

West Los Angeles College

SLO Addendum

Course Name and Number MATH 275

Course Title ORDINARY DIFFERENTIAL EQUATIONS

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

1.
 - a. General solution, initial value problems.
 - b. Existence and uniqueness theorems
 - c. Utilize Differential Equations as Mathematical Models.

2.
 - a. Solve separable, linear and exact equations.
 - b. Sketch phase lines of autonomous equations.
 - c. Use numerical methods to solve initial value problems

3.
 - a. Study general properties of second order linear equations.
 - b. Solve linear differential equations with constant coefficients.
 - c. Model problems in Physics, Biology, Engineering, and Economics that lead to differential equations.

4.
 - a. Define the Laplace transform and study their general properties.
 - b. Use the tables to find the Laplace transform and inverse Laplace transform.
 - c. Write piecewise defined functions in terms of the unit step functions.
 - d. Define impulse functions.
 - e. Use the Laplace transforms to solve differential equations.
 - f. Use the Laplace transforms to solve problems in Structural Mechanics.

5.
 - a. Define systems of equations in vector form.
 - b. Reducing higher order scalar equations to systems of first order equations.
 - c. Solve linear systems with constant coefficients using Eigen values and Eigen vectors and matrix exponential.
 - d. Explain the complexity in nonlinear systems and describe Chaos.

6.
 - a. Use power series to solve differential equations.
 - b. Explain solutions about ordinary and singular points.

<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 80 percent of students achieve this course SLO.</i> • <i>All students achieve at least the B level on this SLO.</i> • <i>At least 70 percent of students achieve the B level on this course SLO.</i>
<p>1. Solve first order equations using analytical, numerical, and qualitative methods.</p>	<p>Students will answer questions embedded on a final exam. The final exam contains questions that cover the four parts. A scantron scanner will be used to access the results for each of the relevant questions.</p>	<p>Each question will be answered correctly by 80% of students.</p>
<p>2. Solve linear equations using the methods of variation of parameters and undetermined coefficients.</p>		
<p>3. Solve initial value problems using the Laplace transforms.</p>		

4. Solve homogeneous and non-homogeneous systems of equations with constant coefficients.		

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							
#2		X	X	X	X								X		X							
#3		X	X	X	X								X		X							
#4		X	X	X	X								X		X							

Course SLO Acknowledgements

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