

MATH 41 (CRN: 36425) with MATH 231 (CRN: 36441) co-requisite
PRECALC I with ALG SUPPORT

MWR, 08:30am-10:45am, S15

2020 January 7 - March 26

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Office Location: TBD

Office Hours: TBD

The contents of this syllabus are subject to change.

Course Description: Polynomial, rational, exponential and logarithmic functions, graphs, solving equations, conic sections. A review of the core prerequisite skills, competencies, and concepts needed in when studying polynomial, rational, exponential and logarithmic functions. Intended for majors in business, science, technology, engineering, and mathematics who are concurrently enrolled in Precalculus I.

Prerequisite: MATH 114 or equivalent (with a grade of C or better); or a satisfactory score on the College Level Math Placement Test within the last calendar year.

Credit Hours: 5

Text: *Precalculus with Limits*, 3rd Edition **Author:** Ron Larson 2014; **ISBN:** 978-1-133-94720-2

Course Objectives:

Throughout this course, students will at least:

1. Examine the definition of a function and investigate the implications and properties of this concept
2. Explore graphs of functions of the form $f(x) = x^p$
3. Create new functions from existing functions
4. Graph and analyze exponential and logarithmic functions and solve related equations
5. Graph and analyze polynomial functions and solve related equations and inequalities
6. Graph and analyze rational functions and solve related equations and inequalities
7. Graph and analyze conic sections in rectangular coordinates
8. Examine the logic of conditional and bi-conditional statements as they appear in mathematical statements
9. Explore topics related to developing effective learning skills

10. Develop effective skills for modeling and solving real world applications
11. Develop skills needed to graph functions and relations in rectangular coordinates
12. Develop skills needed to synthesize results from the graphs and/or equations of functions and relations
13. Develop skills needed to apply transformations to the graphs of functions and relations.
14. Develop skills needed to recognize the relationship between functions and their inverses graphically and algebraically
15. Develop skills needed to solve and apply equations including linear, quadratic, absolute value, radical, and solve linear and absolute value inequalities
16. Develop skills needed to solve and apply equations including rational, polynomial, exponential, and logarithmic, and solve nonlinear inequalities
17. Develop skills needed to solve systems of equations and inequalities.

Grade Distribution:

Attendance	1%
Quizzes	9%
Homework	25%
Midterm Exams	45% (15 % each)
Final Exam	20%

Course Policies:

• **Attendance**

- Class attendance is expected and encouraged, and is mandatory for the first two weeks. Attendance will be recorded based on work either handed in or handed back.
- Students are responsible for all missed work, regardless of the reason for absence. If a student makes up a quiz or a homework assignment, the attendance will be retroactively marked as present for both the days the work was due and when it was handed back.
- Office hours will be problem solving sessions with the potential to go through more examples.

• **Quizzes**

- **Dates of quizzes:** Tue Jan 7, Thu Jan 9, Tue Jan 21, Thu Jan 30, Thu Feb 6, Thu Feb 20, Thu Feb 27, Thu Mar 12, Wed Mar 18. 9 total quizzes.
- Quizzes are based on topics covered during previous lectures. The first quiz will be a review.
- Quizzes are open book and collaborative.

- Each student is permitted one makeup quiz, to be taken before the quiz is handed back to the rest of the class.
- Omit the lowest quiz score in grade calculation.

- **Homework**

- **Due dates of homework assignments:** Tue Jan 14, Tue Jan 28, Tue Feb 11, Tue Feb 18, Tue Mar 3. 5 total assignments.
- Check the course website for each assignment.
- Homework assignments are meant to improve your conceptual understanding and writing skills.
- Students are encouraged to work together during assignments, but are expected to turn in their own work.
- Each student is permitted one late submission, due before the assignment is handed back to the rest of the class.

- **Exams**

- **Dates of Midterm exams:** Thursday January 23 (week 3), Thursday February 13 (week 6), Thursday March 5 (week 9) (all in class).
- **Date of Final exam:** Thursday March 26 from 7:00 AM to 9:00 AM
- Check the course website for recommended study materials.
- Exams are closed book, closed notes. A scientific calculator is allowed.
- If a midterm exam is missed, the next exam(s) absorb the percentage of the missed exam equally.
- The final exam must be taken in order to pass the class.

2020 Winter Deadlines:

Sat, Jan 18: Last day to add

Sun, Jan 19: Last day to drop for a full refund or credit.

Sun, Jan 19: Last day to drop a class with no record of grade.

Fri, Jan 31: Last day to request pass/no pass grade.

Fri, Feb 28: Last day to drop with a W.

Academic Dishonesty:

Academic dishonesty will not be tolerated. This includes, but is not limited to, plagiarism.

See https://deanza.edu/policies/academic_integrity.html for more info.

Tentative Course Outline:

The daily coverage might change as it depends on the progress of the class. Q stands for quiz, W stands for homework, M stands for midterm, I stands for in, B stands for back. For example, Tuesday of week 1 is January 7, we will cover section A.1 of the text, and quiz 1 will be handed in. Thursday of week 2 is January 16, we will cover section A.6 of the text, and homework assignment 1 will be handed back.

Week	Tuesday	Wednesday	Thursday
1	Jan 7 A.1 Q1I	Jan 8 A.2 Q1B	Jan 9 A.3 Q2I
2	Jan 14 A.4 W1I	Jan 15 A.5 Q2B	Jan 16 A.6 W1B
3	Jan 21 1.1 Q3I	Jan 22 1.2 Q3B	Jan 23 M1I
4	Jan 28 1.3 W2I	Jan 29 1.4 M1B	Jan 30 1.5 Q4I
5	Feb 4 1.6 W2B	Feb 5 1.7 Q4B	Feb 6 1.8 Q5I
6	Feb 11 1.9 W3I	Feb 12 1.10 Q5B	Feb 13 M2I
7	Feb 18 2.1 W3B	Feb 19 2.2 M2B	Feb 20 2.3 Q6I
8	Feb 25 2.4 W4I	Feb 26 2.5 Q6B	Feb 27 2.6 Q7I
9	Mar 3 2.7 W4B	Mar 4 3.1 Q7B	Mar 5 M3I
10	Mar 10 3.2 W5I	Mar 11 3.3 M3B	Mar 12 3.4 Q8I
11	Mar 17 3.5 W5B	Mar 18 10.2,10.3 Q9I	Mar 19 10.4 Q8B
Finals			Mar 26 Final Q9B

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.