

# West Los Angeles College

## SLO Addendum

Course Name and Number MATH 262

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Course Title CALCULUS II

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

#### 1. INVERSE FUNCTIONS: EXPONENTIAL, LOGARITHMIC, AND INVERSE TRIGONOMETRIC FUNCTIONS.

- a. Define Inverse Functions.
- b. Restate and Describe Exponential Functions and Their Derivatives.
- c. Compute Logarithmic Functions.
- d. Evaluate Derivatives of Logarithmic Functions.
- e. Analyze Exponential Growth and Decay.
- f. Describe Inverse Trigonometric Functions.
- g. Analyze and distinguish Hyperbolic Functions.
- h. Discuss and use Indeterminate Forms and L'Hospital's Rule.

#### 2. TECHNIQUES OF INTEGRATION.

- a. Practice Integration by Parts.
- b. Analyze Trigonometric Integrals.
- c. Utilize Trigonometric Substitution.
- d. Employ and decompose Integration of Rational Functions by Partial Fractions.
- e. Apply Strategy for Integration.
- f. Recognize Integration Using Tables and Computer Algebra Systems.
- g. Practice Approximate Integration.
- h. Evaluate Improper Integrals.

#### 3. FURTHER APPLICATIONS OF INTEGRATION.

- a. Compute Arc Length.
- b. Calculate Area of a Surface of Revolution.
- c. Describe Applications to Physics and Engineering.
- d. Describe Applications to Economics and Biology.
- e. Compute Probability.

#### 4. DIFFERENTIAL EQUATIONS

- a. Set-up and use Modeling with Differential Equations.
- b. Identify Direction Fields and utilize Euler's Method.
- c. Recognize and solve Separable Equations.
- d. Apply Models for Population Growth.
- e. Recognize and solve Linear Equations.
- f. Interpret Predator-Prey Systems.

#### 5. PARAMETRIC EQUATIONS AND POLAR COORDINATES.

- a. Graph Curves Defined by Parametric Equations.
- b. Explain Calculus with Parametric Curves.

- c. Locate Polar Coordinates.
- d. Compute Areas and Lengths in Polar Coordinates.
- e. Analyze Conic Sections.
- f. Translate Conic Sections into Polar Coordinates.
- 6. INFINITE SEQUENCES AND SERIES.
  - a. Discuss Sequences.
  - b. Describe Series.
  - c. Employ The Integral Test and Estimate the Sums.
  - d. Practice The Comparison Tests.
  - e. Illustrate Alternating Series.
  - f. Contrast Absolute Convergence and the Ratio and Root Tests.
  - g. Explain Strategy for Testing Series.
  - h. Interpret Power Series.
  - i. Represent Functions as Power Series.
  - j. Explain and expand Taylor and Maclaurin Series.
  - k. Apply Taylor Polynomials

Math Division Program SLOs (as stated in the Course Outline of Record)

Program SLOs:

- 3. Use mathematical tools essential for analyzing quantitative problems and for producing solutions. (Theme: mathematical tools)
- 4. Apply advanced mathematical concepts and tools (algebra, calculus) essential in upper division academic work and/or workplace tasks. (Theme: advanced mathematical operations—algebra, calculus)

<p align="center"><b><u>Course SLO</u></b></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"><b><u>Assessment Method</u></b></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"><b><u>Criterion Level</u></b></p> <p>Reflects satisfactory performance on the SLO</p> <ul style="list-style-type: none"> <li>• <i>At least X percent of students achieve this course SLO.</i></li> <li>• <i>All students achieve at least the Y level on this SLO.</i></li> <li>• <i>At least X percent of students achieve the Y level on this course SLO.</i></li> </ul>
<p>1. Model and solve an applied problem by formulating a definite integral and evaluating the integral using an appropriate algebraic technique (e.g. substitution, integration by parts) or using numerical techniques (e.g. Simpson's Rule or Taylor polynomials).</p>	<p>Students will answer questions embedded on a final exam or other in-class exercise.</p>	<p>At least 60% of students will achieve at least the 75% level on this SLO.</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			X		X	
#2			X	X									X	X	X			X		X	
#3																					
#4																					

## Course SLO Acknowledgements

Draft prepared by Bonnie Blustein

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 Curriculum Committee Chair  
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 Date

\_\_\_\_\_  
 Academic Senate President  
 Adrienne Foster

\_\_\_\_\_  
 Date

\_\_\_\_\_  
 VP of Academic Affairs (initial) and College President

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 Date