



MAT 089: Elementary Algebra

Class Days/Times/Room: 089-2 Monday and Wednesday / Lu:nas c Mia' Iklos 089-3 Tuesday and Thursday / Ma:ltis c Hui'wis Time: 5:15 - 7:45 PM Location: TOCC Center Room 303 (Waik-siant waik)	Spring (<i>hu:kalig</i>) 2020
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<p>Sketags! Welcome to the exciting world of Mathematics! You will become fluent in the language of mathematics, learn to think quantitatively and abstractly, as well as engage in collaborative learning structures to promote and strengthen problem-solving skills. Within the class, setting goals, making responsible choices, developing respect for yourself as well as others and establishing work ethics will be incorporated in our learning.</p> <p>Course Description: This is the first course in algebra sequence. The course content is divided into 4 modules. Topics studied include:</p> <ol style="list-style-type: none">1. Transitions from arithmetic to algebra which includes signed numbers, order of operations, polynomials, fractions, linear equations, area and perimeter, decimals, percents, and ratio and proportion.2. Introduction to Algebra and application, which includes the real number system, algebraic expressions, linear equations and inequalities, integer exponents, simple rational expressions and square roots.3. Introduction to measurement and mathematical modelling of relationships among variables.

<p>Course Objectives:</p> <p>Upon successful completion of the course, the students will be able to:</p> <ol style="list-style-type: none">1. Define absolute value and graph real numbers on the number line.2. Perform operations on signed numbers3. Apply the laws of mathematics to arithmetic and algebraic expressions.4. Apply the order of operations to arithmetic and algebraic expressions.5. Simplify and evaluate arithmetic and algebraic expressions.6. Translate percentage problems into algebraic equations and solve.7. Solve ratio and proportion problems.8. Plot points and graph linear equations9. Demonstrate measurement sense including units, precision, accuracy and error.10. Add, subtract, multiply and divide numbers in the real number system.11. Graph and solve linear equations and inequalities12. Add, subtract, multiply, divide and factor polynomials.13. Add, subtract, multiply and divide rational expressions.14. Evaluate statistics presented in a news story
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Student Learning Outcomes (SLOs) :

Students will demonstrate the ability to accurately apply correct mathematical methods and techniques in various applications such as theoretical mathematics and applied sciences.

After completion of the course students will be able to

- Simplify and perform operations with signed numbers, arithmetic and algebraic expressions, understand various uses of constants and variables to represent quantities or attributes, demonstrate operation sense and communicate verbally, graphically and symbolically the effects of common operations on numbers.
- Solve linear equations with rational coefficients. Construct and use equations to represent relationships involving one or more unknowns or variable quantities to solve problems.
- Plot points and graph linear equations on the Cartesian coordinate system. Describe the behavior of linear models using words, algebraic symbols, graphs and tables. Use appropriate terms and units to describe rate of change ex. describe the rate of change using appropriate units: slope for linear relationships or average rate of change over an interval for nonlinear relationships.
- Compare relationships represented in different ways.
- Be able to use and interpret percentages in a variety of contexts including, but not limited to: Parts to whole comparisons, decimal representations of percentages, quantifying risks and other probabilities, rates, change, and margins of error.
- Create (mathematical) models of situations, including representations such as tables, graphs, equations and words, using multiple variables to represent quantities and attributes. Furthermore, students will describe why these tools are a useful strategy for understanding the world, along with their limitations.
- Critically evaluate statistics being presented in a media report including: identifying the reference value for a reported percentage, evaluating the sampling strategy, determining sources of bias, describing the difference between correlation and causation, identifying confounding variables.

Course Structure:

This course will be operating on a combination of **group activities, discussions** and rarely traditional **lecture** that will enhance the student's knowledge of mathematical concepts. Some of this work will need to be done outside of class. That being said, you will have ample time to do work in class. (I hope not to be too repetitive, but there still will be homework!)

You will find the format of this class to be a bit different than most. If however you are currently taking, or have had, IRW 070 or 090, then this will be familiar. I will try to make sure that half the class be dedicated to homework.

Texts and Materials:

- Quantway Pathway (with 1 year digital access) printed text Core and College combo, ISBN 9781975024130 *you will use the same book (which, for this semester, you should not be paying anything) for both MAT 089 and MAT 142H. I am willing to mail you a pdf of same on request.*
- A calculator is required, as is a TOCC e-mail and computer access login. An iPad is **not** required.

Evaluation 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

There are **32 assignments** worth 10 points a piece, corresponding to each section. = $32 \times 10 = 320$
Per Department of Education rules and TOCC policy, I must take attendance. Doing the homework in class - or making it up outside of it when absent, counts for the 10 points.

There will be **three projects** corresponding to the ends of each chapter worth 50 points a piece = $3 \times 50 = 150$

There is a final exam that I did not write - it is **closed-book, closed-note, open calculator**. There are two grading schema - I will grade for partial work, while Carnegie / WestEd is much stricter. This will be worth **50** points

An A requires $520 \times .9 = \underline{\hspace{2cm}}$ points. A B will require $520 \times .8 = \underline{\hspace{2cm}}$ points.

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. (Certainly beats the classic "My dog ate my homework!")
- While one must go through a maze to see *i'toi*, there was no mention as to how many mazes there were to get to him. Likewise, you will discover that there are many different ways to perform the math necessary to see the final answer.
- *I-we:tma*: for your success, the college's and the community's, DO NOT work alone – it is a group activity (except on the tests, of course).
- *T-Wohocudadag c t-apedag c t-pik elida*: We believe in ourselves and others. We learn for our well-being. We respect each other, ourselves and our community. We respect and take pride in our own work. We respect each other's abilities, quirks and privacy.

Prerequisites and destinations - please read carefully:

To be in this class, you must have

- passed math 082 **or** 086 here, at Pima Community College, or at San Carlos Apache College with a C or better (equivalent courses within Arizona will be considered), or
- tested into this class with a score in either COMPASS (at least 32 in Pre Algebra) or successor Accuplacer (at least 25 in Elementary Algebra), or
- obtained permission of the instructor, usually after review of previous coursework

*It is strongly recommended that you have either placed above by placement test, and/or passed IRW 070 Integrated Reading and Writing -- below that level, and you will find that what I expect for reading and writing in this course to be **extremely** challenging. I have documentary proof of students below that reading level failing or dropping this course.*

Upon successful completion of this course, you will be taking Math 142H Collegiate Mathematics.

Policies and Expectations

Attendance Policy: You are expected to arrive to class on time and be prepared to participate in each class period. **Four (4) (gi'ik)** 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 the Faculty Senate April 2014).

Incomplete Policy: An 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 circumstances 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 (4) (gi'ik)** consecutive classes (or the equivalent) not submitted any assignments nor taken any quizzes by the **45th (gi'ikko-gigi'ik)** day census report, due on **March 30, 2020** are assumed **NOT** to be participating in the class and may be withdrawn at the faculty member's discretion.

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 **February 27, 2020** 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.

Consolidated Course Outline and Homework Assignments

material on tests and dates for topics subject to change - sections in italics are if time permits.

	Date / taş	coverage	done?	points	
1	1/13; 1/14	1.1 (skip 1.2)		10	
2	1/15; 1/16	1.3		10	
3	1/20; 1/21	1.4		10	1/20 Martin Luther King Day (no school)
4	1/22; 1/23	1.5; 1.6		10	
5	1/27; 1/28	1.7		10	
6	1/29; 1/30	1.8		10	
7	2/3; 2/4	1.9		10	
8	2/10; 2/11	2.1, 2.2		10, 10	
				50	Chapter 1 project due _____
9	2/12; 2/13	2.3		10	
10	2/17; 2/18	2.4		10	2/17 President’s Day (no school)
11	2/19; 2/20	2.5		10	
12	2/23; 2/24	2.6		10	
13	2/26; 2/27	2.7		10	2/27 Last day to add / drop w/o signature
				50	Chapter 2 project due _____
14	2/26; 2/27	2.8		10	
15	3/2; 3/3	3.1		10	
16	3/4; 3/5	3.2		10	
17	3/9; 3/10	3.3		10	
18	3/11; 3/12	3.4		10	
19	3/23; 3/24	3.5		10	
20	3/25; 3/26	3.6		10	
21	3/30; 3/31	3.7		10	3/30 Final withdrawal deadline at 5 pm
				50	Chapter 3 project due _____
22	4/1; 4/2	3.8		10	
23	4/6; 4/7	4.1		10	
24	4/8; 4/9	4.2		10	

25	4/13; 4/14	4.3		10	
26	4/15; 4/16	4.4		10	
27	4/20; 4/21	4.5		10	
28	4/22; 4/23	4.6		10	
29	4/27; 4/28	4.7		10	
30	4/29; 4/30	4.8		10	
31	5/4; 5/5	4.9		10	
	5/6/5/7			50	comprehensive in-class final

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References:

- Richard Lee. (2019) *Course syllabus*.
- Furlonge, Isaac. (2016.) *Course syllabus*.
- Guarin, Jorge. (2011.) *Course syllabus*.
- Hronopoulos, Sophia. (2012.) *Course syllabus*.
- Nabhan, Gary Paul. (1982.) *The Desert Smells Like Rain: A naturalist in Papago Indian Country*. San Francisco: North Point Press.
- Newberry, Teresa. (2012.) *Course syllabus*.
- Sun-bat, Catherine. (2014.) *Course syllabus*
- Tohono O’odham Community College core values website http://www.tocc.edu/core_values.htm (2015.)
- Tohono O’odham Community College Faculty Handbook (2015.)