Math 2A-61, Spring 2020 (46293) -- ONLINE — Richard Hansen
Differential Equations; TTh 6:30-8:45 pm; via Zoom — email: HansenRichard@fhda.edu
Text: Nagle/Saff/Snider, Fundamentals of Differential Equations, 9th edition
Website: www.deanza.edu/faculty/hansenrichard — Office Hours: MTWTh 5:00-6:00 pm; via Zoom

Syllabus: Ordinary differential equations and selected applications. Prerequisite: MATH 1D (grade C or better)

Equipment: Graphing calculator, numerical only; no algebraic calculators (no TI-92 or equivalent)

Week (Tue)	Topics with reference to chapters and sections in Nagle/Saff/Snider
1 (4/14)	Introduction; 1: 1-4 (solutions, initial value problems, direction fields, Euler approx); Quiz #1
2 (4/21)	2: 1-4 (first order equations: separable, linear, exact); 3: 1, 2, 4 (modeling); Quiz #2
3 (4/28)	4: 1-4 (second order equations: spring oscillator, homogeneous and nonhomogeneous); Quiz #3
4 (5/5)	4: 5-7 (second order equations: solution techniques); *Test #1 (7 May)*
5 (5/12)	5: 1, 2, 4, 5 (systems, phase plane analysis, and applications); Quiz #4
6 (5/19)	6: 1-4 (higher order linear equations: solution techniques); Quiz #5
7 (5/26)	8: 2-4 (power series solutions); *Test #2 (28 May)*
8 (6/2)	8: 5-7 (equidimensional equations, Frobenius, second independent solution); Quiz #6
9 (6/9)	7: 1-5 (Laplace Transforms: definition, properties, inverses, initial value problems); Quiz #7
10 (6/16)	7: 6-10 (discontinuous, periodic, power, and impulse functions, convolution); Test #3 (18 June)
11 (6/23)	**Final Examination, Thursday, 25 June, 6:15 - 8:15 pm**

Course Requirements: The course will consist of a combination of teacher demonstrations with student participation in discussions, individual, and group work.

1. There will be seven Homework **Quizzes** during the quarter based upon the suggested problems. No make-ups will be given, unless arranged in advance. The lowest quiz score will be dropped to compute the course grade. Success in the course requires practice: at a minimum, students should work the problems that are suggested.
2. There will be three in-class **Tests**. Note the dates; no make-ups will be given, unless arranged in advance. If higher, one-half of the score on the final exam will replace the lowest test score to compute the course grade.
3. There will be a comprehensive two-hour **Final Examination**, Thursday, June 25, from 6:15 to 8:15 pm. Any student missing the final exam will fail the course; no excuses are acceptable.

Grading:			
	Quizzes	(6 X possible 25 points each)	150
	Tests	(3 X possible 50 points each)	150
	Final Exam	(1 X possible 100 points)	100
			400 points

Course grades will reflect the following percentage range of total scores:
A = $90 \le \% \le 400+$ [360, 400+) B = $75 \le \% < 90$ [300, 360) C = $60 \le \% < 75$ [240, 300)
D = $50 \le \% < 60$ [200, 240) F = below 50% (0, 200)
Grades of B+ and C+ will be used as the final distribution of grades warrants; A-, B-, and C- will not be used.

Attendance: Regular attendance is expected. A student who misses any class during the first two weeks of the quarter may be dropped from the course. Inform the instructor, in advance, of any necessary absences; email the instructor if an emergency arises. Note, however, that it is the **student's responsibility** to formally "drop" the course. Protect your academic record by observing these deadlines:
26 April to drop with no record 8 May for P/NP option 5 June to drop with a "W"

Student Learning Outcome(s):

*Construct and evaluate differential equation models to solve application problems.
*Classify, solve and analyze differential equation problems by applying appropriate techniques and theory.