



Los Angeles Community College District

COURSE OUTLINE

SECTION I: BASIC COURSE INFORMATION

- 1. COLLEGE: Pierce
2. SUBJECT (DISCIPLINE) NAME (40 characters, no abbreviations): Math
3. COURSE NUMBER: 227
4. COURSE TITLE: Statistics
5. UNITS: 4.00
6. CATALOG COURSE DESCRIPTION -- Provide a description of the course, including an overview of the topics covered:

Discusses averages, variability, graphical techniques, probability, hypothesis testing, sampling, estimation, correlation, prediction, and linear regression. Emphasis is on the collection and analysis of data and how inferences about a population are made from a sample.

- 7. CLASS SCHEDULE COURSE DESCRIPTION -- Provide a brief description of the course, including an overview of the topics covered:

Discusses averages, variability, graphical techniques, probability, hypothesis testing, sampling, estimation, correlation, prediction, and linear regression. Emphasis is on the collection and analysis of data and how inferences about a population are made from a sample.

- 8. COLLEGE APPROVAL DATE:

- 9. UPDATES (check all applicable boxes):

- Content Last Update: Jan. 17, 2005
Objectives Last Update: Jan. 17, 2005
College Specific Course Attributes/Data Elements Last Update:
Districtwide Course Attributes/Data Elements Last Update:
Other (describe) Last Update:

Empty rectangular box for additional information.

- 10. CLASS HOURS:

Table with 4 columns: Category, Hours per week (based on 18 weeks), Total Hours per term (hrs per week x 18), Units. Rows include Lecture, Lab/activity (w/ homework), Lab/activity (w/o homework), and Total.

1 Underlined course attributes are the same for the course throughout the LACCD; all other course attributes are college specific.

Note: The Carnegie Rule and Title 5, section 55002 sets forth the following minimum standards: 1 unit = 1 hour lecture per week, 2 hours homework per week; **OR** 2 hours per week of lab with homework; **OR** 3 hours of lab per week without homework. The hours per week are based on a standard 18-week calendar. Lecture also includes discussion and/or demonstration hours, laboratory includes activity and/or studio hours.

11. PREREQUISITES, COREQUISITES, ADVISORIES ON RECOMMENDED PREPARATION, and LIMITATION ON ENROLLMENT

Note: The LACCD's *Policy on Prerequisites, Corequisites and Advisories* requires that the curriculum committee take a separate action verifying that a course's prerequisite, corequisite or advisory is an "appropriate and rational measure of a student's readiness to enter the course or program" and that the prerequisite, corequisite or advisory meets the level of scrutiny delineated in the policy.

Prerequisites: **Yes** (If yes, complete information below)

Subject	Number	Course Title	Units	Validation Approval Date (for official use only)
Math	125	Intermediate Algebra	5	
Math	126	Intermediate Algebra with Trigonometry	6	
Intermediate Algebra Math Placement Test				

Corequisite: **None** (If yes, complete information below)

Subject	Number	Course Title	Units	Validation Approval Date (for official use only)

Advisories: **None** (If yes, complete information below)

Subject	Number	Course Title	Units	Validation Approval Date (for official use only)

12. OTHER LIMITATIONS ON ENROLLMENT (see Title 5, section 58106 and Board Rule 6803 for policy on allowable limitations. Other appropriate statutory or regulatory requirements may also apply):

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SECTION II: COURSE CONTENT AND OBJECTIVES

1. COURSE CONTENT AND OBJECTIVES:

COURSE CONTENT AND SCOPE – Lecture: If applicable, outline the topics included in the lecture portion of the course (<i>Outline reflects course description, all topics covered in class.</i>)	Hours per topic	COURSE OBJECTIVES - Lecture (<i>If applicable:</i> upon successful completion of this course, the student will be able to... (<i>Use action verbs – see Bloom's Taxonomy below for "action verbs requiring cognitive outcomes."</i>))
1. Data analysis 2. Probability 3. Sampling and sampling distributions 4. Confidence intervals 5. Hypothesis testing 6. Correlation, prediction and linear regression 7. Use of computer statistical packages or calculator This course may also include: 1. Frequency data and Chi-square analysis 2. One-way analysis of variance (ANOVA) 3. Nonparametric statistics 4. Probability simulations	10 10 10 10 10 10 12	Upon completion of this course, the student will be able to: 1. Record data in histograms and stem-and-leaf graphs 2. Recognize and explain variability and various measures of central tendency for data 3. Graph bivariate data in scatterplots 4. Identify and interpret correlation 5. Identify and interpret the fit of least-squares for bivariate data 6. Calculate basic probabilities including conditional probabilities 7. Employ theory and simulations to construct probability distributions 8. Interpret and explain sampling, normal, and Student-t distributions 9. State and apply the Central Limit theorem 10. Calculate and interpret large-and small-sample-size confidence intervals 11. Employ hypothesis tests, defending his/her choice of alternative hypotheses 12. Formulate conclusions from hypothesis tests 13. Explain Type-I and Type-II errors in hypothesis testing 14. Use and explain significance levels and P-values in hypothesis testing 15. Employ two independent samples or paired data to formulate inferences 16. Formulate and debate theses about various topics, such as the significance of Type I and Type II errors in particular situations 17. Use technology (graphing calculators or computers) appropriately to analyze data and to appraise statistical theorems
Total lecture hours*	72	

*Total lecture and laboratory hours (which includes the final examination) must equal totals on page 1.

2. REQUIRED TEXTS:

Provide a representative list of textbooks and other required reading; include author, title and date of publication:

Elementary Statistics, Triola
Statistics, Devore/Peck
Introduction to Statistics, McGhee

3. SUPPLEMENTARY READINGS:

Reading assignments may include, but are not limited to the following:

4. WRITING ASSIGNMENTS:

Title 5, section 55002 requires grades to be "based on demonstrated proficiency in subject matter and the ability to demonstrate that proficiency, at least in part, by means of essays or, in courses where the curriculum committee deems them to be appropriate, by problem solving exercises or skills demonstrations by students." Writing assignments in this course may include, but are not limited to the following:

Writing assignments in this course include, but are not limited to, problem solving exercises.

5. REPRESENTATIVE OUTSIDE ASSIGNMENTS:

Out of class assignments may include, but are not limited to the following:

6. REPRESENTATIVE ASSIGNMENTS THAT DEMONSTRATE CRITICAL THINKING:

Title 5, section 55002(a) requires that a degree applicable course have a level of rigor that includes "critical thinking and the understanding and application of concepts determined by the curriculum committee to be at college level". Critical thinking may include, but is not limited to analysis, synthesis, and evaluation. Provide examples of assignments that demonstrate critical thinking.

Writing assignments involve problem solving and analysis. For example: "Given the following set of sample data, construct and interpret a 98% confidence interval for the population mean."

7. METHODS OF EVALUATION:

Title 5, section 55002 requires grades to be "based on demonstrated proficiency in subject matter and the ability to demonstrate that proficiency, at least in part, by means of essays, or, in courses where the curriculum committee deems them to be appropriate, by problem solving exercises or skills demonstrations by students." Methods of evaluation may include, but are not limited to the following (please note that evaluation should measure the outcomes detailed "Course Objectives" at the beginning of Section II):

Methods of evaluation may include, but are not limited to, quizzes and exams, including a final exam; homework; computer projects; portfolios or journals

8. METHODS OF INSTRUCTION:

Methods of instruction may include, but are not limited to the following:

Lecture