

## Math 103 Section 024C – Intermediate Algebra (3 credits)

Spring 2020

TTh 1:20 PM-2:50 PM

C-246

**Instructor:** Yanting Liang

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**Office Hours:** M 10:15 AM-12:15 PM, TuTh 8:30 AM-9:30 AM or by appointment

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### Course Description:

Functions, tables and graphs, problem solving, inequalities in one variable, exponents and radicals, quadratic functions and exponential functions. Prerequisites: Math 101 with a grade of C or better or placement.

### Required Materials:

Beginning and Intermediate Algebra, 5th edition by Miller, O'Neill, and Hyde. This book is also online and is included with the ALEKS. Once you have acquired the ALEKS license, go to [www.aleks.com](http://www.aleks.com) and when prompted, enter the following code: 3ARYJ-PHGL4.

### Topics:

Chapter 7 – Rational Expressions and Equations

Chapter 8 – Relations and Functions

Chapter 10 – Radicals and Complex Numbers

Chapter 11 – Quadratic Equations, Functions, and Inequalities

Chapter 12 – Exponential and Logarithmic Functions and Applications

**Learning Outcomes:** This course provides an introduction to algebra, focused on critical thinking, problem solving and the communication of ideas to help students prepare for future coursework and future problem-solving opportunities.

Upon successful completion of the course, students are expected to have the ability to complete the following:

- Students will work with linear functions, quadratic functions and exponential functions in the forms of equations, tables and graphs proficiently.
- Students will solve quadratic equations utilizing both completing the square and the quadratic formula.
- Students will determine and interpret the meaning of the x-intercepts and y-intercepts for various functions.
- Students will calculate a discriminant and will identify how features of a calculated discriminant value relate to the features of the equation and graph of a quadratic function.
- Students will factor expressions and solve equations that are quadratic in form.
- Students will determine the solution of 2x2 systems of linear equations utilizing processes by graphing, the substitution method and the addition or elimination method.

- Students will utilize the properties of inequalities to determine the solution of compound inequalities and write the solutions in different representations including the real number line, interval notation and set builder notation.
- Students will graph exponential growth and decay functions.
- Students will utilize the properties of exponents to simplify radical expressions, to solve radical equations and to solve exponential equations that do not require the use of logarithms where a common integer base is determined.
- Students will solve application exercises through a logical and sequential process that emphasizes preparing a plan of action, creating an equation, solving the equation, answering the original question including the correct units, checking that the answer is a plausible real number solution and rejecting non-plausible real number solutions such as negative distances, negative radicands in even index roots and/or extraneous solutions.

### **Calculator:**

The TI-30Xa is required. No cell phone or other electronic device will be allowed.

### **Homework:**

Homework will be assigned every Tuesday and Thursday on ALEKS. Tuesday homework will be due at the beginning of Thursday class, and Thursday homework will be due at the beginning of Tuesday class. Late homework will NOT be accepted. Your three lowest homework scores will be dropped.

### **Quizzes and Exams:**

Under normal circumstances, there will be a weekly 15-minute quiz on every Thursday. For group quizzes, students in the same group will receive the same grades. There will be NO make-up for missed quizzes. However, the worst two will be dropped.

There will be three exams. The following is a tentative schedule for exams (subject to change):

Exam 1: 5<sup>th</sup> week

Exam 2: 10<sup>th</sup> week

Cumulative Final: 14<sup>th</sup> week

Exams will be closed notes/closed book. If you CANNOT come to the exam, please let me know BEFORE the exam, or within 24 hours after the exam in case of emergency. A makeup exam will be given only for those students who missed exams with an acceptable reason and my permission.

### **Participation:**

You are also graded on participation. If you cannot make it to class or you have to leave early, you should let me know before class and get the notes from your classmates after class. What is participation?

-Getting to class on time

-Taking notes

-Paying attention in class

-Asking or answering questions

Activities such as disrupting class, sleeping in class, using laptop, etc. will result in a zero for the day.

Attendance will be taken daily. Each student is given 1 grace absence. After that, each absence will result in the loss of 20% of the participation grade. Therefore, if you miss six or more classes, you will receive 0% on participation. Students will be given credit for attendance when they have excused absences. An excused absence **MUST** be asked for, in writing (e-mail is acceptable), **BEFORE** the class or within 24 hours after the class in case of emergency, and supporting material must be submitted. Two unexcused tardies equals one unexcused absence.

**Grading:**

A: 93% to 100%	B+: 86% to 90%	C+: 74% to 78%	D+: 64% to 67%
A-: 90% to 93%	B: 82% to 86%	C: 70% to 74%	D: 60% to 64%
	B-: 78% to 82%	C-: 67% to 70%	F: <60%

ALEKS	20%
Quizzes	10%
Participation	5%
Midterm Exams	40%
Final Exam	25%

**Special Accommodations:**

If you need special accommodations, please contact me and provide me with a proper documentation early in the semester.