# WESTFIELD STATE UNIVERSITY
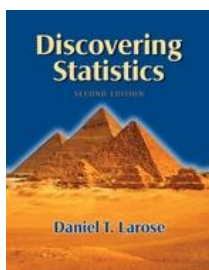## Westfield, Massachusetts
## Department Mathematics Course Outline

**Course:** MATH 0108                                    **Instructor:** Barry J. Hiney
**Prerequisite**: Math 0103 or High School Algebra.
**Required Materials**: **1.** <u>Discovering Statistics</u>, Daniel T. Larose, 2$^{ND}$. Ed. W. H. Freeman)



**2**. Scientific calculator in class, every class.

**Course Objectives:** To provide students with the ability to apply statistical concepts and methods. Upon completion of the course the student should have met the following objectives as measured by the indicated assessments.

| Objective | Assessed By |
|---|---|
| 1**.** Recognize, understand, utilize, integrate and communicate mathematical concepts, mathematical methods and logical reasoning; | Exam, Quizzes |
| 2. Apply mathematical concepts, mathematical methods, and mathematical reasoning within an analytic framework; | Exams, Quizzes, Cases |
| 3. Conceptualize and utilize formal mathematical and formal logical reasoning | Exams, Quizzes, Cases |
| 4. Conceptualize and utilize algorithms and formal mathematical structures | Exams, Quizzes, Cases |

**Course Goals:**

| Goal | Assessed By |
|---|---|
| 1. Determine if data are sample or population data. Pose questions to determine how data were collected. Identify the type of data- qualitative (nominal or ordinal) or quantitative (discrete or continuous) | Exam, Quizzes |
| 2. Know how to choose the appropriate graphical tool, design and construct an appropriate graph, and draw conclusions from these graphs. | Exams, Quizzes, Cases |
| 3. Be able to calculate measures of central tendency, and dispersion and what these measures indicate. | Exams, Quizzes, Cases |
| 4. Know how to create and interpret a scatter plot with respect to relationships between variables. Fit a linear model, interpret and employ it. | Exams, Quizzes, Cases |
| 5. Know how to compute and interpret probabilities | Exams, Quizzes |
| 6. Be able to employ the Normal Probability distribution, use z values, and solve probability problems. | Exams, Quizzes, Cases |
| 7. Understand the Central Limit Theorem and use it to draw inferences | Exams, Quizzes |
| 8. Know how to calculate and interpret confidence intervals. | Exams, Quizzes |

| | Cases |
|---|---|
| 9. Understand the statistical inference cycle from data collection to interpretation of results. | Exams, Quizzes, Cases |
| 10. Understand and use hypotheses testing.(z-test, t-test, etc.) | Exams, Quizzes, Cases |

**Method of Instruction:** This course will employ a traditional lecture-discussion format. There will be a large emphasis on problem solving and discussion regarding statistical decision-making. The computer will also be used extensively but not as part of class time. I will go over how to complete a specific statistical procedure using Excel or your calculator when the procedure is introduced. You will be expected to practice these procedures.

**Course Requirements:** Problems will be assigned from each chapter for review following the lecture/discussion. There will be three (3) exams, chapter quizzes, and case assignments. If a quiz is missed it cannot be made up and will receive a grade of zero. If an exam is missed you will be graded according to alternative 2 (see grading). **There is no extra credit work available in this course. All assignments must be in on time and display a high degree of professionalism. This means no hand written documents, free hand graphs, misspelled words, poor grammar etc.  Late assignment will not be accepted and will receive a grade of zero.**

**Attendance:** Participation in all classes is expected and required. If more than one week's worth of class is missed it will impact the participation portion of your grade negatively. There is no such thing as an excused absence. If you have something that requires you to miss class that's up to you and no note from anyone is required and you will still be responsible for the material covered during your absence. Don't waste your absences.  **Make-up exams will not be allowed. If you miss an exam your grade will calculated using alternative 2** (see grading).

**Grading:**                                                  **Alternative**

| | | **1** | | **2** | **Distribution** | |
|---|---|---|---|---|---|---|
| Exams 1 & 2 ….Best | | 30% | | 20% | A $\geq$ 93 | C    73 - 76 |
| ….Worst | | 10% | | 0% | A-  90 – 92 | C -  70 - 72 |
| Final exam (comprehensive) | | 30% | | 50% | B+  87 – 89 | D+  67 - 69 |
| Cases & Project | | 30% | | 30% | B    83 – 86 | D    63 - 67 |
| | | | | | B-   80 - 82 | D-  60 - 62 |
| | | | | | C+  77 – 79 | E  <  60 |

**Academic Honesty:** Students will take all tests and complete all assignments without the use of unauthorized sources. Sharing of calculators is not allowed during an exam.  Cases and Projects may be group efforts (no more than four people in a group); tests and quizzes are solo endeavors. Failure to comply will result in a course grade of "F".

**Internet Access:** The course notes, syllabus, informational handouts, and other useful information are available on **Blackboard/Plato**, the online course management system used by the college. To access our course go to: http://plato.westfield.ma.edu..

**Blackboar/Plato: You are expected to access this website regularly (at least every 2-3 days).** This links you to such important information as: class calendar, mail, notes, study tips, additional readings and resources, quizzes, power point presentations, grades, spreadsheet models and pointers, as well as other neat stuff. From hers, you can download notes, post messages to me or

others in the class, chat with classmates, or participate in discussions.  I will check mail at Blackboard/Plato on a more frequent basis than on the college e-mail.


**General Comment:** **This is a difficult course and will require a disproportional amount of your time. You are required to have a prior knowledge of algebra, ant to be able to employ that knowledge. You are also expected to know how to use your calculator.**