Spring 2019

Elementary Statistics
with **Terrie Nichols** at
Cuyamaca College

Contact Info

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Visit during office hours or send an email through our course on Canvas. For *emergencies* feel free to text my private cell number (any day between 7:00 am and 8:00 pm).

Learning math the old way is the problem – not the solution.

Welcome to Math 160+60

I believe we all have the capacity to do college-level statistics and that we can tap into that capacity as a family of teachers and learners who are responsible for each other's success in this class. As your teacher and a fellow learner, I am grateful for the opportunity to work with you to demystify math and to be part of your journey toward achieving your educational goals. Together, through our good hard work and sustained effort, we can all be successful and reap the rewards of education's promise.

Office Hours

Tuesday 1:50 – 2:50 pm
Wednesday 2:00 – 4:00 pm
Thursday 1:50 – 2:50 pm &
3:55 – 4:55 pm

Class Meetings

Sections 9981 & 9982
Tuesday & Thursday
11:00 am – 1:50 pm
Room H-118

Final Exams: Dates & Times

Tues, May 28th, 12:00 – 2:00 pm (H118)
Thurs, May 30th, 10:00 am – 12:00 (H119)

Typical *Class* Work

- Brains on group activities to introduce and motivate key concepts for some (but not all) of the course topics
- Just-in-time remediation
- Discussions and mini-lectures as needed to close gaps in concept attainment and skill mastery
- Peer review feedback

Typical *Home* Work

- Interactive reading and assignments on Canvas (some topics will only be covered on Canvas)
- Math Interludes flipped activities and homework
- Review course material
- Collaborate with classmates
- Review for quizzes & exams

The Student-Centered Classroom

Forget what you know about the traditional math classroom where teachers lecture and students diligently take notes while struggling to understand the hieroglyphics materializing before them on the board. Learning math this way may work for some, but for many, the traditional math classroom does not allow students to engage with the course material in a meaningful way. Typically, students do not interact with the lesson until they attempt the homework problems a few days later and even then, when faced with math homework, the student may suddenly prefer to do the dishes that have been sitting in the sink for too long. To improve learning and increase your probability of success, in this course you'll study math in the *student-centered classroom* – no more typical lectures, robotic note-taking or traditional textbooks.

So what do I mean by a *student-centered classroom* and how does it differ from the traditional math classroom? In this learning model, the focus of activity shifts from the teacher to the learner. Class time is spent on discussion, collaborative work, and engagement with other brains-on activities. Additionally, during class, teaching and learning is tailored to fit the needs of small groups of students as they work through the activities and review prerequisite skills in a just-in-time approach. Furthermore, this learning model employs a teacher-guided-discovery process that allows me to identify gaps in student understanding and use class time to remediate those gaps. The good news? We'll explore data that demonstrates the student-centered classroom works!

Accommodations

Accommodations are available to students with disabilities. If you suspect that you have a learning disability or any other type of disability, please contact the DSPS office (see below). DSPS students who need an academic accommodation or who may need evacuation assistance during a campus emergency should notify me within the first two weeks of instruction.

DSPS Contact Info
Location A-113
Phone 619-660-4239

"We can't rely on our looks forever. Maybe we should work on passing math, so we can get our degrees."

Math Quotes

Pure mathematics is, in its way, the poetry of logical ideas.
~Albert Einstein

Even stranger things have happened; and perhaps the strangest of all is the marvel that mathematics should be possible to a race akin to the apes.
~Eric T. Bell, The Development of Mathematics

The laws of nature are but the mathematical thoughts of God.
~Euclid

A man has one hundred dollars and you leave him with two. That's subtraction. *~Mae West*

Calculators

The Texas Instruments TI-84Plus graphing calculator is required. However, please do not purchase a calculator before we discuss it in class.

WARNING: I am only able to help you learn how to use the TI graphing calculators with the exception of the TI-Nspire. I cannot help you with any other calculators such as the Casio or Hewlett Packard graphing calculators.

For exams and quizzes, I'll reset your calculator to its original factory condition. If you choose to purchase the TI-Nspire, I will place it in test mode. Afterwards you'll need to link your calculator to another Nspire to release it from test mode.

Important Dates

The schedule adjustment period ends on Friday, February 8th. For semester-length classes, this is the last day to: add the class; withdraw from the class without a W appearing on your transcript; or apply for a refund.

The last day to drop a semester-length class is Friday, April 26th.

Your final overall grade will be available by Thursday, June 6th.

Attendance

In this class we function as a team – teaching and learning together in small groups that are frequently reorganized during each class period. Consequently, throughout the semester you'll become increasingly vested in the success or failure of your classmates and vice versa. As a result, when you arrive to class late or return after an absence, your group mates will try to "catch you up" rather than moving forward with the lesson, and the entire group will fall behind. So your on-time presence in each and every class matters. Your deep and committed engagement in teaching and learning matters.

Please be aware that Math 060 and Math 160 are treated as a single course combo. You will experience the course as one class and will be unaware when Math 060 stops and Math 160 begins on any given day. Consequently, if you drop or are dropped from either course, you will be dropped from the course combo (i.e. both courses).

Tardiness and/or absences are extremely disruptive to this learning model, so I reserve the right to drop you from Math 160+060 for missing three or more class meetings (missing roll counts as missing class). However, if you quit attending class, you should not assume that I will drop you. Should you choose to drop, ultimately it is your responsibility to officially withdraw. Also since your grade is based, in part, on your class work, missing all or even part of a class could negatively affect your overall grade.

Cell Phone Policy

To promote a learning environment where each group member is fully engaged in teaching and learning, cell phone use during the lesson is prohibited. However, in addition to our regular breaks, I will offer short 1-minute "text breaks" during class. So, occasionally you will be able to satisfy your need to read or send a text.

Workbook

A workbook is available in the bookstore. Please bring the workbook to class every day.

Textbook

In lieu of a textbook, we will use the online learning materials available on Canvas.

Other Materials

You'll need a 3-ring notebook, 8.5" X 11" loose-leaf notebook paper, a pencil, and an eraser.

060 Catalog Description

(2 hours – 2 units) A review of the core prerequisite skills, competencies, and concepts needed in statistics. Intended for students who are concurrently enrolled in MATH 160, Elementary Statistics, at Cuyamaca College. Topics include concepts from arithmetic, pre-algebra, elementary and intermediate algebra, and descriptive statistics that are needed to understand the basics of college-level statistics. Concepts are taught through the context of descriptive data analysis. Additional emphasis is placed on solving and graphing linear equations and modeling with linear functions. Pass/No Pass only. Non-degree applicable.

160 Catalog Description

(4 hours – 4 units) The use of probability techniques, hypothesis testing, and predictive techniques to facilitate decision-making. Topics include descriptive statistics; probability and sampling distributions; statistical inference; correlation and linear regression; analysis of variance, chi-square and t-tests; and application of technology for statistical analysis including the interpretation of the relevance of the statistical findings. Applications using data from disciplines including business, social sciences, psychology, life science, health science, and education.

Hardware/Software

You will need: web access to complete homework; access to MS Word and MS Excel; and the ability to view online videos.

Statistics Software Package

We will use StatCrunch (a statistics software package) to complete the online labs in this class. You may purchase an access code for StatCrunch in the bookstore or directly (for a slight discount) at **www.statcrunch.com**. You will need StatCrunch almost immediately.

Math 060 SLO

Math 060 prepares you to:

1) Formulate questions that can be addressed with data, then organize, display, and analyze relevant data to address these questions and communicate results.
2) Apply numerical and algebraic reasoning and computational skills to support statistical analysis.
3) Construct, use, and interpret mathematical models, specifically linear functions to represent and communicate relationships in quantitative data.

Math 160 Student Learning Outcomes (SLO)

Math 160 prepares you to:

1) Summarize data graphically and numerically.
2) Use descriptive statistics (measures of central tendency, variation, relative position, and levels/scales of measurement) to describe a population and compare populations when appropriate.
3) Identify the sample space of an experiment or random trial.
4) Find and interpret the expected value and standard deviation of a Random variable.
5) Recognize the sampling distribution as a distribution of a sample statistic, the mean of the sampling distribution as the population mean, and the standard error of the sampling distribution as the standard deviation for the population (the Central Limit Theorem).
6) Construct and interpret confidence intervals.
7) Use hypothesis tests and inference (including t-tests for one and two populations and Chi-square test) to determine if a result is statistically significant for discrete (binomial) and continuous (normal) distributions.
8) Perform statistical analysis using technology such as SPSS, EXCEL, Minitab, or StatCrunch.

Exams

Expect 3 to 6 in-class exams. No make-ups, but I will drop your lowest exam (not including the final).

Final Exams

You will have a Math 060 final exam covering eight Math Interludes lessons in this class. You will also have a Math 160 final exam covering the statistics units Modules/Units in Canvas.

060 Final – Tues, May 28th, 12:00 – 2:00 pm

160 Final – Thurs, May 30th, 10:00 am – noon

A well-dressed man is fine; a well-dressed man with a degree & options is even better.

MATH 160 Grade

Categories	Percent
Interactive Reading & Quizzes	20%
Module Checkpoints	10%
Unit Checkpoints	10%
Labs & Other Activities	20%
In-class Exams	20%
Final Exam	20%

Math 060 Grade

Eighty percent of this grade is based on your Math Interludes work (flipped activities, homework, and quizzes). No make-ups, but I will drop your three lowest Math Interludes scores. The 060 final exam constitutes 20% of this grade.

Final Exam & Overall Grade

The good and bad news …

The good news: you can earn up to 5% extra credit on the Math 160 final exam by studying math in the Cuyamaca College STEM Center for approximately 4 hours per week (be sure to ask about this during the first week of class).

The bad news: you must earn at least a D on the Math 160 final exam and a minimum overall grade of 70% to pass Math 160 with a C or better.

Grade Scale

A plus-minus system is used to assign final grades.

Academic Honesty

Students are expected to adhere to the College's Academic Honesty/ Dishonesty Policy found in the College Catalog. Any student caught cheating or facilitating the act of cheating will earn a zero on the assessment in question. Any student who earns a zero for cheating three or more times will fail the class (even if the student has managed to maintain an overall passing grade).

Track Your Grades

Your grades will be updated regularly on Canvas.

Interactive Reading

Much of your Math 160 homework will be completed through the *interactive reading* assignments on Canvas. I will not accept late work, and you are not allowed to make up these assignments. However, I will drop your three lowest scores from this category.

Module Checkpoints

At the end of each Module in Canvas, you will have a *Module Checkpoint*. Think of these checkpoints as *take-home* quizzes that you complete online. To accommodate any technical difficulties, you are allowed three attempts on each Module Checkpoint. Again – no late work, and no make-ups, but I will drop your two lowest scores from this category.

Unit Checkpoints

Modules are organized into units on Canvas. At the end of each unit, you will have a *Unit Checkpoint* on Canvas. Think of these checkpoints as *take-home* exams that you complete online. Also, the unit checkpoints are great practice for each in class exam and the final exam. Again – no late work, and no make-ups, but I will drop your single lowest score from this category.

Labs & Other Activities

Additional assignments will include StatCrunch labs (completed on Canvas), class work, in-class group work, pop quizzes, and other activities. No late work and no make-ups, but I will drop your two lowest scores from this category.