

West Los Angeles College SLO Addendum

Course Name and Number MATH 227

Course Title STATISTICS

Course Objectives (as stated in the Course Outline of Record)

1. Compute the measures of Central Tendency: the mean, mode, median, as well as the quartiles and percentiles of grouped or ungrouped data.
2. Compute the measures of variations, standard deviations, variance, and range of grouped or ungrouped data.
3. Find and exhibit the probability of events and the Z-score of sample data.
4. Identify, demonstrate and apply the use of the Binomial and Normal Distribution in statistical applications.
5. Explain and use the Central Limit Theorem.
6. Make inferences of population parameters.
7. Describe and use the Chi Square distribution.
8. Describe and explain statistical estimation and test of hypotheses.
9. Test hypotheses of population parameters from sample data.
10. Discuss and write a linear model for the relationship between two variables.
11. Apply these concepts to diverse disciplines, i.e., psychology, sociology, political science.

<p align="center"><u>Course SLO</u></p> <p>One sentence that describes a major piece of knowledge, skill, or ability that students can demonstrate by the end of the course</p> <p><i>Finish the sentence, "At end of the course, the successful student will be able to... "</i></p>	<p align="center"><u>Assessment Method</u></p> <p>Major assignment, project or test used to demonstrate or apply outcome</p> <p><i>Remember to have a mix of qualitative and quantitative assessment methods.</i></p>	<p align="center"><u>Criterion Level</u></p> <p>Reflects satisfactory performance on the SLO</p> <ul style="list-style-type: none"> • <i>At least X percent of students achieve this course SLO.</i> • <i>All students achieve at least the Y level on this SLO.</i> • <i>At least X percent of students achieve the Y level on this course SLO.</i>
<p>1. Given a set of sample data, perform a HYPOTHESIS TEST (HT). See last page "Math 227 Hypothesis Testing Template."</p>	<p>Students will complete this template on a near-end of the semester quiz or on the final exam. A grading rubric will be used to access the results for each component of the HT.</p>	<p>The template will be graded on a 25 point scale. Ideally, at least 55% of the class will score 18/25 (72%) or better on the template.</p>
<p>2.</p>		
<p>3.</p>		
<p>4.</p>		

Mapping to Program SLO and Institutional SLOs

Please indicate with an "X" in the appropriate boxes below, the Course SLO mapping to the corresponding Program and Institutional SLO(s).

Course SLO	Program SLO												Institutional SLO									
	1	2	3	4	5	6	7	8	9	10	11	12	A	B	C	D	E	F	G	H	I	
#1	X		X		X								X		X							
#2																						

#3																				
#4																				

Course SLO Acknowledgements

Draft prepared by Matthew Robertson

Division Chair

Date

SLO Coordinator

Date

Dean

Date

Curriculum Committee Chair

Date

Academic Senate President

Date

VP of Academic Affairs (initial) and College President

Date

Math 227 Hypothesis Testing Template

1. Describe the population parameter about which hypothesis are to be tested.
2. State the null hypothesis, H_0 .
3. State the alternative hypothesis, H_a . **Determine what type of test (upper, lower, or two-tailed).**
4. Select the significance level α for the test. Draw the appropriate distribution, label α , and determine the Rejection Region.
5. Display the test statistic to be used, with substitution of the hypothesized value identified in step 2 but without any computations at this point. Also state any assumptions.
6. Plug in sample data into the test statistic and then find the value of the test statistic itself.
7. Determine the p-value associated with the observed value of the test statistic. **Draw a picture of the appropriate distribution, shading the p-value area.**
8. State the conclusion (which will be to reject H_0 if p-value $\leq \alpha$, and not to reject H_0 otherwise.) The conclusion should be stated in the context of the problem, and the level of significance should be included.