



## AP Statistics Syllabus (College Now: Mth 243-Introduction to Probability & Statistics)

*You are responsible for understanding the content of this syllabus.  
Please read carefully and ask any questions you may have.*

<b>Ms. Soderholm</b>			
<b>Phone:</b>	(541) 790-5100	<b>Office Hours:</b>	8:00 - 8:30 a.m. Tues, Thur, Fri or by appointment
<b>Email:</b>	soderholm@4j.lane.edu	<b>Website:</b>	staff.4j.lane.edu/~soderholm

**Perseverance      Respect      Integrity      Discipline      Excellence**

### Expectations

Be respectful of others and each individual's desire to learn. Harassment of any kind will NOT BE TOLERATED (see Student Handbook).

1. Come to class prepared and on-time. You will be expected to bring your book, paper, and pencil.
2. **Regularly check your grade progress on you Synergy account.**
3. Complete your own work (with the exception of group assignments) and turn it in on time.
4. Contribute to a positive and safe learning environment.
5. Participate in class discussion and in-class/group activities.
6. Seek additional instruction when necessary. If anything is unclear, ask for clarification. If something is unclear to you, chances are it is also unclear to others.
7. Do not bring food or drink (except water in a closed unbreakable container), cell phones, video games or any other disruptive devices to class. Disruptive devices may be confiscated for the class period. (see Student Handbook)

### COURSE DESCRIPTION:

AP Statistics is the high school equivalent of a one semester, introductory college statistics course. In this course, students develop strategies for collecting, organizing, analyzing, and drawing conclusions from data. We will study discrete and continuous probability, data description and analysis, measures of central tendency and variability, sampling distributions, and basic concepts of statistical inference, including confidence intervals, hypothesis testing, correlation, and regression. Students design, administer, and tabulate results from surveys and experiments. Probability and simulations aid students in constructing models for chance phenomena. Sampling distributions provide the logical structure for confidence intervals and hypothesis tests. Students use a TI-83/84 graphing calculator, statistical software, and Web-based java applets to investigate statistical concepts. To develop effective statistical communication skills, students are required to prepare frequent written and oral analyses of real data.

Students will have the option to earn college credit through Lane Community College's College Now program. This course is equivalent to Math 243-Introduction to Statistics. The prerequisite for LCC credit is Mth 105 or Mth 111.

## **COURSE GOALS:**

In AP Statistics, students are expected to learn

### *Skills*

- To produce convincing oral and written statistical arguments, using appropriate terminology, in a variety of applied settings.
- When and how to use technology to aid them in solving statistical problems

### *Knowledge*

- Essential techniques for producing data (surveys, experiments, observational studies, simulations), analyzing data (graphical & numerical summaries), modeling data (probability, random variables, sampling distributions), and drawing conclusions from data (inference procedures – confidence intervals and significance tests)

### *Habits of mind*

- To become critical consumers of published statistical results by heightening their awareness of ways in which statistics can be improperly used to mislead, confuse, or distort the truth.

Upon successful completion of the course, the student should be able to:

1. Classify data as categorical or quantitative.
2. Construct frequency bar charts, histograms, boxplots, stemplots and scatterplots.
3. Use descriptive statistics for center, location and spread.
4. Demonstrate an understanding of probability experiments, outcomes and events.
5. Recognize disjoint and independent events.
6. Find and interpret theoretical and statistical probabilities, including compound and conditional probabilities.
7. Find probabilities and values for a normal distribution.
8. Find probabilities for uniform, binomial, and Poisson distributions
9. Use the Central Limit Theorem to construct confidence intervals for population mean.
10. Construct confidence intervals for population proportion.
11. Test hypotheses about one or two population means.
12. Test hypotheses about one or two population proportions.
13. Interpret the correlation coefficient and its square.
14. Create regression lines and test their statistical significance.
15. Test the independence of two categorical variables using Chi-square.
16. Demonstrate an understanding of sampling and basic research design.
17. Demonstrate an understanding of sources of bias and error in statistical research.
18. Use statistical software and the statistical features of a graphing calculator.

**Prerequisites:** Algebra 2 with a B- or better.  
(For LCC credit: Mth 105 or Mth 111)

**Textbook:** The Practice of Statistics (6<sup>rd</sup> edition), by Yates, Moore, and Starnes, W. H. Freeman & Co., ISBN: 978-1-319-11333-9

**Equipment Needed:**  
Graphing Calculator (TI-83 Plus or better)  
Paper & Pencil (NO PENS)

## Grading:

There will be at least one quiz and one test for each chapter. Tests will be closed notes unless otherwise specified. Make-up test must be made up within one week of your return to school.

50% Exams  
20% Quizzes  
10% Assignments  
20% Projects/Final

PERCENTAGE	LETTER GRADE		PERCENTAGE	LETTER GRADE
97% - 100%	A+		77% - 79%	C+
94% - 96%	A		73% - 76%	C
90% - 93%	A-		70% - 72%	C-
87% - 89%	B+		67%- 69%	D+
83% - 86%	B		63% - 66%	D
80% - 82%	B-		60% - 62%	D-
			< 60%	F

## Assignments (Classwork and Homework):

Assignments provide an opportunity to practice learned concepts, and are only useful if done carefully and accurately. Exams provide a way to assess proficiency and understanding of learned concepts. The majority of the assignments will involve group and/or collaborative work. Each assignment will be due at the beginning of the next class period, unless otherwise indicated. Each student will be responsible for checking the accuracy of his/her assignments, and is expected to request additional clarification on incorrect problems. Each assignment will be graded for the completeness, neatness (if I can't read it, I can't grade it.) Each student must use appropriate terminology with coherent writing and show his/her work whenever appropriate to gain full credit. There is **NO EXTRA CREDIT**. So, please complete the work assigned to you to the best of your ability.

## Projects:

Students will complete a Critical Statistical Analysis and a Survey project. CSA and Project information will be provided at a later date, along with the grading rubric for each.

## Absences

(see Student Handbook for school policies regarding absences and tardies)

If a you are absent from class, it is your responsibility to keep up with missed assignments and to have assignments recorded. The assignment that was due on the day of the absence will be due on the first day of you return to class. Otherwise, the assignment will be considered late. Exams must be made up within **one week**, unless other arrangements have been made with me. It is your responsibility to schedule a time to make up missed exams. Any work missed due to unexcused absences will not be accepted. ***Any work missed due to unexcused absences may not be accepted.***

**Academic Integrity**

Cheating , plagiarism (copying someone else's work), and/or collusion are unacceptable. Unless otherwise specified, you are expected to do your own work. If you are involved in any way in an incident of cheating , plagiarism, or collusion, the disciplinary action taken will include some or all of the following: notifying your parents, loss of credit for the assignment or exam, lowering your trimester grade (possibly to a failing grade), and referral to school administration.

**Late Work**

To receive credit for late work, it must be submitted prior to the end of the chapter and given to me directly during my office hours.

**Feel free to contact me if you have any questions regarding this class.**

**Si necesita más información en Español sobre esta clase, por favor comuníquese con Marcos Alvarado al 541-790-5151 o por correo electrónico alvarado\_m@4j.lane.edu.**