

## STAT 130M Course Syllabus, Part II

Inferences, decisions, and predictions play a vital role in everyday life as well as in organized research. In many cases knowledge of statistics will allow a quantitative assessment of risk involved with each inference and hence improve inference-making abilities.

### **Course Objectives:**

1. That the student learn basic techniques in descriptive statistics including computation and interpretation of measures of central tendency, relative position, and dispersion and the construction and interpretation of graphs and tables.
2. That the student learn probability terminology and become familiar with the methodology necessary to solve elementary probability problems.
3. That the student learn how to compute expected values and how to use them in decision making.
4. That the student learn probability computations associated with the normal and binomial distributions.
5. That the student learn basic terminology and methodology associated with statistical inference. This includes sample size determination, confidence interval construction, hypothesis testing, and proper usage of statistical tables.
6. That the student learn how to apply inferential techniques to a wide variety of application areas including but not limited to business, medicine, social sciences, engineering, computer science, sports and law.
7. That the student become more adept at analyzing the content of newspaper and magazine articles in a quantitative and objective fashion.

**Course Prerequisite:** Qualifying score on a placement test administered by the University Testing Center or Math 101M. This course is intended for non-statistics majors, but requires a second-year high school algebra course and good arithmetic skills.

**Required Textbook:** *Essentials of Statistics* by Mario F. Triola, 2<sup>nd</sup> edition is the required textbook for the course. The latter portion of this course outline contains textbook sections that will be covered during the term, as well as textbook exercises relating to these sections. It is strongly recommended that the student work these problems to insure a thorough understanding of the material. The list is considered a minimal number and a student who falters with these is urged to work extra problems. These problems are *not* to be turned in for grading. In order to minimize the time spent on performing arithmetic calculations, the student is encouraged to use a calculator (with square root button) on the homework and exams. Familiarity with the operation of the calculator is essential. No sharing of a calculator during the exams is permitted.

**Grade Determination:** The student's final grade in STAT 130M is based upon performance in three areas. These areas are now discussed.

1. Exams: A final examination worth approximately 30% of the total number of points attainable in the course will be given during exam week. Several other in-class examinations will be administered during the semester. The dates of these examinations are determined by your instructor and will be disseminated to the class at the appropriate time. Some homework may also be given and graded. These grades will be included when computing your exam scores. A make-up exam will be offered in the case of a documented illness and in other exceptional circumstances. It is not possible to guarantee that a make-up exam has the same difficulty level as the scheduled exam. Therefore, a student is encouraged to be present for all exams, quizzes and tests. A student who must miss a class is expected to get the notes from other students. Although excessive absences can have a negative effect on a student's learning and performance, whether or not absences from class will be counted in the course grade will be decided by your instructor. An *honor code signature line* is required on all written work turned in for a grade. However, you are free to collaborate on any homework exercises not turned in for a grade.
2. Computer Homework: These are based upon computer assignments from *MyMathLab*. This special software will be discussed in class.
3. Project: The project is an end of semester report. Details will be discussed in class.

**Computer Homework:** Web-based computer exercises will be assigned. The due date of each exercise set will be given in class after the chapter topics have been discussed. To access the computer exercises, you will need an access code (included in the starter kit, included with the text), an e-mail address (a student LAN account is recommended and is required to access the University's computer labs), the author and title of your text book, and the course ID (given to you by your instructor). See the handbook included in the starter kit for instructions on how to access and register for the computer exercises.

It is possible, though unlikely, that a break in your internet connection could occur while you are working on an assigned module. To prevent the loss of credit for work completed, it is recommended that you do the following: (1) click the submit button after completing each exercise within a module and (2) frequently go to the main menu, click on Gradebook, and check to see if you have been credited with any work completed on the current module. Another possibility is that the firewall and pop-up blocker on your pc may prevent submitted work from being recorded. In this case you may need to disconnect your firewall and/or pop-up blocker. (Don't forget to turn them on when you complete a module.)

**Class Demeanor:** Many sections in STAT 130M are large. In order to promote the most conducive atmosphere for classroom operation the following rules are to be observed:

- a) Be in your seat at the time your class is scheduled to begin.
- b) Remain in your seat until the termination of your class.
- c) No talking is permitted during the class period.
- d) Cell phones and beepers must be turned off in the classroom.

**Withdrawal Policy:** Any student may drop this course on or before the withdraw date indicated in the Schedule of Classes and receive a W grade in the course. Withdrawal after this date is not usually permitted. However, in the event of an illness or other severe hardship beyond the student's control the student should submit, no later than the last day of classes, a written petition for permission to withdraw to the instructor and the chairperson. If permission is granted by both, a grade of "W" will be recorded. Any appeal of decisions should be brought to the Dean of the College of Sciences.

**Honor Code:** By enrolling in this course you agree to adhere to the honor code on all written work: "I pledge to support the Honor System of Old Dominion University. I will refrain from any form of academic dishonesty or deception, such as cheating or plagiarism. I am aware that as a member of the academic community, it is my responsibility to turn in all suspected violators of the Honor Code."

During exams spread out as much as possible and try not to sit next to another student. The instructor reserves the right to relocate any student(s) to ensure the Honor Code is not compromised. An Honor Code Signature Line is required on all written work turned in for a grade. However, you are free to collaborate on any homework exercises not turned in for a grade.

**Writing Policy:** The exams and project will require that you respond in writing to present a solution, derivation, or proof. All such work, whether it uses standard or symbolic writing, must be presented in a clear and logical form, and be reasonably free of spelling, grammar, and punctuation errors.

**Disability Services Policy:** All reasonable accommodations will be made for any student with disabilities. Only those students who have been documented at the Office of Disability Services will be eligible for these accommodations.

**Computing Policy:** The student is permitted to use a scientific calculator on homework exercises and on tests. Programming and text editing/read-back capabilities cannot be used on your calculator during quizzes, tests, and exams. Cell phones with calculators, and any other device that can access the internet, cannot be used during exams.

**Attendance Policy:** A student who must miss class is expected to get the notes from other students. Students are expected to be present for all quizzes, tests, and exams. Attendance is strongly encouraged (mandatory) in that excessive absences can have a negative effect on a student's learning and performance. Your instructor will indicate whether absences from class will be counted in the course grade.

**Make-up Exam Policy:** A make-up exam may be offered at the instructor's discretion in the case of a documented illness and in other exceptional circumstances for which a student will be asked to provide documentation. No other work can be made up under any circumstances. It is not possible to guarantee that a make-up exam has the same difficulty level as the scheduled exam. Therefore, a student is encouraged to be present for all exams, quizzes, and tests.

## Suggested Exercises

Chapter	Title	Exercises
<b>1</b>	<b>Introduction to Statistics</b> Section 1-4 will be omitted	Page 9 1, 3, 9, 11, 13, 15, 17, 19 Page 17 All odd numbered problems from 1-21
<b>2</b>	<b>Describing, Exploring, and Comparing Data</b> Section 2-7 will be omitted	Page 42 All odd numbered problems from 1-19 Page 52 1, 2, 3, 4, 7, 9 Page 64 3, 7, 11 Page 81 3, 11, 17, 19, 27, 28 Page 93 1, 3, 7, 13, 15
<b>3</b>	<b>Probability</b> Sections 3-1 through 3-3 will be covered	Page 120 1, 3, 4, 11, 12, 23, 24 Page 129 1, 3, 9 – 19 odd
<b>4</b>	<b>Probability Distributions</b>	Page 176 1, 3, 5, 7, 9, 11, 13, 15, 19, 21 Page 186 11, 13, 15, 17, 19, 25, 29, 31,33 Page 193 5, 7, 11, 15
<b>5</b>	<b>Normal Probability Distributions</b> Section 5-4 and 5-6 will be omitted	Page 215 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 37, 39 Page 223 1, 3, 5, 7, 9, 11, 13 Page 244 11, 13, 15
<b>6</b>	<b>Estimates and Sample Sizes</b> Section 6-5 will be omitted	Page 280 3, 7, 15, 19, 21, 23, 27, 29, 31, 33, 35, 37 41 Page 294 5, 7, 11, 13, 15, 19, 21, 23, 27, 29 Page 310 13, 17, 19, 21
<b>7</b>	<b>Hypothesis Testing</b> Section 7-6 will be omitted	Page 351 (instructor may prefer to omit Sect. 7-2) Page 361 1, 3, 4, 5, 11, 15 Page 369 9, 11, 13 Page 379 13, 15, 17, 19, 27
<b>8</b>	<b>Inferences from Two Samples</b> Section 8-2 will be covered	Page 408 5, 15
<b>9</b>	<b>Correlation and Regression</b> Sections 9-1 and 9-2 will be covered	Page 460 9, 11, 13