaws.com/nscc.edu/PDFs/dean-students/Student\\_Code\\_of\\_Conduct\\_Policy.pdf](https://s3.amazonaws.com/nscc.edu/PDFs/dean-students/Student_Code_of_Conduct_Policy.pdf) ). Please be aware that children are not allowed in class or to be left unattended on campus.
- **Academic Misconduct:** Any form of academic dishonesty, cheating, plagiarizing, or other academic misconduct is prohibited. Students are responsible for understanding and abiding by the Academic Misconduct Policy in the Nashville State Student Code of Conduct that can be found at [https://s3.amazonaws.com/nscc.edu/PDFs/dean-students/Student\\_Code\\_of\\_Conduct\\_Policy.pdf](https://s3.amazonaws.com/nscc.edu/PDFs/dean-students/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. Any form of academic dishonesty, cheating, plagiarizing, or other academic misconduct is prohibited. Students are responsible for understanding and abiding by the Academic Misconduct Policy in the Nashville State Student Code of Conduct ([https://s3.amazonaws.com/nscc.edu/PDFs/dean-students/Student\\_Code\\_of\\_Conduct\\_Policy.pdf](https://s3.amazonaws.com/nscc.edu/PDFs/dean-students/Student_Code_of_Conduct_Policy.pdf) ). In addition to other possible disciplinary measures that may be applied 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.
- **Technology Statement:** Nashville State's classes are considered to be web-enhanced. Faculty have an expectation that students will use a computer and the Internet to complete assignments, engage in online discussions, and access various course materials through Desire2Learn (D2L) learning management system course shells. Computers are available for student use at each campus during campus open hours.