

Math 13 – Introduction to Statistics
Peralta Class Code 21947

Class Hours & Location:

Mon 3:30pm – 5:20pm, Room 033, BCC

Wed 3:30pm – 5:20pm, Room 033, BCC

Instructor: Gaston Sanchez**Office:** Rm 355 BCC**Email:** gsanchez@peralta.edu**Office Hours:** Mon & Tue 1:30–3pm**Instructor Web Site for additional class info:**

<http://www.gastonsanchez.com/teaching/math13>

Textbook and Required Materials

The textbook used to present the course material is:

Understandable Statistics, 11th Edition
by Charles Brase and Corrine Brase
Cengage Learning
ISBN 978-1-285-46282-0

Chapters 1 – 9 will be covered.

You will need a non-graphing scientific calculator.

Access to spreadsheet software (e.g. MicroSoft Excel, Google Sheets, Mac Numbers, Libre Office Calc) is recommended for homeworks.

Course Schedule

Each chapter is divided into sections. We will cover about two sections per class period. It is your responsibility to attend class regularly to stay on top of the course material.

There are three midterm exams and one comprehensive final exam for this class.

Exam 1 - Ch 1-4

Exam 2 - Ch 5-6

Exam 3 - Ch 7-8

Final – Ch 1 - 9

Please review the tentative calendar/schedule of topics provided at the end of the syllabus.

To be successful in this course, you should spend about 15 hours per week outside of class time, studying the material and completing exercises. Some may need more time to do well.

Grading Policy

A: 90 – 100%

B: 80 – 89%

C: 70 – 79%

D: 60 – 69%

F: 0 – 59%

Your course grade is based on midterm exams, homework and in-class homework activities, and a comprehensive final exam. The percentage breakdown for each component is as follows:

Midterm Exams	60%
Final Exam	20%
Homework	20%

At the end of the course I will drop your lowest midterm exam score.

Exams

Midterm exams will include material and examples presented in lecture, examples from the textbook, and the exercises you are assigned in homework and for practice.

Midterm exams are worth 60% of your course grade. At the end of the course, I will drop your lowest midterm exam score.

The Final Exam will be a comprehensive exam, covering all topics presented in the course. It is worth 20% of your course grade. *The Final Exam will take place on the Monday of Final Exam week during class time 10am – 12:15pm.*

Absolutely no make-up exams will be given.

You are allowed to use a *non-graphing* scientific calculator during each exam.

Other electronic devices such as smart phones and mobile devices and tablets are NOT permitted during exams.

Homework

Homework is worth 20% of your course grade. In order to receive full credit on homework, you must show your work to arrive at your answers (i.e. write out your steps). You must explain how you arrived at your answer if a question does not require calculation.

Homework problems will be assigned for each chapter. They can be found on my BCC faculty page. As part of your homework, you are expected to read the textbook and attend class regularly. You will have a chance to work on homework at the end of some lectures.

Please practice your mathematics writing skills. In order to succeed in future math courses, it is critical to know how to express yourself mathematically..

The best way to learn the material is to regularly attend class and DO YOUR HOMEWORK:

1. Prepare for class. Read all sections from the text in advance of when they are covered in class. Consult the Tentative Calendar of Topics at the end of the syllabus to stay on track with the course.
2. Take notes during lecture. Ask questions in class or in office hours.
3. Try homework problems and problems from the book on your own at home. Ask questions during the question/answer period at the end of class. Work on homework problems during the question and answer period.
4. Supplement these activities with study groups, tutoring, and/or Internet tutorials and videos.
5. Most importantly, study your calculus a little every day, not just once per week. If you need to, review trigonometric, exponential, and logarithmic functions *while* you are learning the calculus.

Tutoring is available in BCC's Learning Resources Center, located on the first floor. I encourage you to form study groups with other classmates and help each other with homework.

Please save all homework problems you complete neatly in a file, folder, binder, or ringed notebook. Never throw away the work you do for homework.

Please keep all of your exams. This work is the only evidence outside of attending class of your efforts to succeed in the course.

Your attendance is an important part of your success in this course. Students who regularly miss class are not fully participating in homework activities in class and may therefore lose Homework percentage points.

Participation

While attending class, please help to maintain a decent learning environment. Please be considerate of others. Turn *off* your cell phones. Try to arrive on time. Sit close to the door if you must leave early. If you are late, please try to find a seat as quickly and quietly as possible.

Students who miss more than one consecutive week of class without contacting me to explain their absences may be dropped from the course. Those who perform poorly on an exam then fail to take the next one *will* be dropped.

Cheating Policy

Cheating is a very serious offense that I will not tolerate. If you are caught cheating on an exam I will give you a grade of 0% for that exam, and also drop your overall course grade by 10%. Both, or all, parties involved will be charged. (*No one caught or involved in cheating will earn an A in the course.*)

Student Learning Outcomes

Upon completion of this course, students will:

1. Find and evaluate statistical information in discussions and presentations
2. Use statistical procedures and standard techniques in data gathering, summary, and presentations.
3. Interpret data sampling and inferential statistics (hypothesis testing and confidence intervals.)
4. Describe the rules of probability and the role of probability distributions such as the Binomial, Normal, and various other models.

Justification for the Course:

Satisfies the General Education and Analytical Thinking requirement for Associate Degrees. Provides foundation for more advanced study in mathematics and related fields. Satisfies the Quantitative Reasoning component required for transfer to UC, CSUC, and some independent four-year institutions. Acceptable for credit: CSU, UC. AA/AS area 4b, CSU area B4, IGETC area 2A.

Tentative Calendar of Topics**Wk 1 – Jan 21**

Section 1.1 - Introduction to statistics

Section 1.2 - Random Samples

Wk 2 – Jan 26, 28

Section 2.1 - Distributions

Section 2.2 - Basic Graphs and plots

Wk 3 – Feb 2, 4

Section 3.1 - Measures of Central Tendency

Section 3.2 - Measures of Variation

Wk 4 – Feb 9, 11

Section 2.4 - the precise definition of a limit

Section 2.5 – continuity

Section 2.6 - limits at infinity; horizontal asymptotes

Wk 5 – Feb 16, 18

Section 2.7 - derivatives and rates of change

Section 2.8 - the derivative as a function

Review Chapters 1 and 2

Wk 6 – Feb 23, 25**Exam 1 – Wed Feb 25 – Chapters 1, 2 & 3**

Section 3.1 - derivatives of polynomials and exponential functions

Section 3.2 - the product and quotient rules

Wk 7 – Mar 2, 4

Section 3.3 - derivatives of trigonometric functions

Section 3.4 - the chain rule

Section 3.5 - implicit differentiation

Wk 8 – Mar 9, 11

Section 3.6 - derivatives of logarithmic functions

Section 3.8 - exponential growth and decay

Section 3.9 - related rates

Wk 9 – Mar 16, 18

Section 3.10 - linear approximations and differentials

Section 3.11 - hyperbolic functions

Review Chapter 3

Wk 10 – Mar 23, 25**Exam 2 – Wed Mar 25 – Chapters 4 & 5**

Section 4.1 - maximum and minimum values

Section 4.2 - the mean value theorem

Wk 11 – Apr 6, 8

Section 4.3 - how derivatives affect the shape of a graph

Section 4.5 - summary of curve sketching

Section 4.4 - indeterminate forms and l'Hopital's Rule

Wk 12 – Apr 13, 15

Section 4.7 - optimization problems

Section 4.8 - Newton's method

Section 4.9 - anti-derivatives

Wk 13 – Apr 20, 21

Section 5.1 - areas and distances

Section 5.2 - the definite integral

Review Chapter 4

Wk 14 – Apr 27, 29

Exam 3 - Mon Nov 10 – Chapter 4

Section 5.3 - the fundamental theorem of calculus

Section 5.4 - indefinite integrals and the net change theorem

Wk 15 – May 4, 6

Section 5.4 - indefinite integrals and the net change theorem

Section 5.5 - the substitution rule

Section 6.1 - areas between curves

Wk 16 – May 11, 13

Exam 4 – Mon Dec 1 – Chapter 5 & 6.1

Review for Final Exam

Wk 17 – May 20 - FINAL EXAM

Finals Week – No Classes Held

Final Exam Monday 18, 3:30pm – 5:30pm