MATH 31   PRECALCULUS I: THEORY OF FUNCTIONS   Fall 2025

About the class

Math-D031-35Z   CRN: 27582   ZTC   **Instructor: Neelam R. Shukla**

Class Meeting: MW 6:30 pm – 8:45 pm online (synchronous) via Zoom in Canvas shell. Make sure that you should join the class 5 minutes before the class starts, and do not hesitate to ask questions. Take the Syllabus 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: MW 6:30 pm – 8:45 pm

Office Hours: Friday 6:50 pm- 7:40 pm via Canvas

Textbook: A free textbook https://openstax.org/details/books/precalculus-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, computer to take exams.

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)	40 %	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	15 %	Please check canvas for the date.

Tentative Dates for Exams and quizzes:

Exam 1: Oct 8 - Wednesday	Quiz 1: Oct 6
Exam 2: Nov 3 - Monday	Quiz 2: Oct 20
Exam 3: Nov 24 -Monday	Quiz 3: Nov 13
Exam 4: Dec 3 - Wednesday	Quiz 4: Nov 29

Final exam on 10th Dec will be (6:30 pm -8:15 pm online)

Important Note:

- Quizzes will be timed (60+10) minutes open for 24 hours. 10 minutes to upload pictures of the work done.
- Exams will be timed for (90 +10) minutes during the class time from 6:30 pm-8:45 pm. 10 minutes to upload pictures of the work done.
- 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 -3 late pass in case you are late for completing the assignment.

Exams and Quizzes: Online exams and quizzes with time limit will be given via canvas. Quizzes will be timed and open for 24 hours. Exams will be during the class time. Final exam on 10th Dec will be (6:30 pm-8:15 pm online).

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:

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 <mark>on Monday, Wednesday.</mark>
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: > 94–100% = A, >90-94 % =A-, >86-90% = B+, >84–86% = B, >80-84%= B-, 70–75% = C, >75-80% =C+, 60- <70% =D, below 60% = F

Tentative Schedule:MW	Sections to be covered	Assignments and due dates
Week 1and 2 (Sept 22 - Oct 5)	Sections 1.1-1.3 Sections 1.4-1.7Review	Please check canvas for the dates. Quiz1(1.1-1.7)-Oct 6-
Week 3 and 4 (Oct 6 – Oct 19)	Chapter-Sections1.7-3.1,3.2 Sections 3.3-3.5	Exam 1(Chapter 1)-Oct 8-Wed Quiz2 (Chapter 3.1-3.5)-Oct 20
Week 5 and 6 (Oct 20 - Nov 2)	Sections 3.6,3.7 Sections 4.1 - 4.7	Exam 2(Chapter 3)-Nov 3-Mon
Week 7 and 8 (Nov 3 – Nov 16)	Sections 9.1 – 9.4	Quiz3(Chapter9)-Nov 13 Exam 3(Chapter 3 and 7)-Nov 24-Mon
Week 9 and 10 (Nov 17 – Nov 30)	Sections 10.1 – 10.4 Sections 11.1	Quiz 4(Chapter 10)-Nov 29
Week 11 and 12 (Dec 1 – Dec 12)	Section 11.2,11.3 Review	Exam4(Chapter 10 and 11)-Dec 3-Wed Final Exam 10 Dec (6:15pm-8:15pm online)

Important dates:

September 22

     Fall classes begin

October 5

     Last day to add 12-week classes

October 5

     Last day to drop classes without a W

November 11

     Veterans Day holiday – no classes; offices closed

November 14

     Last day to drop classes with a W

November 27-30

Thanksgiving holiday – no classes; offices closed

December 8-12

[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 - 6:50 PM	Canvas,Zoom
F	6:50 PM - 7:40 PM	Zoom,Canvas
F	6:50 PM - 7:40 PM	Zoom,Canvas
F	6:00 PM - 6:50 PM	Zoom,Canvas
F	6:50 PM - 7:40 PM	Zoom,Canvas
TH	7:00 PM - 7:40 PM	Zoom,Canvas