Basic Course Information

Semester:	**Spring 2022**	Instructor Name:	**Jill Nelipovich**
Course Title & #:	**Math 194**	Email:	**Jill.nelipovich@imperial.edu**
CRN #:	**20411**	Webpage (optional):	**Canvas**
Classroom:	**2727**	Office #:	**2768**
Class Dates:	**I/14/22 – 6/10/22**	**Student Hours: (Text/Email/Zoom) =(T/E/Z)**	1. Monday: 9:00 – 9:30 T/E/Z 2. Tuesday: 7:30 – 8:00 am (2723) 1:30 – 2:30 (2768) 3. Wednesday: (T/E/Z) 8:00 – 9:00 a.m. 8:00 – 9:00 p.m. 4. Thursday: 7:30 – 8:00 am (2723)
Class Days:	**T**	Office Phone #:	**760-355-6297 (cell in canvas)**
Class Times:	2:40 – 5:50	Emergency Contact:	**760-355-6201**
Units:	3	Class Format:	In person/Hyflex

Welcome Students! The Spring semester will be fun – we actually get to meet IN PERSON! YAY! The benefit to in person learning is HUGE! I want to see you succeed in this class and your next class and at the university!

Your first assignment – eat healthy, take your vitamins and exercise frequently! Keep your immune system healthy and strong.
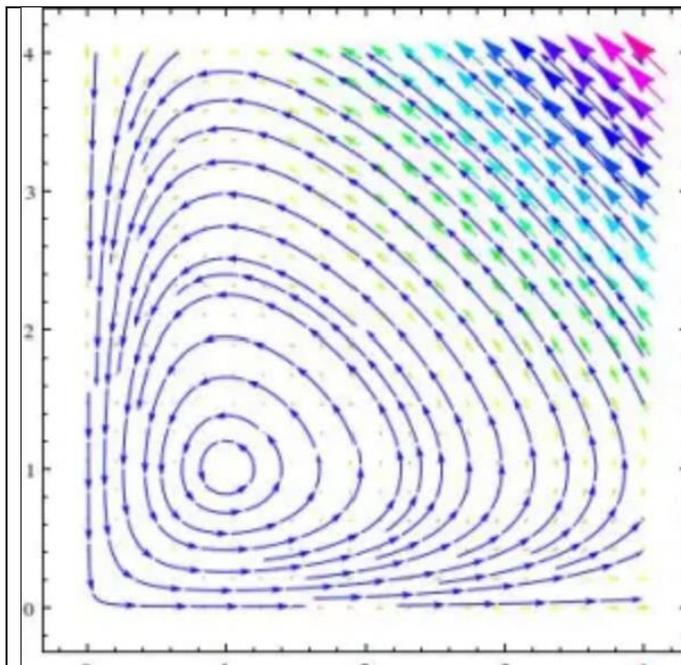
Remember all that trigonometry you learned so well? Well, we get to remember much of that trig!

My job: To be available for you and to help you both learn and succeed in a remote environment.

What does success mean?
• Doing well in this course AND

• Succeeding in the next course at the University…

• "Should I cheat since it is easy to cheat" Nope! Do you want to be fired from your job tomorrow for refusing to learn how to think today? Of course not! Learning is a wonderful opportunity! And, think how far ahead of the next person you will be IF you take the time to learn responsibly!

Course Description

Welcome to the ***wonderful world of differential equations***! Inevitably, you have learned Trigonometry, Pre-Calculus, and Calculus I and Calculus II online. If you need to re-learn some of the mathie stuff you learned before, now is the time to do it! Make sure you allot extra time to ensure you learn the material well and you succeed at the university 😊

The course is an introduction to ordinary differential equations including both quantitative and qualitative methods as well as applications from a variety of disciplines. Introduces the theoretical aspects of differential equations, including first, second, and higher order differential equations and their applications, establishing when solution(s) exist, and techniques for obtaining solutions, including, series solutions, and singular points, Laplace transforms and linear systems. (C-ID MATH 240) (CSU/UC)

Course Prerequisite(s) and/or Corequisite(s)

MATH 194 with a grade of "C" or better.

Student Learning Outcomes

Upon course completion, the successful student will have acquired new skills, knowledge, and or attitudes as demonstrated by being able to:

1. Demonstrate the ability to solve a first order differential equation. ILO2, ILO4)

2. Demonstrate the ability to use a differential equation to model a real world phenomena. (ILO2, ILO5)

3. Demonstrate the ability to find a series solution to a differential equation. (ILO2, ILO4)

Textbooks & Other Resources or Links

Nagle, R., Saff, E. and Snider, A. 2017. Fundamentals of Differential Equations 9th. Addison Wesley ISBN: 978-0321977069

Course Objectives

Upon satisfactory completion of the course, students will be able to:

1. Create and analyze mathematical models using ordinary differential equations.

2. Identify the type of a given differential equation and select and apply the appropriate analytical technique for finding the solution of first order and selected higher order ordinary differential equations.

3. Apply the existence and uniqueness theorems for ordinary differential equations.

4. Find power series solutions to ordinary differential equations.

5. Determine the Laplace Transform and inverse Laplace Transform of functions.

6. Solve Linear Systems of ordinary differential equations..

Course Requirements and Instructional Methods

Projects: There will be projects assigned throughout the semester. The projects are designed to help you think more deeply about solving math problems. You may work as a group or individually.

Quizzes: Quizzes will be given either weekly or bi-weekly basis. This will often be done in class or on Canvas – and you may work with your peers.

Exams: There are two "mini" exams and one midterm in the semester where you are given the opportunity to share your knowledge and what you have learned.

The exams must be done in person either during class time or at a place on campus where we give tests. I will offer two or three exam times on a given day. If you are out of town, there are testing centers near where you live where you can take your test. If this is absolutely not possible, your computer must have a webcam turned on and I will use an online test proctoring program.

Final Exam: The final exam is cumulative. More information on the final exam will follow towards the end of the semester.

Course Grading Based on Course Objectives

Projects ……………………….……..…………15%	**To be assured the grade you want to earn:**
Homework……………..…….….……………….5%	A: $90\% \leq x$
Quizzes………………….……………………..5%	B: $80\% \leq x < 90\%$
Mini-Exams……………………………....……30%	C: $70\% \leq x < 80\%$
Midterm…………………………………….…..20%	D: $60\% \leq x < 70\%$
Final…………………………………………25%	F: $60\% > x$

Course Policies

1. Have a lot of fun! Learning is no fun if you stress about learning! Always have a positive attitude. Stop, think, and relax! Allow your mind to be creative, give yourself permission to fail and embrace your success!

I've missed more than 9000 shots in my career. I've lost almost 300 games. 26 times, I've been trusted to take the game winning shot and missed. I've failed over and over and over again in my life. And that is why I succeed.
Michael Jordan
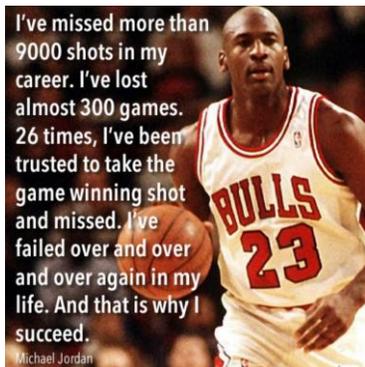
2. Come to class AND participate in class! It doesn't do you, your peers or myself any good if you are texting throughout class and your mind is concentrated on your weekend rather than "the now".
3. Do a little bit of work each and every day. 1% improvement each day equates to a lot of time spent learning (learning is different than studying) – it is productive studying!

Other Course Information

Last Day to add; 2/26/22

Last Day to Drop with a W: 5/14/22

IVC Student Resources

IVC wants you to be successful in all aspects of your education. For help, resources, services, and an explanation of policies, visit http://www.imperial.edu/studentresources or click the heart icon in Canvas.

Anticipated Class Schedule/Calendar

Date or Week	Activity, Assignment, and/or Topic
Week 1 Feb 14 – Feb 18	Syllabus, Chapter 1.1, 1.2, 2.2, 2.3
Week 2 Feb 21 – Feb 25	Chapter 1.1, 1.2, 1.3, 2.2, 2.3
Week 3 Feb 28 – Mar 4	Chapter 2.4, 2.5, 2.6
Week 4 Mar 7 – Mar 11	Chapter 3.1 – 3.5 Mini-Test 1: Solve Differential Equations (1 hour, 15 minutes)
Week 5 Mar 14 – Mar 18	Chapter 3.1 – 3.5; Work on Project
Week 6 Mar 21 – Mar 25	Chapter 4.2 – 4.4 Chapter 4.5, 4.6
Week 7 Mar 28 – Apr 1	Chapter 4.5, 4.6 Work on Project
Week 8 Apr 4 – Apr 8	Chapter 5.2 – 5.4
Week 9 Apr 11 – Apr 15	Midterm
Apr 18 – Apr 22	Spring Break
Week 10 Apr 25 – Apr 29	Chapter 6.1 – 6.3
Week 11 May 2 – May 6	Chapter 7.2 – 7.4
Week 12 May 9 – May 13	Chapter 7.5, 7.6 Work on project
Week 13 May 16 – May 20	Chapter 8.1 – 8.3
Week 14 May 23 – May 27	Chapter 8.4 – 8.6
Week 15 May 30 – Jun 3	Mini-Exam (1 hour, 15 minutes) Work on Project
Week 16 Jun 6 – Jun 10	Final Exam

Subject to change without prior notice