

## Course Syllabus

**Course Description** Welcome to Statistics B! This course is designed to follow Statistics A. It continues with the concepts that were taught last semester. You will learn the other side of statistics, probability. In statistics, you learned how to make assumptions about an entire population based on a sample. In probability, you will learn how to make predictions about a sample based on knowing about the population.

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**Course Objectives** This discipline is an introduction to the study of probability, interpretation of data, and fundamental statistical problem solving. Mastery of this academic content will provide students with a solid foundation in probability and facility in processing statistical information.

- 1.0 Students solve probability problems with finite sample spaces by using the rules for addition, multiplication, and complementation for probability distributions and understand the simplifications that arise with independent events.
  - 2.0 Students know the definition of *conditional probability* and use it to solve for probabilities in finite sample spaces.
  - 3.0 Students demonstrate an understanding of the notion of *discrete random variables* by using this concept to solve for the probabilities of outcomes, such as the probability of the occurrence of five or fewer heads in 14 coin tosses.
  - 4.0 Students understand the notion of a *continuous random variable* and can interpret the probability of an outcome as the area of a region under the graph of the probability density function associated with the random variable.
  - 5.0 Students know the definition of the *mean of a discrete random variable* and can determine the mean for a particular discrete random variable.
  - 6.0 Students know the definition of the *variance of a discrete random variable* and can determine the variance for a particular discrete random variable.
  - 7.0 Students demonstrate an understanding of the standard distributions (normal, binomial, and exponential) and can use the distributions to solve for events in problems in which the distribution belongs to those families.
  - 8.0 Students determine the mean and the standard deviation of a normally distributed random variable.
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**Course Policies and Procedures** Students are expected to read materials, ask questions, and complete all assignments in a timely manner. All work will be submitted online using the drop box or document sharing tools.

Calculators are allowed and encouraged for all assignments. Students should show work that demonstrates full understanding of the concepts, not just an ability to plug numbers into a calculator or computer system. Student work must be done independently unless specifically stated otherwise. Plagiarism will not be tolerated.

This course does not require a textbook. All of the course materials w online so reliable Internet access is imperative.

Students should expect to spend 10 - 12 hours per unit to complete the reading online activities, discussions, assignments, studying, and extra Attendance during; specific times are not required but students need to structure their own time to learn content and complete assignments.

Students are expected to use email or the online discussion forums to questions about the course content, assignments, deadlines, technical problems, etc. (Do not hesitate to ask!) Additionally, students should review questions from other students and answer them if possible. The course where interaction between classmates will enrich the learning process.

Parents will be notified via progress reports throughout the semester. Additionally, parents are encouraged to follow their child's progress b reviewing their work and online gradebook. Parents may contact the instructor by email to ask questions about their child's progress or course expectations.

Textbook(s)

No textbooks will be required for this course.

Grading Policy

In addition to assignments and tests, students are expected to read all materials, do all practice problems, and follow all links to off-site simulations and activities. Grading will be based on assignments, participation, exams, and the final project.

25%	Assignments (10 points each)
10%	Class Participation including unit discussions
50%	Exams (20 points for unit quizzes, 30 for midterm, 50 for final)
15%	Project (50 points)

A	94 - 100%	C	74 - 76%
A-	90 - 93%	C-	70 - 73%
B+	87 - 89%	D+	67 - 69%
B	84 - 86%	D	64 - 66%
B-	80 - 83%	D-	60 - 63%
C+	77 - 79%	F	59% and below