



MATH 31

PRECALCULUS I: THEORY OF FUNCTIONS

Spring 2026

About the class

Math-D031-30 CRN: 49168

ZTC

Instructor: Neelam R. Shukla

Class Meeting: MW 4:00 pm – 6:15 pm in Room number E33. Make sure that you should reach the class 5 minutes before the class starts, and do not hesitate to ask questions. Take the **course intro quiz** as soon as possible during the first week.

Email: shuklaneelam@fhda.edu (Always start your e-mail subject line with “Math 31”) and contact Via inbox of the Canvas.

Class Hours/Room Number: MW 4:00 pm – 6:15 pm/ E33

Office Hours: Friday 5:00 pm- 6:00 pm via Canvas

Textbook: A free textbook <https://openstax.org/details/books/prec calculus-2e>.

Homework: The homework (MOM) will be via Canvas and take you to MyOpenMath to complete the homework. (Free registration)

Essential Student Materials: Graphing Calculator, Paper to take notes.

Requisites: Prerequisite: MATH 114 or equivalent placement.

Advisory: EWRT 211 and READ 211 (or LART 211), or ESL 272 and 273.

Course Objectives

- Graph functions and relations in rectangular coordinates.
- Synthesize results from the graphs and/or equations of functions and relations.
- Apply transformations to the graphs of functions and relations.
- Recognize the relationship between functions and their inverses graphically and algebraically.
- Solve and apply equations including linear, absolute value, radical, and solve linear and absolute value equations.
- Solve and apply equations including rational, polynomial, exponential, and logarithmic, and solve nonlinear inequalities.
- Solve systems of equations and inequalities.
- Apply functions to model real world applications.
- Develop and use sequences and series.

Course Content

- Chapter 1: Functions and Their Graphs
 - 1.1: Function and Function Notation
 - 1.2: Domain and Range
 - 1.3: Rates of Change and Behavior of Graphs
 - 1.4: Composition of Functions

- 1.5: Transformations of Functions
- 1.6: Absolute Value Functions
- 1.7: Inverse Functions
- Chapter 3: Polynomial and Rational Functions
- 3.1: Complex Numbers
- 3.2: Quadratic Functions
- 3.3: Power Functions and Polynomial Functions
- 3.4 Graphs of Polynomial Functions
- 3.5: Dividing Polynomials (Synthetic Division)
- 3.6: Zeros of Polynomial Functions
- 3.7: Rational Functions
- Chapter 4: Exponential and Logarithmic Functions
- 4.1: Exponential Functions
- 4.2: Graphs of Exponential Functions
- 4.3: Logarithmic Functions
- 4.4: Graphs of Logarithmic Functions
- 4.5: Properties of Logarithms
- 4.6: Exponential and Logarithmic Equations
- 4.7: Exponential and Logarithmic Models
- Chapter 9: Systems of Equations and Inequalities
- 9.1: Systems of Linear Equations: Two-Variable
- 9.2: Systems of Linear Equations: Three-Variable
- 9.3: Systems of Nonlinear Equations: Two-Variable
- 9.4: Partial Fractions
- Chapter 10: Analytic Geometry
- Introduction to Conics:
- 10.1: The Ellipses
- 10.2: The Hyperbolas
- 10.3: The Parabolas
- 10.4: Rotation of Conics
- Chapter 11: Sequences, Probability and Counting Theory
- 11.1: Sequences and Series
- 11.2: Arithmetic Sequences and Partial Sums
- 11.3: Geometric Sequences and Series

Student Commitment

This is a demanding but rewarding class. This class expects students to attend all classes and have a minimum of 10 hours of study each week outside of class. Math 31 covers a lot of material and moves at a rapid pace. At De Anza College (and all colleges) each at least 2 hours of study outside of class are expected for each hour in class, for a total of 15 hours weekly.

Assessment

Assignment	weightage	Dates
4 Exams (1 least score will be dropped)	35 %	Please check canvas for the dates.
4 Quizzes (1 least score will be dropped)	25 %	Please check canvas for the dates.

Homework	15 %	Please check canvas for the dates.
Discussion	5 %	Please check canvas for the dates.
Final Exam	20 %	Please check canvas for the date.

Tentative Dates for Exams and quizzes:

Exam 1: April 22 - Wednesday	Quiz 1: April 20
Exam 2: May 18 - Monday	Quiz 2: May 11
Exam 3: June 3 - Wednesday	Quiz 3: May 27
	Quiz 4: June 15

Final exam on 24th June will be (4pm-6pm in class)

Important Note:

- Quizzes will be timed in class 60 minutes or (70) minutes open for 24 hours. 10 minutes to upload pictures of the work done for online via Canvas.
- Exams will be timed for (90) minutes during the class.
- One least score of quiz, exam, discussion and 2 least score of homework will be dropped.

Homework: There will be an online homework on MyOpenMath. Homework extension should be automatically used by the student (Set up by the instructor) as -5 late pass in case you are late for completing the assignment.

Exams and Quizzes: Exams in the class. Online quizzes with time limit will be given via canvas. Quizzes will be timed and open for 24 hours. **Final exam on 24th June from 4 pm- 6 pm in the class.**

Free Tutoring: I strongly encourage you to utilize this resource. More information can be found here: <http://www.deanza.edu/studentsuccess/mstrc/>

Supplemental Resources: I encourage you to poke around the library and web to see what other supplemental resources exist. One great resource is the following link: <http://tutorial.math.lamar.edu/Classes/Alg/Alg.aspx>

Academic Integrity

All students are expected to be academically honest throughout the term. Any instances of cheating or plagiarism will result in disciplinary action, which may include recommendation for dismissal. You are encouraged to work together but submitting someone else's work as your own is never acceptable! Also, that activity will be of no help to you later. Cheating will result in getting a '0' on the assignment or assessment, an 'F' in the course, or dismissal from the class.

Also, each incident of cheating will be reported to the Dean of the Physical Science, Mathematics and Engineering Division. Please see the De Anza College's page on [Academic Integrity](#). Also, please watch this [video](#) that's designed to help you understand what academic honesty means:

Help

1. Your classmates are a great resource. Ask for help and provide help to others either within your current groups or using Canvas discussion boards!
2. Visit me during office hour for help with online homework or any other course related questions.
3. Ask questions during the class meetings on Monday, Wednesday.
4. Get help from De Anza's Math [Student Success Center](#). Use NetTutor (available 24/7) for help through Canvas. You can also access SmartThinking through MyPortal.

If you need any technical help with MyPortal, Zoom, [Canvas help](#).

Disability Notice

If you feel that you may need an accommodation based on the impact of a disability, please contact me privately to discuss your specific needs. Also, please contact [Disability Support](#) Programs & Services for information or questions about eligibility, services, and accommodations for physical, psychological or learning disabilities. For more information about De Anza College's policy on academic integrity: <https://www.deanza.edu/studenthandbook/academic-integrity.html>

Policies for This Class:

- Student is responsible for officially dropping the class.
- No retakes or extension for assignments will be allowed unless you are sick (provide evidence) If changes were made will be "exactly same" for everyone in the class.
- One least score of quiz, exam and homework will be dropped.
- If a student is caught cheating, the instructor reserves the right to assign a grade of F for the entire course or to drop the student with a W from the course.
- Late adds and late drops will not be processed.
- Homework extension (Late Pass) should be automatically requested by the student on MOM (Set up by the instructor) with in 168 hours in case you are late for completing the assignment
- In case any confusion or you need help, please talk to me in the office hours. Keep in mind I am always there to explain the concepts of the course material to my students in case you need some extra helps, please do not hesitate. Other than the official office hours, I will always try to add some Zoom meetings to help the students before the exams, so be ready for time-slot suggestions. Participate in the discussions with high importance.
- These policies are part of the syllabus and will be strictly enforced. By enrolling in this course, you as the student agree to accept these policies and follow them and agree that the **instructor reserves the right to drop a student from the course with a W if any of the policies are violated**. Further action may also be taken against a student who violates specific policies, such as the policy on cheating.
- Try to approach Disability Support Programs and Services (DSPS) Test Accommodation Center in time if you are doing so. Always make sure that your time for the exam has been extended before starting the exam in case you see anything looks missed, please email me immediately.
- Please note any behavior that is not appropriate, may be reported to the PSME dean and subsequent action may be taken.

- If student notices that the instructor made an error on the grading, the student is responsible to inform the instructor within a week of the date of the exam/quiz. Otherwise, the student's score on the exam/quiz will be unchangeable.

Grade Breakdown: > 96–100% = A+, >93-96%=A, >90-93 % =A-, >86-90% = B+, >83–86% = B, >80-83%= B-, >76-80% =C+, 70-76%=C, 60- <70% =D, below 60% = F

Tentative Schedule	Sections to be covered	Assignments and due dates
Week 1and 2 (April 6, 8, 13, 15)	Sections 1.1-1.3 Sections 1.4-1.6 Review	Please check canvas for the HW due dates. Quiz1(1.1-1.5)- April 20
Week 3 and 4 (April 20, 22, 27, 29)	Chapter-Sections 1.7-3.1,3.2 Sections 3.3-3.5	Exam 1(Chapter 1)-April 22-Wed Quiz2 (Chapter 3.1-3.5)- May 11
Week 5 and 6 (May 4, 6, 11, 13)	Sections 3.6,3.7 Sections 4.1 - 4.7	Exam 2(Chapter 3)-May 18-Mon
Week 7 and 8 (May 18, 20, 25(no class), 27)	Sections 9.1 – 9.4	Quiz3(Chapter 4)- May 27
Week 9 and 10 (June 1, 3, 8, 10)	Sections 10.1 – 10.4 Sections 11.1	Exam 3(Chapter 4 and 9)-June3-Wed
Week 11 and 12(Final Exam Week) (June 15, 17, 24)	Section 11.2,11.3 Review	Quiz 4(Chapter10,11.1) June 15 Mandatory Final Exam 24 th June (4pm-6pm)

Calendar: <https://www.deanza.edu/calendar/>

Important Dates

- April 6 Spring classes begin
- April 19 Last day to [add 12-week classes](#)
- May 23-25 Memorial Day Weekend - no classes, offices closed
- May 29 Last day to [drop classes](#) without a W
- May 29. Last day to [drop classes](#) with a W
- June 19. Juneteenth Holiday - no classes, offices closed
- June 22-26 [Final exams](#)

Student Learning Outcome(s):

- Investigate, evaluate, and differentiate between algebraic and transcendental functions in their graphic, formulaic, and tabular representations.
- Synthesize, model, and communicate real-life applications and phenomena using algebraic and transcendental functions.

Office Hours:

F	6:00 PM - 7:00 PM	Zoom,Canvas
F	5:00 PM - 6:00 PM	Zoom,Canvas