Welcome to Math 27
Algebra for Statistics

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Section 0315

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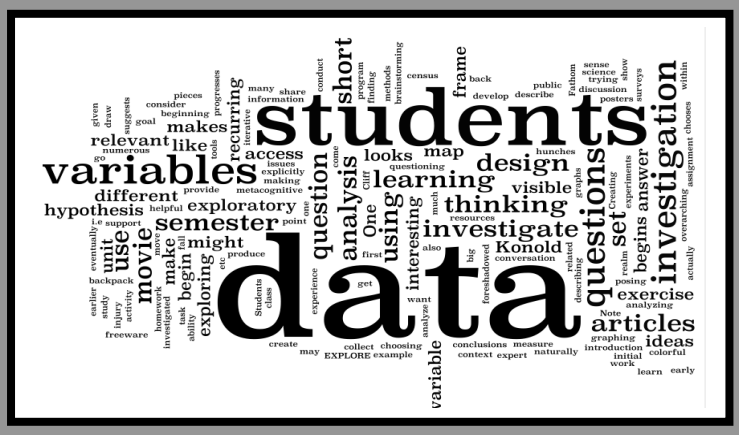
Office hours:
TTH 12-1:00 in MA 129



Math 27 is an accelerated one-course math path to college-level statistics (Math 34 at LMC). This novel course is designed especially for students who do NOT plan to major in math, science, computer science or business.

Here are the learning goals for Math 27:

EXPLORATORY DATA ANALYSIS: Students will be able to formulate questions that can be addressed with data, then organize, display, and analyze relevant data to address these questions and communicate results.

DATA COLLECTION: Students will be able to apply the basic principles of study design to develop and analyze the validity of simple experiments and sampling plans related to a given situation and goal.

NUMERICAL AND ALGEBRAIC REASONING: Students will demonstrate numerical and algebraic reasoning skills to support statistical analysis.

MATHEMATICAL MODELING WITH FUNCTIONS: Students will construct, use, and interpret mathematical models, specifically linear functions and exponential functions, to represent and understand relationships in quantitative data.

EFFECTIVE LEARNING STRATEGIES: Students will demonstrate effective learning strategies for success in college.

A personal note from Myra: This list of learning goals may seem daunting now, but don't worry. The secret to success in this course is PERSISTENT, STEADY WORK. If you attend class regularly, ask for help when you need it and complete assignments on time, I am confident that you will succeed (even if you are not a "math person.") In my experience teaching this course, I have never met anyone who could not learn the material IF they worked hard. In addition, your hard work this semester greatly increases your chances for success in college-level statistics. LMC research shows that students in Math 27 are 2 to 4 times more likely to persist to and pass college-level statistics when compared to students enrolled in other preparatory math courses at LMC.

Course materials:

We will use the first half of the Open Learning Initiative's (OLI) *Concepts of Statistics* course, instead of a textbook, and a statistical software package called *StatCrunch*. OLI materials are free, but there is a small fee for Statcrunch ($13.20). See the document *Getting Started* for instructions on how to register for the free OLI online materials and how to purchase a 6-month Statcrunch license.

Description of Assignments:

Overview: In OLI, the material is divided into Modules, which are like chapters. We will cover 5 Modules. Each module is further divided into Topics. For each Topic, you will do an in-class activity, an online reading assignment with exercises, and an online Checkpoint quiz. At the end of the Module, there is a Module Checkpoint quiz covering all of the material in the Module. For 3 of the 5 Modules, there is also an online Lab assignment and a corresponding project report. At the end of the course, we will have a comprehensive final exam.

In-class activities: During class time, we will often be working in groups on activities that dovetail with the OLI material. There will be 12 in-class activities, one for each Topic.

Online reading assignments and exercises : There are two types of online exercises, *Learn By Doing* and *Did I Get This*. These exercises are embedded in the reading, not at the end of the section like in a standard textbook. *Learn By Doing* exercises are hands-on activities, often using an applet, that provide you the opportunity to investigate concepts and practice skills. These exercises have hints to guide you and detailed solutions. *Did I Get This* exercises help you assess your progress with each concept without hints. These are multiple-choice items with feedback tailored to each response. The grades for both types of exercises are based on effort. If you complete an exercise, you will receive full credit even if you make mistakes. As we all know, mistakes are part of learning. So if you make a mistake, use the feedback and redo the exercise until you get it right. These exercises will prepare you for the Checkpoint quizzes and the multiple-choice portion of the final exam.

Checkpoints: Checkpoints are multiple-choice online quizzes that occur at the end of each Topic and the end of each Module. You will have two attempts for each Checkpoint. Your grade will be the higher score on the two attempts. If you have done the exercises and learned from the feedback, you should be well prepared for the Checkpoints.

Online Labs: Online labs occur at the end of some Modules. The labs give you step-by-step guidance in analyzing a real-life data set with *Statcrunch*. Labs will help prepare you for the projects.

Projects: Projects require you to analyze a real-life data set to answer a research question. For each Project you will submit a written report via Blackboard (Bb). Projects require the use of technology (StatCrunch). The OLI Labs at the end of Modules will prepare you for the Projects.

Final Exam: The final exam is multiple-choice (like the Checkpoints).

Grading:

To make an A, earn at least 500 points AND "hit the mark" on all 3 Projects.
To make a B, earn at least 450 points AND "hit the mark" on 2 Projects.
To make a C, earn at least 400 points AND "hit the mark" on 1 Project.

How do you earn points?

In-class activities (120 points): In-class activities are graded based on effort. If you are absent, you will have to do the group work activity on your own, which is MUCH harder. To receive credit on missed class work, make an appointment with me during an office hour or conference hour to discuss your completed assignment. Late work will not receive full credit and must be completed prior to the deadline for the Module Checkpoint.

Online exercises (170 points): For OLI exercises (*Learn By Doing* and *Did I Get This*), OLI Labs and Bb surveys, points are awarded for effort. If you do the work, you get the points, even if you make mistakes. At the end of each module, OLI will show the percentage of the exercises that you completed. I enter points in the Bb gradebook based on this percentage. For example, if you complete 95% of Module 1 exercises, you earn 95% of 30 points, which is 29 points. I will calculate your effort points for the Module on the day that we finish the Module. Late work on OLI exercises must be completed by the due date for the Module Checkpoint. You cannot earn effort points for exercises completed after this date, so plan to get your work done on time. The point distribution by Module is shown in the table at the end of this document.

Checkpoint Quizzes (150 points): At the end of each Topic and the end of each Module, there is a Checkpoint. OLI Checkpoints are multiple-choice quizzes. You can take each Checkpoint twice. I record the higher score. See the table at the end of this document for the point distribution for Checkpoints. No late work is accepted on Checkpoints. Solutions to Checkpoints will be available 3 minutes after the deadline.

Online Labs (60 points): Labs are graded based on effort. You earn full credit for each lab that you complete. For credit, you must complete the lab by the due date. No late work is accepted on labs.

Final exam (60 points): The final exam is on Dec. 12 from 12-2:00. The final exam is multiple choice, similar to Checkpoint quizzes.

What does it mean to "hit the mark" on a Project?

Projects require you to apply data analysis skills and produce a written report. In each project you will answer a research question using real data. OLI Labs prepare you for the type of thinking required for these projects. Using a rubric, I will determine whether your work "hits the mark" or "doesn't hit the mark." (See the sample rubric at the end of this document.) If your work "doesn't hit the mark," I will provide feedback and examples of model reports for you to study. Then you will have another opportunity to demonstrate these skills. No late work is accepted on Projects. If you miss the deadline, use the make-up opportunity to earn credit for the Project.

POINTS BY MODULE

	EFFORT POINTS			OLI Checkpoints	Module Total
Module	OLI Exercises	OLI Lab	In-class activities		
1	30	0	30	36	96
2	60	20	40	51	171
3	50	20	30	45	145
4	15	0	10	8	33
5	15	20	10	10	55
TOTALS	170	60	120	150	500

The final exam is an additional 60 points.

More specific description of points for OLI Checkpoints (points in parenthesis):
Module 1: Topic 1.1 (5), Topic 1.2 (4), Topic 1.3 (7), Module 1 (20)
Module 2: Topic 2.1 (8), Topic 2.2 (5), Topic 2.3 (10), Topic 2.4 (10), Module 2 (18)
Module 3: Topic 3.1 (7), Topic 3.2 (8), Topic 3.3 (8), Module 3 (22)
Module 4: Module 4 (8)
Module 5: Module 5 (10)

SAMPLE RUBRIC

	Description of Work
Work Hits the Mark	Work meets the checklist requirements for the assignment. Analysis uses a wide variety of concepts from the Module in clear, accurate, precise, and appropriate ways. Explanations demonstrate a good understanding of concepts. Paper is organized and coherent.
OOPS, Work Doesn't Hit the Mark	Work may not meet all of the checklist requirements for the assignment. Analysis uses some concepts from the Module but may miss opportunities to apply some fundamental concepts that are relevant. Work may have problems with clear, accurate, precise or appropriate use of concepts. Explanations suggest some confusion or misunderstanding of core concepts. The discussion is unorganized and hard to follow or the discussion is in essence a list of observations that are not explicitly tied to answering the research question.

Strategies for Success

Come to class (and be on time)!

This is obvious, but it is probably the single most important strategy for successfully completing Math 27. When you are in class, you have the opportunity to work with other students and to get feedback and help from me. We will also devote class time to working on activities and online exercises that are worth points. So attending class is an efficient and productive way to get course work done.

Get help when you need it!

It sounds simple but can be hard to do, especially if you are feeling frustrated or confused. If at some point in the course, you feel like giving up or you begin to avoid doing the work because it is hard for you (or at worst you are tempted to cheat), **ask for help as soon as possible**.

Getting help from Myra: The easiest way to get help from me is in class. You can also email me at msnell@losmedanos.edu or visit me during office hours. My office hours are Tuesdays and Thursdays from 12-1:00.

Myra's thoughts on asking questions: I have heard students say that they don't ask questions because they fear that they will look stupid. In my view nothing could be further from the truth. To me, it takes a lot of critical thinking to formulate a question. I also view asking for help as an act of intellectual courage. I appreciate it when students ask questions and respect those that do. So please ask questions!

Getting help from classmates: We will work in groups a lot this semester. Working with others has advantages. It can keep you motivated. In addition, talking can build deeper understanding and help ideas stick. But there is a difference between working with someone else and letting somebody else do your work for you. The former is collaboration; the latter is cheating … and cheating you of your education. When you work with others, what you eventually produce should be yours. Your work should reflect your understanding and be written in your own words. Always make sure that your collaboration with others is promoting your learning, not undermining it.

(Note: According to LMC policy, "dishonesty, such as cheating, plagiarism, or knowingly furnishing false information to the college, is grounds for disciplinary action and suspension." See page 27 of the 2012-2013 LMC catalog.)

If you have any questions about the syllabus, be sure to ask! ☺ I look forward to working with you this semester!

Best wishes,
Myra