

Syllabus: MAT 151 College Algebra

Course Information

Course Title: College Algebra Room: Online Zoom
Course Prefix/Number: MAT 151-1
Semester: Summer, 2022
Class Days/Times: 7:00PM-8:30PM Monday and Wednesday
Credit Hours: 4

Instructor Information

Name: Shaodong Lin
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Office location: Online by appointment
Office hours: TR: 3:00PM -5:20PM

Course Description

MAT 151: College Algebra Prerequisite: MAT 142H or MAT 142 (completed prior to Fall 2018) or placement into MAT 151 Credits: 4 cr. hrs. (4 pds: 4 lec. 0 lab) Course Description: Introduction to college-level algebra. Includes equations, functions, systems of equations, exponential and logarithmic functions, graphing of higher order polynomial and rational functions, sequences and series, and calculator use.

Student Learning Outcomes

During this course students will

1. Define a function in terms of ordered pairs, graphically, and algebraically.
2. Determine the domain of a function and determine whether an element is in the range of a function.
3. Use the algebra of functions and composition of functions defined by the modes in objective
4. Use the definition of one-to-one function and compute the inverse of a one-to-one function.
5. Define and calculate, exactly and by approximation, zeros and intercepts of functions.
6. Perform basic operations with complex numbers.
7. Find the zeros of polynomial functions algebraically and by approximation.
8. Given its zeros and their multiplicities, construct a polynomial function and sketch its graph.
9. Graph rational functions.
10. Solve nonlinear inequalities algebraically and graphically.

11. Use the properties of exponential functions.
12. Use the concept of inverse functions to develop and work with logarithmic functions.
13. Solve exponential and logarithmic equations.
14. Solve applications, by algebraic means and by approximation, using polynomial, radical, power, rational, exponential, and logarithmic functions.
15. Solve and classify solutions of 2×2 and higher systems of linear equations by matrix methods.
16. Solve application problems using linear systems.
17. Use the distance formula with simple applications.
18. Find the n th and general terms of sequences, including arithmetic and geometric sequences and sequences recursively defined.
19. Calculate sums of finite arithmetic and geometric series and convergent infinite geometric series.
20. Use graphing calculators (or other technology).

Course Structure

Students will read lessons in the text followed by lectures by instructor on the salient features of the text. Students will work math problems from the text. Tests will be based on material covered in class.

Course Learning Materials and Textbook Information

Two textbooks will be used in this course.

1. College Algebra 2e, the textbook can be downloaded here:
<https://openstax.org/details/books/college-algebra-2e>
2. The study reference can be downloaded from the discussion on Canvas.

Courses Outline and Important Dates

Week 1:

Introduction to Graphing

Functions And Graphs

Linear Functions, Slope and Applications

Equations of Lines and Modeling

Week 2:

Linear Equations, Functions, Zeros, and Applications

Solving Linear Inequalities

Increasing, Decreasing and Piecewise Functions

The Algebra of Functions

Week 3:

The Composition of Functions

Symmetry

Transformations

The Complex Numbers

Week 4:

Quadratic Equations, Functions, Zeros, and Models

Analyzing Graphs of Quadratic Functions

Solving Rational Equations and Radical Equations

Solving Equations and Inequality with Absolute

Week 5:

Polynomial Functions and Models

Graphing Polynomial Functions

Polynomial Division

Theorems about Zeros of Polynomial Functions

Week 6:

Rational Functions

Polynomial Inequalities and Rational Inequalities

Inverse Functions

Exponential Functions and Graphs

Week 7:

Logarithmic Functions and Graphs

Properties of Logarithmic Functions

Solving Exponential Equations and Logarithmic Equations

Application and Models

Week 8:

Systems of Equations in Two Variables

Systems of Equations in Three Variables

Matrices and Systems of Equations

Matrix Operations

Sequences and Series

Arithmetic Sequences and Series

Geometric Sequences and Series

Nonlinear Systems of Equations and Inequalities

Midterm: Jun 30, 2022

Final Exam: Jul 18, 2022

Evaluations and Grading & Assignments:

90 and above is an A

80 - 89 is a B

70 - 79 is a C

60 - 69 is a D

Under 60 is Failing

Your grade will be determined by the following:

Attendance: 10%

Homework: 10%

Midterm 1: 30%

Final Exam: 50%

Zoom Information:

Shaodong Lin is inviting you to a scheduled Zoom meeting.

Topic: MAT 151

Time: This is a recurring meeting Meet anytime

Join Zoom Meeting

<https://us06web.zoom.us/j/84892667861>

Meeting ID: 848 9266 7861

One tap mobile

+16699006833,,84892667861# US (San Jose)

+13462487799,,84892667861# US (Houston)

Dial by your location

+1 669 900 6833 US (San Jose)

+1 346 248 7799 US (Houston)

+1 253 215 8782 US (Tacoma)

+1 312 626 6799 US (Chicago)

+1 929 205 6099 US (New York)

+1 301 715 8592 US (Washington DC)

Meeting ID: 848 9266 7861

Find your local number: <https://us06web.zoom.us/j/kc7H9pqGsn>

Office hours:

Shaodong Lin is inviting you to a scheduled Zoom meeting.

Topic: Office Hours

Time: This is a recurring meeting Meet anytime

Join Zoom Meeting

<https://us06web.zoom.us/j/99327102863?pwd=QU0yYXNhRbFhPQU8wL2lWR3diNFB6Zz09>

Meeting ID: 993 2710 2863

Passcode: TOCC

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Find your local number: <https://us06web.zoom.us/u/kcelzNyCI9>

Himdag Cultural Component

T-So:son—Our Core

- T-Wohocudadag – Our Beliefs: We believe that T-Wohocudadag provides balance, strengthens us and helps us respect ourselves, other people, and cultures.
- T-Apedag – Our Well-Being: We believe that T-Apedag is inclusive of what is healthy and good for us (physically, spiritually, emotionally, and mentally), and for all that is around us.
- T-Pi:k Elida – Our Deepest Respect: We believe that T-Pi:k Elida is a deep sense of respect for the land, your surroundings, the people, things upon the land, and also for your own self and your life.
- I-We:mta – Working Together: We believe that I-We:mta is crucial for the success of the College, and includes sharing, working together, and giving back to the community.

Policies and Expectations

Attendance Policy

You are expected to arrive to class on time and be prepared to participate in each class period. Four unexcused absences may result in withdrawal and a "W" or "Y" will be recorded. You may request to be excused from class for religious observances and practices, for illness, for school or work-related travel or for personal or family emergency. If you will be absent, please notify the instructor as soon as possible (approved by Faculty Senate April 2014).

Incomplete Policy

Incomplete (I) grades are not awarded automatically. The student must request an "I" from the instructor who can choose to award an Incomplete only if all three of the following conditions are met:

1. The student must be in compliance with the attendance policy.
2. The student must have unavoidable circumstance that would prohibit the student from completing the course.
3. The student must have completed over 75% of the course requirements with at least a "C" grade.

Incompletes are not a substitute for incomplete work due to frequent absences or poor academic performance. Incomplete grades that are not made up by the end of the ninth week of the following semester will be automatically changed to an F if the agreed upon work, as stipulated on the written form signed by the instructor and the student when the I grade is awarded, is not completed.

Instructor Withdrawals

Students who have missed four consecutive classes (or the equivalent) not submitted any assignments nor taken any quizzes by the 45th day census report, due on [date of 45th day found in Academic Calendar on TOCC website] are assumed NOT to be participating in the class and may be withdrawn at the faculty member's discretion. [faculty members should be clear in their withdraw policy, if you do not withdraw students please note in appropriate sections].

Student Withdrawals

Students may withdraw from class at any time during the first 2/3 of the semester without instructor permission and without incurring any grade penalty. Please be sure to withdraw yourself by [withdrawal deadline date found in Academic Calendar on TOCC website] if you do not expect to complete the class, otherwise you may receive an "F" grade.

Special Withdrawals (Y) Grade

The "Y" grade is an administrative withdrawal given at the instructor's option when no other grade is deemed appropriate. Your instructor must file a form stating the specific rationale for awarding this grade. "Y" grades are discouraged since they often affect students negatively. Your instructor will not award a "Y" grade without a strong reason.

Equal Access Statement/Disability Accommodations

Tohono O’odham Community College seeks to provide reasonable accommodations for qualified individuals with disabilities. The College will comply with all applicable regulations, and guidelines with respect to providing reasonable accommodations as required to ensure an equal educational opportunity. This process includes self-identifying as a student with a disability, providing supporting documentation of their disability, and being approved for services through the Disability Resources Office (DRO). It is the student's responsibility to make known to their instructor(s) the student’s specific needs within the context of each class in order to receive appropriate accommodations. We will work together in order to develop an accommodation plan specifically designed to meet the individual student's requirements.

For more information or to request academic accommodations, please contact: Anthony Osborn, TOCC Disabilities Resource Coordinator, aosborn@tocc.edu, or 520-383-0033 for additional information and assistance.

Title IX

Tohono O'odham Community College encourages each student to have the knowledge and skills to be an active bystander who intervenes when anyone is observed or being harassed or endangered by sexual violence. Sexual discrimination and sexual violence can undermine students’ academic success and quality of life on campus and beyond. We encourage students who have experienced or witnessed any form of sexual misconduct to talk about their experience and seek the support they need.

Confidential support and academic advocacy can be found with: Student Services Title IX Coordinator/Counselor, Alberta Espinoza, M.Ed. located in I-We:mta Ki: Room 18. Phone 520-383-0033 email: aespinoza@tocc.edu

Conduct: Bias, Bullying, Discrimination and Harassment

Tohono O’odham Community College faculty and staff are dedicated to creating a safe and supportive campus environment as a core value. Harassment based on age, class, color, culture, disability and ability, ethnicity, gender, gender identity and expression, immigration status, marital status, political ideology, race, religion/spirituality, sex, sexual orientation, and tribal sovereign status will not be tolerated.

DISCLAIMER: This syllabus is designed to evolve and change throughout the semester based on class progress and interests. You will be notified of any changes as they occur.

Online Class:

In the first class, instructions will be provided about using Zoom and Canvas. Students are encouraged to review “Student Learning Online” information available at tocc.edu in the top right corner of the home page.

Course Policies:

- 1) Students are expected to attend each class., arriving on time, except in the case of an excused emergency.
- 2) Students are expected to contact instructor prior to absences, coming late to class or leaving early.
- 3) Unexcused late arrivals or early departures will count against attendance record.
- 4) Class participation and preparation are essential to student success. Students must read textual material, prepare for projects, complete required research as stated on the course schedule.
- 5) Students are expected to come to class prepared for class and having done any preliminary work required as per the course schedule.
- 6) Students are expected to stay in class and work diligently throughout the whole time. Sleeping, frequent/continued exiting from the class during the class period will constitute one (1) absence.
- 7) No cell phone use is allowed during class. Use of cell phones during class, unless permitted by instructor, is a violation of the T-So:son.
- 8) Late work is marked down 10 points for each day of tardiness.
- 9) Failure to submit a project results in a grade of zero (0). An F is a better grade!
- 10) No work accepted after the last class
- 11) No late homework accepted unless offering doctor notes
- 12) No makeup exam accepted unless offering doctor notes

Classroom Behavior

Visitors may be only allowed at class sessions or on field trips with instructor approval, visitor's safety and behavior are the responsibility of the student.

Possession of drugs, alcohol or firearms on college property is illegal.

Food and beverages are allowed in classrooms at discretion of the instructor.

Cellphones should be turned off during class, unless the instructor is allowing students to use their tools (calculator, internet access).

Students creating disturbances that interfere with the conduct of the class or the learning of others will be asked to leave.

Student behavior is also detailed in student handbook under Student Code of Conduct Violations

Make-up policy:

Laboratories cannot be made up except in the case of college closure. At the instructor's discretion, extra credit opportunities and optional activities may be provided.

Academic Integrity:

Violations of scholastic ethics are considered serious offenses by Tohono O'odham Community College, the Student Services Department, and by your instructor. Students may consult the TOCC Student Handbook sections on student code of conduct, on scholastic ethics and on the grade appeal procedure. Copies are available at Tohono O'odham Community College.

All work done for this class must be your own, or the original work of your group. While you may discuss assignments with other class members, the final written project must clearly be original. You may use work from books and other materials if it is properly cited. Copying from a book without proper reference or from a person under any circumstances will result in an "F" for the assignment, and at the instructor's discretion, possibly an "F" for the course. If you are uncertain about proper citations ask your instructor or the librarian.

Course Feedback:

All assignments will be graded and returned to the students promptly, typically within a week after the assignment is closed for handing in. E-mail and phone messages will be returned within two days. A student or the instructor may request a student conference at any time during the semester. Quarterly grade reports will be provided to each student, either in person, by email or via the electronic system of Canvas.