

MATH 290
CALCULUS AND ANALYTIC GEOMETRY
Fall 2020

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Course website: <http://faculty.mtsac.edu/fran>

Materials Required

Text: A First Course in Differential Equations with Modeling Application, 11th Edition by Zill

Calculator: TI graphing calculators are highly recommended.

Course Structure:

- *This course is conducted entirely online, which means you do not have to be on campus to complete any portion of the class.*
- *You are expected to attend ALL classes thru Zoom meeting at class scheduled times*
- *You should download the outline of lecture notes each time we meet.*
- *Additional course material will be provided on the course website <http://faculty.mtsac.edu/fran>*
- *Also, you will participate in the course using Mt. SAC learning system called Canvas for completing assignments, taking quizzes and exams.*

Computer requirements:

- *You will need to have an up-to-date browser, operating system and some additional software on your computer to take this class.*
- *Need to download the Canvas app and Zoom app onto your computer or cell phone.*
- *Know how to download and scan your works and then upload pdf files thru your Canvas account. (For uploading pdf files, you can use Notes app on your cellphone, or download CamScanner app)*
- *You must have a camera for taking exams and quizzes.*

Course Participation Policy:

Participation is essential to your success in this class. In distance course you are required to participate just as if you were in face – to – face course. This means that in order to get full credit for participation you have to complete your discussion assignments, group works, lesson assignments, quizzes and exams on timely basis. Consistent failure to participate in class will result in being dropped from the course. All exams and quizzes will be conducted on zoom meeting and will be monitored by camera.

Student learning Outcome: SLO are under the department website:

http://www.mtsac.edu/math/slo_math.html

Course Assignments:

Important Dates: The due dates for your assignments will be stated clearly on your Canvas account.

Late Work: Late work will not be accepted. Assignments will not be available after the deadline. If you have an extenuating circumstance, please contact me by private message before the assignment is due to make alternate arrangements.

Drop:

All distance education courses currently follow the Mt. SAC policy for Attendance, Class Drops and Auditing courses. In order to avoid getting an F or the course, it is your responsibility to officially withdraw from the class prior to the deadline.

Students who do not participate in class, that is, who consistently do not complete assignments, quizzes, exams will be dropped from the class for non – participating.

Topics to be covered:

1. *First Order Differential equations: direction fields for autonomous and non-autonomous DEs, Separable, linear, exact DEs and solutions by substitutions, numerical method.*
2. *Modeling with First Order DEs: Linear and non – linear models.*
3. *Higher Order Differential Equations: Linear Equations, reduction of order, homogeneous linear equations with constant coefficients, method of undetermined coefficients: superposition approach, the method of undetermined coefficients with annihilators, variation of parameters, Cauchy – Euler Equations.*
4. *Modeling with Higher Order Differential Equations: spring – mass systems: free, un-damped / damped motion, driven motion, series circuit analogue.*
5. *Series Solution of Linear Equations: Solutions about ordinary points.*
6. *The Laplace Transform: definition, inverse transform, transform of derivatives, translation on the s – Axis, translation on the t – Axis.*
7. *System of Linear First – Order Differential Equations: Linear systems, homogeneous linear systems: distinct real eigenvalues, repeated eigenvalues, complex eigenvalues.*
8. *Numerical Solution of Ordinary Differential Equations: Euler methods and error analysis, Runge-Kutta methods.*

Homework

The completion of daily homework is critical to your success in this course. Homework will be assigned every lecture, and they are NOT going to be collected, but there will be similar problems from the homework assignment on quizzes and exams. It is very important both for your understanding of the material and for preparing for exams that you work all the assigned problems as soon as the material covered in class.

Quizzes:

There will be 8 quizzes. All quizzes are consisting of problems similar to the homework and examples in lectures. There will be no makeup quizzes and the lowest quiz will be dropped.

Exams:

There will be three exams and there are no make-up exams. If you must miss an exam, please contact me as far in advance as possible to discuss alternate arrangements. Any special arrangements for exams or submitting assignments will be made entirely at the instructor's discretion. The exams will test your understanding of the concepts covered in the course. Most of the questions on these exams will require showing a significant amount of work to justify your answer. A correct answer with no work shown will be given a zero. The exams will also require you to explain and interpret your results.

Graphing calculator is NOT allowed on any exam.

Grading:

Your semester course grade will be determined by your percentage of the total points possible. All your scores and percentage will be shown on your Canvas account.

Percentage	
<i>Exams</i>	<i>45%</i>
<i>Final Exam</i>	<i>30%</i>
<i>Quizzes</i>	<i>15%</i>
<i>Participation</i>	<i>10%</i>

The scale used to convert from total points earned to a letter grade will no more stiff than:

Percentage	Grade
<i>90.0 - 100.0</i>	<i>A</i>
<i>80.0 - 89.9</i>	<i>B</i>
<i>70.0 - 79.9</i>	<i>C</i>
<i>60.0 - 69.9</i>	<i>D</i>
<i>Below 60.0</i>	<i>F</i>

No grade pleading will be entertained. Your grade is exclusively your responsibility. Work hard right from the beginning. Every little bit helps, so don't miss assignment deadlines. Deadline extensions can be given only when an unusual circumstance is discussed well before the deadline (except, of course, for a sudden illness or other documented event).

Accommodations:

Any student who feels he/she may need an accommodation based on the impact of a disability should contact me privately to discuss your specific needs so that we can strategize together on ways to help you succeed in this class. . Please contact the DSPS & S at (909) – 274 – 4290 in Student Service Center, Building 9B to coordinate the necessary accommodations. Appointments for taking quizzes and exams at DSP&S must be the same day that the quiz or exam is scheduled.

Academic Honesty/Student Conduct:

As a student at Mt.SAC, you are expected to following the College's guidelines for Academic Honesty/Student Conduct can be found here:

<https://catalog.mtsac.edu/registration-policies/college-policies-notice/#academichonestytext>

This means that you should not:

- a. Cheat*
- b. Plagiarize, that is, use another person's words or ideas as your own without proper documentation.*
- c. Collaborate with others unless specially requested in an assignment or discussion.*
- d. Imposter, (let other people take the class or do any work for you)*
- e. Let another student login to your Canvas account.*

Failure to follow this policy will result in disciplinary action which can affect your academic standing in the College.