

**MATH 181**  
**CALCULUS AND ANALYTIC GEOMETRY**  
**Spring 2020**

Professor: Frank V. Tran

Office: 61 - 1632

E-mail: [frank@mtsac.edu](mailto:frank@mtsac.edu)

Phone: (909)594-5611 Ext. 5311

Office hours: MW: 3:15pm – 4:15pm

TTH: 11:00am – 12:00pm

F: 1:00pm – 2:00pm

Website: <http://faculty.mtsac.edu/fran>

Materials Required

Text: *Calculus, Early Transcendentals, 8<sup>th</sup> Edition by James Stewart.*

Calculator: *TI graphing calculators are highly recommended.*

Topics to be covered:

1. Use definite integrals to calculate areas between curves, volumes - including solids of revolution, work, the mean value of functions, arc lengths, areas of surfaces of revolution, moments, centers of mass, and other physics applications.
2. Differentiate hyperbolic functions and integrate functions that result in hyperbolic forms
3. Evaluate indefinite and definite integrals (proper and improper) using integration by parts, trigonometric identities and substitutions, partial fractions, tables, computer algebra systems and numerical techniques.
4. Solve separable and first order linear differential equations with applications.
5. Use numerical methods to solve first order equations.
6. Phase plane analysis of first order equations.
7. Plot curves parametrically and in polar coordinates, using calculus to compute associated areas, arc-lengths and slopes.
8. Plot conic sections in Cartesian and polar coordinates and plot conics with rotated axes.
9. Test for convergence for sequences and series using the integral, comparison, alternating series, ratio, and root tests.
10. Determine representations of functions as power series including Taylor and Maclaurin series.
11. Use power series in applications.

Student learning Outcome: SLO are under the department website:

[http://www.mtsac.edu/math/slo\\_math.html](http://www.mtsac.edu/math/slo_math.html)

### Quizzes:

There will be 8 quizzes, four of which are announced and the other four are surprised quizzes. All quizzes are consisting of problems similar to the homework and examples in lectures. There will be no makeup quizzes. At the end of the semester, the highest 7 quiz grades will be used.

### Exams

There will be three exams. You may be allowed at most one makeup exam, but only for extreme circumstances such as court, hospital... and must provide legitimated documents for being unable to take the exam at the scheduled time. **You must contact me at least two days before the day of the exam to request a makeup exam.** At the end of the semester, if you have missed no more than **three** classes, 85% of your final exam may be used to replace an exam score if this would be advantageous to your course grade. 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.**

### Class Attendance

Attendance at each class meeting is expected and is important for your success in the course. The roll sheet will be passed in the second half of the class (after break time) and it's up to you to sign in. A student may be dropped for excessive (more than four) absences. All cell phones should be set so that they do not beep or ring during class.

### Grading

Your semester course grade will be determined by your percentage of the total points possible. You should keep an accurate record of your grades. I will provide information on your grade standing after each exam.

<b>Percentage</b>	
Exams	55%
Final Exam	30%
Quizzes	13%
Maple Projects	2%

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

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

Electronic Devices:

- Cell phones, laptops, tablets, and other devices capable of electronic communication must be turned off during lectures, quizzes, and exams. These devices must not be visible during lectures, quizzes and exams.
- As a courtesy to fellow students as well as the instructor, you should remain quiet during class time unless you are asking or answering questions. If you are disrupting the class, you may be given a warning or you may be asked to leave the class.

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:

I place a high premium on honesty. Therefore, I consider cheating a serious offense, not only to me, and to other students, but ultimately to the cheater. If a student cheats on an exam, either by copying another student's work or by using a cheating device (cellphone, watch, notes on papers, clothing, desk, est...) and I catch him or her, I will address it by either giving them an F for the exam, an F for the entire course, and report the incident to school.