Syllabus MAT 151 College Algebra

Course Information

Course Prefix/Number: **MAT 151 Section 4**
Semester: **Fall 2019**
Course Title: **College Algebra**
Credit Hours: **4**

Class Days/Times: **TR 5:30P – 7:30P**
Place: **Phoenix Campus**

Instructor Information

Name: **Shreya Kelly**
E-mail: **skelly@tocc.edu**

Office location: **classroom (TBD)**
Office hours: **immediately after the class**

Course Description

Introduction to college-level algebra. Includes functions, polynomial and rational functions, exponential and logarithmic functions, linear 2 x 2 and higher systems, graphing, and sequences and series.

Course Objectives

Upon successful completion of the course, the student will be able to:

- Define a function in terms of ordered pairs, graphically, and algebraically.
- Determine the domain of a function, and determine whether an element is in the range of a function.
- Use the algebra of functions and composition of functions defined by the modes in objective 1.
- Use the definition of one-to-one function and compute the inverse of a one-to-one function.
- Define and calculate, exactly and by approximation, zeros and intercepts of functions.
- Perform basic operations with complex numbers.
- Find the zeros of polynomial functions algebraically and by approximation.
- Given its zeros and their multiplicities, construct a polynomial function and sketch its graph.
- Graph rational functions.
- Solve nonlinear inequalities algebraically and graphically.
- Use the properties of exponential functions.
- Use the concept of inverse functions to develop and work with logarithmic functions.
- Solve exponential and logarithmic equations.
- Solve applications, by algebraic means and by approximation, using polynomial, radical, power, rational, exponential, and logarithmic functions.
- Solve and classify solutions of 2 x 2 and higher systems of linear equations by matrix methods.
- Solve application problems using linear systems.
- Use the distance formula with simple applications.
- Find the n^{th} and general terms of sequences, including arithmetic and geometric sequences and sequences recursively defined.

- Calculate sums of finite arithmetic and geometric series and convergent infinite geometric series.
- Use graphing calculators (or other technology).

Student Learning Outcomes

After completion of the course students will be able to:
- Graph, analyze and perform function operations.
- Create mathematical models using a variety of functions.
- Employ technology to set up and solve real world situations.

Course Structure

This course will be operating on a combination of **class activity and lectures** that will enhance the student's knowledge of mathematical concepts. Some of this work will need to be done outside of class utilizing TOCC Canvas (https://tocc.instructure.com/login/canvas).

Text and Materials

- **[Required]** OpenStax College Algebra. Free PDF is available for download in the following link: https://openstax.org/details/books/college-algebra.

Course Evaluation

Grades will be determined using the following scale:

Category	Weight
Quizzes	30%
Mid-term Exam	25%
Comprehensive Final Exam	35%
Homework	15%
Total	**100%**

Himdag Cultural Component

My interpretation of what Nahban said in the *Desert Smells Like Rain* is this: while the *himdag* discourages direct, exact answers, in the mathematical world, one is expected to be able to come up with a precise answer for the situation. That being said, there are a few common issues shared:
- *Baban* (coyotes) are not going to affect your homework or my tests – they didn't write either.
- While one must go through a maze to see *i'itoi*, there was no mention as to how many mazes there were to get to him. Likewise, you will discover in this course that there are many different ways to perform the algebra necessary to see the final answer.
- *I-we:tma*: for your success and the college's and the community's, you should not go work on mathematics alone – it can be a group activity (except on the tests, of course).
- *T-pik elida*: we respect each other and ourselves. We respect and take pride in our own work. We respect each other's abilities, quirks and privacy.

Policies and Expectations

Student Conduct

- Please be respectful of myself and other students in the class. Disruptive behavior may result in you being asked to leave the class. This includes but is not limited to talking, eating, rustling papers, clicking on electronics, texting or playing with your phone, late arrival and early departures (late arrival to class disrupts the learning activities and is unprofessional and disrespectful towards fellow classmates), any abusive or indecent language. Collegial behavior is required at all times. Turn off cell phones, PDAs, iPods, laptops, and other electronic devices not related to the course before entering the class.
- Cheating in my class is unacceptable. If you are caught cheating, you will be given a zero on that exam or quiz and may result in my filing an Academic Honesty Incident Report which could result in suspension or expulsion from the college.

E-mail Requirement

- All students must activate and regularly check their Tohono O'odham Community College e-mail account. It is mandatory that students use the TOCC e-mail account for all communications with the instructor.
- The instructor will not reply to any non-TOCC e-mail address the student uses to contact him.

Homework

- Each week, there will be a collection of homework/practice problems. Please submit the following Monday.

Quizzes

- Each Monday, you will complete a timed quiz consisting of questions over the previous week's material in the classroom. My hope is that students will work through the previous week's homework problems. There will be **no make-up quizzes**. However, at the end of the semester, I will drop your lowest quiz grade.

Exams

- There will be one timed **mid-term exam** and one timed **comprehensive final exam**.
- There will be **no make-up exams**.

Participation

- You are expected to work some problems on the board. I will be guiding you if you get stuck. I will ask you to work on the board after the related material is taught. You are encouraged to ask questions in the classroom.

Important Dates

- Drop/Full Refund deadline is **Tuesday, Sep 3st 2019**.
- Withdrawal deadline is **Monday Nov 4th 2019**.

Final Grades

They will be sent to the address on record. Per FERPA and the Himdag, I will not give grades over the phone and am strongly discouraged from emailing same. (Again, see *t-pik elida* above.)

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.