# Math 227 Outline

**Elementary Statistics**


<table>
<thead>
<tr>
<th>Topics to be Covered</th>
<th>Sections from Text</th>
<th>Approximate Time Line</th>
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<tr>
<td><strong>Chapter 1 Data Collection:</strong> Introduction to the Practice of Statistics; Observational Studies versus Designed Experiments; Simple Random Sampling; Other Effective Sampling Methods; Bias in Sampling.</td>
<td>Chapter 1: 1.1 to 1.5 (Skip 1.6)</td>
<td>½ week</td>
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<tr>
<td><strong>Chapter 2 Organizing and Summarizing Data:</strong> Organizing Qualitative Data; Organizing Quantitative Data: The Popular Displays; Graphical Misrepresentations of Data. Use StatCrunch to organize data, select random samples, and create various graphs.</td>
<td>Chapter 2: All 3 Sections</td>
<td>1 week</td>
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<td><strong>Chapter 3 Numerically Summarizing Data:</strong> Measures of Central Tendency; Measures of Dispersion; Measures of Position and Outliers; The Five-Number Summary and Boxplots. Use StatCrunch to find descriptive statistics and graph boxplots.</td>
<td>Chapter 3: 3.1 to 3.2, 3.4 to 3.5 (Optional: 3.3)</td>
<td>1 week</td>
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<td><strong>Chapter 4 Describing the Relation between two variables:</strong> Use StatCrunch to graph Scatter Diagram and to calculate Correlation; Use StatCrunch to perform the Least-Square Regression Analysis.</td>
<td>Chapter 4: 4.1 to 4.2 (Skip 4.3 &amp; 4.4)</td>
<td>½ week</td>
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<td><strong>Chapter 5 Probability:</strong> Probability Rules; The Addition Rule and Complements; Independence and the Multiplication Rule; Conditional Probability and the General Multiplication Rule; Counting Techniques; Which Method Do I Use?</td>
<td>Chapter 5: All 6 Sections</td>
<td>1½ weeks</td>
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<td><strong>Chapter 6 Discrete Probability Distributions:</strong> Discrete Random Variables; The Binomial Probability Distribution.</td>
<td>Chapter 6: All 2 Sections</td>
<td>1 week</td>
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<td><strong>Chapter 7 The Normal Probability Distribution:</strong> Properties of the Normal Distribution; Applications of the Normal Distribution; Use StatCrunch to graph a normality plot for Assessing Normality.</td>
<td>Chapter 7: 7.1 to 7.3 (Skip 7.4)</td>
<td>1 week</td>
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<td><strong>Chapter 5 to 7:</strong> Use StatCrunch to find probabilities related to various probability distributions.</td>
<td>Chapter 5 to 7</td>
<td>½ week</td>
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<td><strong>Chapter 8 Sampling Distributions:</strong> Distribution of the Sample Mean; Distribution of the Sample Proportion. Use StatCrunch to simulate and describe a sampling distribution.</td>
<td>Chapter 8: All 2 Sections</td>
<td>1½ weeks</td>
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<td><strong>Chapter 9 Estimating the Value of a Parameter:</strong> Estimating a Population Proportion; Estimating a Population Mean; Which Procedure Do I Use?</td>
<td>Chapter 9: All 3 Sections</td>
<td>1 week</td>
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<td><strong>Chapter 10 Hypothesis Tests Regarding a Parameter:</strong> The language of Hypothesis Testing; Hypothesis Tests for a Population Proportion; Hypothesis Tests for a Population Mean; Which Method Do I use? Introduce the Classical Approach but emphasize on the P-Value Approach method.</td>
<td>Chapter 10 All 4 Sections</td>
<td>1 week</td>
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<tr>
<td><strong>Ch9 and 10:</strong> Use StatCrunch to find probabilities related to sampling distributions, find confidence intervals for a parameter, and perform hypothesis tests for a parameter.</td>
<td>Chapter 8 to 10</td>
<td>½ week</td>
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Note: StatCrunch is embedded in MyStatLab courseware and it is used throughout the course. You can reserve the computer lab or check out a set of 20 to 40 laptops from the Math center for technology demos or hands-on technology practice. If you prefer bringing your class to the computer lab rather than using laptops in your classroom, please submit your computer lab schedules to Yoon Yun as soon as possible so that the lab can be reserved for the requested dates. Please check with Maria Renteria regarding the classroom laptop check out availability. There are 4 unscheduled weeks on the time line: one week is for public holiday accommodations or catching up with the schedule, one week is for project discussion (1 to 3 projects), and two weeks are for exams. (1 week ≈ 4 hours of actual teaching time)

Specific Department Guidelines and Support Materials for Math 227:

Computer component:
The courseware for this course is MyStatLab and the statistical software is StatCrunch. Online homework will be assigned through MyStatLab, and StatCrunch will be used for online homework involving technology. All data sets for the textbook are on the StatCrunch website.

Available Instructor Materials
Various resources including Instructor’s Solution Manual, Pre- and Post- Tests, PowerPoint Presentations, and Video Lectures are available through your MyStatLab course. If you don’t have a MyMathLab or MyStatLab account, please email Debby Wong. Both MyMathLab and MyStatLab use the same Pearson account.

Copying from a Master Course

The math department created a Math 227 Master Course for instructors to copy if they wish. Below are the steps on how to copy a course.
Go to MyStatLab.com → Click Create/Copy Course (on the top of the page) → Click Copy a Course → Copy Another Instructor’s Course → Enter Course ID: yun50167 → Click Go → Fill in the requested information.
It will take one to 24 hours for a newly created course to be available. Once it is available, you need to change the availability date and due date for each assignment according to your class’s timetable. You may want to eliminate, add, or alter some of the assignments.

Other Resources: Sample syllabi, sample exams, and sample StatCrunch assignments with instructions are available in the department website (www.lamission.edu/math) under Faculty Resources.
Free tutoring is available at the Math Center located in CMS120.

Calculator: Any scientific calculator with statistical functions is appropriate for the course. Instructor may not require graphing calculators since basic statistic calculations can be performed by various scientific calculators.

Student Learning Outcomes (SLO’s):
The following student learning outcomes must be included in your syllabus:

1. Use probability concepts to solve problems and interpret their results.
2. Demonstrate proficiency in descriptive statistics and inferential analyses to draw conclusions about a population.

Student Learning Outcomes will be assessed periodically but not every semester. During the SLO assessment semester, the math department will provide a set of questions for instructors to include these questions in their final exam. Instructors will grade the questions according to a given rubric and will report the result of the assessment in a table format provided by the department.
General Departmental Policy:

To ensure student success in future math courses, all topics identified in this outline must be adequately covered. For this reason, it is critical that you carefully plan your semester to include Exams, Quizzes, and Holidays.

During the semester, at least three major exams and a cumulative final are required. The exams should be closed book, and require students to demonstrate problem solving skills by showing work for a significant number of problems.

The final exam must be given at the time stipulated in the schedule of classes. It should contribute between 25% and 35% of the student’s final grade in the course. If projects are required for your course, the final exam percentage weight can be reduced to between 20% and 30%. The remaining percentage of the course grade must be based on exams, quizzes, homework, technology homework, projects, etc..

Instructors should try to be sensitive to the level of the course: treat review material as review, and teach to the level of the subject. For example, definitions and properties should be employed within the context of the underlying mathematical structure. Lack of proficiency in the prerequisite material and/or lack of commitment to the course work on the part of the student should not affect the content of the course. The level of instruction, assigned work, and test questions must conform to a college level curriculum.

Instructors who will not teach from the same text in the following semester are required to turn in their textbook to the department secretary, Margarita Padilla, (818)364-7894, at the end of the current semester.

Coordinators:
For questions regarding the support material or this guideline, please contact:

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Revised by YY