

Math 075 PAL Syllabus Spring 2018 (Section#31446)
Intermediate Algebra for Statistics / Teachout (updated office hours 3/18)

Instructor: Matt Teachout

Contact Information: Email Address: matt.teachout@canyons.edu
Website: www.matt-teachout.org
Office: Seco-Hall 312 D (Valencia campus)

PAL: Math 075/140 PAL is a cohort class. You must enroll in both Math 075 Section#31446 and Math 140 section#31577 at the start of the semester. Only those students that were enrolled and completed the math 075 part of the class in the first half of the semester are eligible to take the math 140 part of the class in the second half of the semester.

Time/Place: Math 075/140 PAL classes meet Monday through Thursday from 11:00 am – 1:25 pm in Hasley Hall 302 at the Valencia campus. From February 5th to March 29th we will be covering Math 075 (Intermediate Algebra for Statistics) and from April 9th to May 31st we will be covering Math 140 (Statistics).

UPDATED Office Hours: (UPDATED March 18) My UPDATED office hours for the Spring 2018 semester are as follows. If you cannot come to my regular office hours, feel free to make an appointment. (Office Hours may be cancelled occasionally due to COC Meetings.)

- Monday from 1:45 – 2:45 pm in the EOPS office (room 117 in the student support center next to the Culinary Institute on the Valencia campus).
- Tuesday from 1:45 – 2:45 pm in the learning center (TLC) at the Valencia Campus.
- Wednesday from 1:45 – 2:45 pm in the EOPS office (room 117 in the student support center next to the Culinary Institute on the Valencia campus).
- Thursday from 1:45 – 2:45 pm in the learning center (TLC) at the Valencia Campus.

Student Learning Outcome: Here is an over-arching goal of the class. The student will be able to:

Construct, evaluate, and analyze mathematical models, specifically linear and exponential functions, to represent relationships in quantitative data.

Textbook and Class Materials: The free online textbook for Math 075 is “Introduction to Data Analysis” (1st edition) by Matt Teachout. The textbook, class materials and data sets can be found on my website www.matt-teachout.org. Just click under the “Int Alg for Stats” tab.

Statcato: Best practices for statistics education is to learn to solve real world problems by analyzing data with statistics software. No statistician calculates statistics with a calculator and a formula especially with large data sets. With that being said, we will primarily be learning to use a free statistics software called Statcato to solve problems. The web address for Statcato is www.statcato.org. Statcato is a free statistics software, but needs to be saved on your computer. Computers in class and in the TLC have Statcato saved already. If you wish to save Statcato on your home computer or laptop, there are detailed instructions on my website www.matt-teachout.org. Just click under the “Int Alg for Stats” tab. Look for the link at the top of the page that says “Statcato Directions – Downloading Program and Opening Files (for MAC and Windows)”.

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Optional Calculator and Flash Drive: A small cheap scientific calculator with an “LN” button is useful in math 075, but not required. Classroom calculators are available for students that do not have their own calculator. Also, a small inexpensive flash drive is useful for saving your work on, but again not required.

Tutoring: Feel free to come to my office hours or make an appointment to see me if you need any help. The TLC labs are also available for tutoring. The Valencia campus TLC (LTLC) is located next to the Library and the Canyon Country TLC is located in CCC-306. Not all math tutors can tutor Math 075, so it is advisable to ask if a math 075 tutor is available. MESA, EOPS, and DSPS also have tutoring available if you qualify for those programs. The TLC hours are given below. Note: A valid COC student ID is required to use the TLC.

Spring 2018 Semester Hours:
(February 5th - May 31st)
Valencia Campus: Mon - Thr 8:00 am - 8:00 pm. Fri - Sat 9:00 am - 1:00 pm.
Canyon Country Campus: Mon - Thr 9:00 am - 7:00pm.

Drop Policy: If you have four absences or more, you may be dropped from the class for lack of attendance. It is your responsibility to drop if necessary. You need to process the drop online or fill out the necessary paperwork and process it in the Admissions office. Here are the drop deadlines for Math 075 winter 2018.

02/05/2018 End: 03/29/2018
Add Deadline.....: 02/13/18
Drop w/o "W".....: 02/13/18
Drop Deadline.....: 03/15/18
Drop Refund.....: 02/07/18

Grading Scale:	90 – 100	A	60 – 69	D
	80 – 89	B	59 or below	F
	70 – 79	C		

Grade Summary:

- Six Exams: 45% of grade**
- Classwork and Homework Points: 25% of grade**
- Six Projects: 15% of grade**
- Final Exam: 15% of grade**

Exam Policy: There will be six exams worth 45% of your grade in the class. No make-up exams will be given after the exam has been returned to students unless there is a serious verified excuse. If you know ahead of time that you will be absent on an exam day, make arrangements with me to take the exam early. The lowest exam score will be dropped. If you are absent on an exam day, that exam will be the one that is dropped. See schedule for exam dates.

Final Exam: The final exam is cumulative and will be worth 15% of your grade in the class. It will be given on the last day of class during regular class time.

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Homework and Classwork:

Homework and Classwork points are lumped together into your “HW/CW” grade. Homework and Classwork points are worth 25% of your grade.

Classwork: Each day we will be going over material and work on problems during class. You will get classwork points each day for your work in class. Classwork points cannot be made up. If you are absent, leave early, come to class late, or are not working on the assignment during class, you will lose classwork points.

Homework: You will also get homework points for completing the in-class assignments. If you are in class and complete the in-class assignment, then you do not need to turn it in to me. If you are absent, late, leave early or are not working on the assignment during class, then you will need to turn in the assignment to me for points. You will also be assigned reading in the book for homework where you will be required to take notes on the book chapters and turn in your notes. You will also be assigned journal and affective domain assignments as part of your homework. These are small writing assignments. They can be typed or hand written and will need to be turned in for credit.

Project and Presentation: You will be doing six small real world data analysis projects. These small group projects will be done during class. Your group will make a poster and you will present your findings to your classmates. Projects are worth 15% of your grade. If you are absent on a project day, you will need to complete the project yourself at turn in for make up credit.

Attendance, Tardiness and Work Ethic: It is very important to your success in the class that you come to every scheduled class meeting and work on the material. Missing classes, coming to class late, leaving early, or not working on the material during class, will cause you to fall behind, lose classwork points, and greatly reduce your chances of succeeding in the class.

Formulas: A key part of modern statistics is using technology to solve problems, and not do complicated statistics calculations with formula and calculator. Whenever possible, we will use Statcato to find statistics and create graphs. We will look at formulas to understand them.

Laptops: If you have a laptop, you are welcome to use it during class. A laptop is not required. We have computers in the classroom for you to use.

Key Elements of Math 075

Critical Thinking and Growth Mindset: One of the main goals of math 075 will be to develop real world critical thinking skills. Remember intelligence, critical thinking, and math proficiency are not fixed quantities. Even if you think of yourself as not a math person, you are not stuck in this mindset. Our brains can grow and change. Any student can become a critical thinker. It just takes effort and the belief that we can change. Therefore there will be “exploring” exercises in almost every class, that help us not only develop critical thinking skills, but will help us understand statistics at a much higher level.

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Teamwork: You will be required to work with your fellow classmates to solve problems and analyze data. Working as a team is another important real world life skill that employers consistently want from their employees. Many points in the class are designed around working as a team to solve something that is difficult. If you do not work with your team or do not do your share of the work, you will not get full credit for assignments or projects.

In-class discovery based activities and problem solving: In most math courses, you listen to a lecture, then go home, and try to do problems that are similar to what the teacher taught in lecture. Math 075 is a little different. The emphasis of the course is not to do problems by yourself for homework. Instead, you will be expected to work with your fellow students to solve problems during class. In addition, the activities are meant to challenge you and teach you the topics at a higher level. In other words, the in-class activities are really the most important part of the class. That is where the real learning begins.

Productive Persistence: Studies show that students who are allowed to struggle and work through problems do much better than those who are given the answers right away. With this in mind, you will need to work hard and figure out material during activities. You will eventually get the answers, but I will not always give you answers to questions right away. I know this is hard on you, but we have seen huge gains in problem solving and critical thinking skills because we allow you to struggle some. Think of it this way. In the workplace, your employer is going to ask you to be able to work through situations and figure things out on your own. In real life, you do not have someone with an answer key standing by to help you.

Reading/Writing/Presenting: Math 075 is designed to teach you to apply statistics to the world around you. The study of statistics is really the study of information. Employer's number one request is that their employees can look over information, critically think to help find a solution, and then be able to present their solutions in written reports and verbal form. With that being said, Math 075 will incorporate a lot of reading, writing assignments and verbal presentations to your classmates. These are the real world skills that you need to succeed.

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Topic Outline with Quiz and Project Info:

Introduction: Syllabus, Two Types of Data (Categorical and Quantitative)

Section 1: Analyzing Categorical Data (Calculating and Using Percentages, Bar Plots, Pie Charts, Comparing % from multiple groups)

Exam#1 – Calculating basic Percentages, Making and Analyzing Bar Plots and Pie Charts,
Comparing Percentages from different groups

Project#1 – Poster Project on Categorical Data Analysis

Section 2: Relationships between different Categories (Making and Analyzing Two way tables, Marginal, Conditional and Joint Probabilities, Using conditional probabilities to show categories related)

Exam#2 - (Making and Analyzing Two way tables, Marginal, Conditional and Joint
Probabilities, Using conditional probabilities to show categories related)

Project#2 – Poster Project on Categorical Relationships

Introduction to Quantitative Data (Two types of Data, Graphs, Shapes, Mean verses Median)

Section 3: Analyzing Bell Shaped Quantitative Data (Shape (dotplots, histograms), Center (Mean), Spread (Standard Deviation), Typical Range, Unusual Values, Min, Max)

Exam#3 – (Dotplots, Histograms, Shape, Analyzing a bell shaped quantitative data set,
Center (Mean), Spread (Standard Deviation), Typical Range, Unusual Values,
Min, Max)

Project#3 – Poster Project on Bell Shaped Quantitative Analysis

Section 4: Analyzing Skewed Quantitative Data (Skewed Shape, Median, Quartiles, Boxplot, IQR, Outliers)

Exam#4 - (Skewed Shape, Median, Quartiles, Boxplot, IQR, Outliers)

Project#4 – Poster Project on Skewed Quantitative Analysis

Introduction to Relationships between two different quantitative variables (explanatory, response, scatterplots)

Section 5: Linear Relationships (Scatterplots, Correlation Coefficient, R-squared, Regression Line, Slope, Y-intercept, Residuals, Standard Deviation of the Residual Errors, Making Predictions in the Scope, multivariable correlation comparisons, correlation is not causation)

Exam#5 - (Scatterplots, Correlation Coefficient, R-squared, Regression Line, Slope,
Y-intercept, Residuals, and Standard Deviation of the Residual Errors)

Project#5 – Poster Project on Linear Quantitative Relationships

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Section 6: Nonlinear Relationships (Exponential growth and decay, Logarithmic growth and decay, Quadratic opening up and down, Min and Max values, R-squared, Standard Deviation of the Residual Errors, Finding the best Fit, Making Predictions in the Scope)

Exam#6 – Exponential growth and decay, Logarithmic growth and decay, Quadratic opening up and down, Min and Max values, R-squared, Standard Deviation of the Residual Errors, Finding the best Fit, Making Predictions in the Scope)
Project#5 – Poster Project on Curved Quantitative Relationships

Final Review / Cumulative Final Exam

Management of Stress and Mental Health: Often the pressure on our students is very strong, involving academic commitments, relationships, outside jobs and family pressure to name a few. The staff and faculty of College of the Canyons are here to see you succeed academically and care about your emotional and physical health. You can learn more about the broad range of confidential student services, including counseling and mental health services available on campus by visiting the Student Health & Wellness Center in the Student Services Building (across from the bookstore) or by clicking on <http://www.canyons.edu/offices/Health/Pages/default.aspx>. The phone number is **661-362-3259**. At the Canyon Country Campus, the Health Center is in 1B adjacent to Administration, Admissions and Records.

In addition, the **National Suicide Hotline number is 1-800-273- 8255(TALK)**. All students at COC are encouraged to enter that phone number in their cells. You can call when you, or someone you know, is having thoughts of suicide or is in severe distress.

You can also now use the **Crisis Text Line:** Just text **“Courage”** to **741741**. Someone will get back to you immediately. Its free and 24/7 confidential.

Behavior / Cheating Policy: I like my classes to have a fun, encouraging environment. I expect you to come to class with a commitment to learn, take good notes and participate in discussions and classwork. I like group learning in my class. I expect my students to work together and encourage each other. With that being said, I do expect students to abide by the code of conduct in the COC college handbook. Please do not disrupt the class by talking during lecture or using profane language. Laptops can also be a distraction during class and should only be used for course-approved materials. Do not go on any websites or video games during class, as it is a distraction to other students. Also, keep your cell phones off or on silent and put away. I do encourage you to talk and work together during classwork time, but please keep your conversations to a whisper and make sure they are math related. Cell phones are not allowed on exams. They must be turned off and put on top of your desk. I have had problems with students attempting to cheat by hiding their cell phones under their desk. I reserve the right to change people’s seats at my discretion. I like to have everyone change seats on test days. I will also have students change seats if they cannot get along with their neighbors.

Note: Acts of academic dishonesty will be forwarded to the Office of the Dean of Students, whose personnel will determine appropriate sanctions.