MATH 3F — DIFFERENTIAL EQUATIONS

Laney College, Fall 2019

Fred Bourgoin

Course code:	48485
Class hours:	MW 11:00–12:15 in G-211
Prerequisites:	Math 3B (Calculus II) and Math 3E (Linear Algebra)
	Recommended preparation: Math 3C (Calculus III)
Textbook:	None required
	Recom.: Nagle, *Fundamentals of Differential Equations,* 8E
Instructor:	Fred Bourgoin
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Office hours:	MW 10–11 a.m. & 5–6 p.m., TTh 10:30–11:30 a.m. in G-201
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Canvas:	learn.peralta.edu

Course Content

Ordinary differential equations: First-order, second order, and higher-order equations; separable and exact equations, series solutions, Laplace transformations, systems of differential equations.

Student Learning Outcomes

These are the skills that you will have acquired upon completing the course.
- Formulate models for various real-world phenomena using first order, second order and systems of differential equations.
- Generate solutions to first-order, second-order and systems of differential equations using a variety of techniques.
- Develop approximate solutions to first-order ordinary differential equations numerically, and evaluate the accuracy of these approximations.

Course Requirements

- *Homework.* Homework will be due weekly. Worth 15% of your grade, it is also your best preparation for the exams. Your homework should be legible, clean, stapled, and free of "fringes"; it should also contain your name and the assignment number or due date. I will not grade homework that does not follow these guidelines. No late homework will be accepted.
- *Tests.* There will be three tests, each worth 20% of your grade. I do not give make-up tests.
- *Final Exam.* There will be a comprehensive final exam, worth 25% of your grade.

Grades

Your grade will be decided according to the usual scale: 90–100 is an A; 80–89 is a B; 70–79 is a C; 60–69 is a D; and 0–59 is an F.

Policies

- *Attendance.* You must attend each class session. If you must be absent, please let me know *in advance.*
- *Student Conduct.* Be on time, and be polite. Turn off cell phones, pagers, and other beeping devices. If you are disruptive you will be asked to leave. Take a few minutes to read the section titled "Five Principles of Student Academic Integrity" on pages 50–51 in the Laney College 2019–2020 Catalog.
- *Adding & Dropping.* It is **your responsibility** to add or drop the class. Don't assume that if you don't show up for some time I will automatically drop you. If you stop attending but don't officially drop the class you will receive an F.
- *Cheating.* Are considered to be cheating: submitting work that is not your own; communicating with others (for any reason) during an exam; looking at someone else's paper during an exam; consulting disallowed materials (notes, books, cheat sheets, etc.) during an exam; helping someone do any of these things. If you are caught cheating, you will receive 0 points for that assignment; more than one instance of cheating will earn you an appointment with the dean.

Calculators

A graphing calculator is not required for this class, but it would be very helpful.

Resources

I encourage you to form study groups. Fellow classmates can help. You can also come see me during office hours; I'll be glad to help. Please note that the Math Lab (G-201) has new hours: Monday–Thursday 9–7 and Friday 9–1. It is staffed with tutors chosen by the math department. Take full advantage of it. (It's a good place to do your homework and prepare for quizzes and exams.)

Important Dates

August 19:	First day of instruction
August 25:	Last day to add without a permission number or add card
September 2:	Labor Day (no classes)
	Last day to add, or drop without a W
September 23:	**Exam #1**
October 18:	Last day to file for AA/AS
October 21:	**Exam #2**
October 22:	Professional Day (no classes)
November 11:	Veterans' Day (no classes)
November 15:	Last day to drop with a W
November 28–29:	Thanksgiving (no classes)
December 2:	**Exam #3**
December 11:	**Final Exam** (10 a.m.–12 p.m.)

Detailed Schedule (Tentative)

Date	Lecture	HW Due	Exams
8/19	Intro; sec. 1.2		
8/21	Sections 1.3–4		
8/25	*Last day to add without a permission number or add card*		
8/26	Sections 2.1–2	HW #1 (1.1–4)	
8/28	Sections 2.2–3		
9/2	*Labor Day (no classes); last day to drop without a W*		
9/4	Section 2.4		
9/9	Sections 3.1–2	HW #2 (2.1–4)	
9/11	Section 3.4		
9/16	Section 3.5	HW #3 (3.1–2, 3.4)	
9/20	Sections 4.1–2		
9/23		HW #4 (4.1–2)	Exam #1 (up to section 4.2)
9/25	Section 4.3		
9/30	Sections 4.4–5	HW #5 (4.3)	
10/2	Section 4.6		
10/7	Sections 4.9–10	HW #6 (4.4–6)	
10/9	Sections 6.1–2		
10/14	Section 6.3	HW #7 (6.1–2)	
10/16	Sections 7.2–3		
10/18	*Last day to file for AA/AS*		
10/21		HW #8 (6.3, 7.2)	Exam #2 (up to section 6.3)
10/22	*Professional Development Day (no classes)*		
10/23	Sections 7.3–4		
10/28	Section 7.5	HW #9 (7.3–4)	
10/30	Section 7.6		
11/4	Section 7.7	HW #10 (7.5–6)	
11/6	*No class)*		
11/11	*Veterans' Day (no classes)*		
11/13	Section 7.8		
11/15	*Last day to drop with a W*		
11/18	Chapter 8	HW #11 (7.7–8)	
11/20	Chapter 9		
11/25	Chapter 9	HW #12 (Chapter 9)	
11/27	Chapter 9		
11/28–29	*Thanksgiving holiday (no classes)*		
12/2		HW #13 (Chapter 9)	Exam #3 (up to chapter 9)
12/4	Review		
12/11			Final Exam (10 a.m.–12 p.m.)