CUYAMACA COMMUNITY COLLEGE

***(Spring Semester, 2018)***

# Math 110

Intermediate Algebra

#### Section 1541

Mon: 12:30am – 2:45, Room H-118

Wed: 12:30am – 2:45, Room H-118

***Section 5497***

Tuesday: 8:00am – 10:15, Room H-134

Thursday: 8:00am – 10:15, Room H-134

### ***INSTRUCTOR***: Eric Preibisius

***CLASSROOM***: See above

***OFFICE & PHONE***: H-132, Phone: 619-660-4248

e-mail: eric.preibisius@gcccd.edu

***OFFICE HOURS***: Monday: 11:00am – Noon

Tuesday: 10:30am – 11:30

Wednesday: 11:00am – Noon

Thursday: 10:30am – 11:30

**CUYAMACA COLLEGE**

COURSE OUTLINE OF RECORD

MATHEMATICS 110 – INTERMEDIATE ALGEBRA FOR BUSINESS, MATH, SCIENCE AND ENGINEERING MAJORS

5 hours lecture, 5 units

Catalog Description

The second of a two-course sequence in algebra. This course completes some topics from the first course, such as factoring and operations on rational and radical expressions, and includes the addition of new topics such as absolute value equations and inequalities, exponential and logarithmic expressions and equations, conic sections, and an introduction to matrices and sequences and series. The concept of functions is developed including composition and inverses. Quadratic functions are covered in depth. Computational techniques developed in beginning algebra are prerequisite skills for this course. This course is appropriate for students with knowledge of beginning algebra or who have had at least two years of high school algebra but have not used it for several years. Graphing calculators are required for this course. *Maximum of 5 units can be earned for taking MATH 103 and 110.*

Prerequisite

Grade of “Pass” in MATH 090 or equivalent

***COURSE CONTENT***:

1. Graphing of linear, quadratic and rational functions and their applications
2. Writing equations from the graphs of linear and quadratic functions
3. Using graphic, numeric and analytic methods to solve linear and quadratic equations and inequalities
4. Using linear regression and linear interpolation and extrapolation to model, interpret and solve application problems
5. Fundamental operations with exponents and radicals and solving equations with same
6. Applications involving rational expressions and solving equations with same
7. Linear and non-linear systems of equations and inequalities
8. Elementary matrices and determinants
9. Graphing elementary conic sections
10. Exponential and logarithmic functions, their graphs, their inverse relationship and applications
11. Sequences and series
12. Historical contributions of number and mathematical concepts from diverse cultures

***COURSE PREREQUISITE SKILLS***:

Without the following skills, competencies, and/or knowledge, students entering this course will be highly unlikely to succeed:

1. Operations, simplification and manipulation
2. Real numbers
3. Polynomials
4. Variables with integer exponents
5. Square roots of variables
6. Factoring (greatest common factor, difference of squares, trinomials)
7. Solving mathematical statements
8. Linear equations in one or two variables
9. Linear inequalities
10. System of linear equations in two variables
11. Quadratic equations (real solutions)
12. Graphing
13. Points
14. Lines (slope-intercept form)
15. Linear inequalities
16. Modeling and applications
17. Interpreting numeric, analytic and graphical data
18. Associated with linear relationships

**Student Learning Outcomes**

Upon successful completion of this course, students will be able to:

1. Simplify or reorganize expressions
2. Solve equations and inequalities
3. Solve systems of two or three equations
4. Recognize and graph elementary conics
5. Use the graphing calculator to solve equations graphically
6. Solve application problems
7. Simplify or reorganize functions by operations
8. Graph a function and identify its defining elements
9. Find the domain and range of a given function

**Method of Evaluation (Measuring Student Learning Outcomes with Representative Assignments)**

A grading system will be established by the instructor and implemented uniformly. Grades will be based on demonstrated proficiency in subject matter determined by multiple measurements for evaluation, one of which must be essay exams, skills demonstration or, where appropriate, the symbol system.

1. Independent exploration activities which measure the student’s ability to analyze the connections between the numeric, algebraic, and verbal representations of various types of algebraic expressions, equations, inequalities, functions, and systems of equations and/or inequalities when applied to real-world problems and data analysis.
2. Quizzes and exams (including a comprehensive in-class final exam) which measure the student’s ability to work independently using graphic, numeric, and algebraic techniques to simply algebraic expressions; formulate, analyze and solve algebraic equations, inequalities, and systems of equations and inequalities; identify and analyze algebraic, exponential, and logarithmic functions; use all of the above in solving real-world application problems; and recognize and graph elementary conics.
3. Homework assignments in which students apply graphic, numeric and algebraic principles discussed in class to a series of practice problems to help them formulate questions and receive feedback from the instructor, tutors, or classmates.

***COURSE MATERIALS***:

1. Text: Mathematics in Action: Algebraic, Graphical, and Trigonometric Problem Solving, 5th Edition (This text is ***REQUIRED***! You must get the “paper” copy from the bookstore as it is a “Workbook” that we will work through together as a class.
2. You do not need the “My Math Lab Code” for my course!
3. Calculator: A TI-84 Plus graphing calculator is **REQUIRED** for this course. ***Our Department highly recommends and supports the use of TI Graphing Calculators in our Mathematics Classes!***
4. You will need to purchase a 3-ring binder for your textbook. You will also need to bring your book to class everyday as we will be working through it together as a class.

***COURSE REQUIREMENTS***:

1. ***HOMEWORK***: Homework problems will be assigned from each section of the text covered in class. Students will be asked to turn in selected Homework problems from time to time for credit. (10 points each)
2. ***SEATING CHART***: A seating chart may be created by the instructor soon after the first couple of classes. Students will be expected to sit in those seats on each day of class. ***The seating chart may be changed on the day of each exam!***
3. ***QUIZZES***: Quizzes will be given from time to time. Sometimes they will be announced, and sometimes they will be a “surprise”. Some “Cluster Quizzes” will be given throughout the semester and will be worth 50 points each. All other quizzes will be worth only 10 points each. Cluster Quizzes cannot be dropped.
4. ***ASSIGNMENTS OTHER THAN HOMEWORK***: These assignments may include writing, research, and group work with more complex mathematical investigations. Points will be deducted if an assignment is handed in after the due date.
5. ***TESTS***: There will be 3 in-class tests given throughout the semester, each worth 100 points. A comprehensive final exam will be given at the end of the course and count 200 points. The Final Exam is mandatory!
6. ***GRADING SCALE***:

Grades will be determined by computing each student’s “P” score as follows.

P ≥ 90% A

80% ≤ P ≤ 89% B

70% ≤ P ≤ 79% C

60% ≤ P ≤ 69% D

P ≤ 59% F

**Note: You must earn at least a “D” on the Final Exam to earn a passing grade in this course! (You must also have a passing percentage as described above)**

***ACADEMIC ACCOMMODATIONS***:

Academic accommodations are available for students with disabilities. If you suspect that you have a disability, or require services for any other type of disability, pleases contact Disabled Student Programs & Services in the One Stop Center (A-113) or call at 619-660-4239. Please identify yourself to your instructor and/or to Disabled Students Programs and Services (DSP&S) staff so that the appropriate accommodations can be ensured.

***CLASS POLICIES***:

1. You are expected to attend each class, arriving on time and remaining for the entire class. If this is not possible it is your responsibility to discuss with the instructor the reasons for arriving late or leaving early. (***Please let me know at the beginning of class if you will need to leave early***).
2. You may be dropped from the class for missing twice the number of hours the class meets per week. (In this class it is 10 hours).
3. You are responsible for getting class notes from other classmates and getting any schedule changes or other class announcements from classmates or the instructor on days missed from the class.
4. You are expected to be courteous to each other and to the instructor. You will be asked to leave the class for display of behavior the instructor deems as disruptive to the class environment. You are encouraged to establish study partners with whom you may study and prepare for exams.
5. **CHEATING**: Using notes when not allowed, counterfeiting Bonus Bucks, copying another student’s work, getting test information from another student in another class is CHEATING and will not be tolerated! If you are caught cheating, you will receive an F (Zero Points) on that test. Second offence will result in being dropped from the class!

***SUCCESS TIPS FOR LEARNING MATHEMATICS***:

1. Read ahead in the text the sections(s) to be covered in class on a particular day.
2. Take notes on the lecture and attempt to understand “why” as well as “how” problems are solved. Ask questions during the lecture on points you do not understand.
3. Complete homework assignments before the next class. If time does not allow you to complete the assignment, at least try some of the problems and ask questions about the ones you don’t understand.
4. Begin reviewing and studying for a test at least one week before the scheduled test date.
5. Do not attempt to learn math by yourself. Team up with another classmate and work together. Share ideas and help each other understand the material. Ask your instructor questions during office hours.
6. To support your efforts to succeed in this class, it is highly recommended that you utilize the free Math Tutoring services available in the STEM Tutoring Center. Call 660-4396 for more information. The tutoring hours are tentatively as follows:

Monday: 9:00am – 6:00pm

Tuesday: 9:00am – 6:00pm

Wednesday: 9:00am – 6:00pm

Thursday: 9:00am – 6:00pm

Fridays: 9:00am – 2:00pm

1. Note also that there is “one-on-one” tutoring available in the ARC Center. You can schedule up to two “one-half” hour tutoring session per week. You must sign up for these sessions. The ARC Center is open the following hours:

Monday: 9:00am – 6:00pm

Tuesday: 9:00am – 6:00pm

Wednesday: 9:00am – 6:00pm

Thursday: 9:00am – 6:00pm

Fridays: 9:00am – Noon

IMPORTANT DATES TO REMEMBER:

* + Jan 29, Mon. First day of regular semester classes
  + Feb 9, Fri. Last day to add or drop semester-length classes without a “W”

On your transcripts

* + Feb 16, Fri. Holiday: (Lincoln’s Birthday) No Classes!
  + Feb 19, Mon. Holiday: (Washington’s Birthday) No Classes!
  + March 2 Last day to apply for P/NP (CR/NCR)
  + March 26 – March 31 Spring Recess: No Classes!
  + April 27, Fri. Last day to drop semester-length classes (With a “W”)
  + May 28, Mon. Holiday: (Memorial Day) No Classes
  + May 29 – June 4 **Final Exam Schedule: No regular classes**
  + May 31, Thurs. **Final Exam for Math 110 Class, Section 5497 (7:30am – 9:30)**
  + June 4, Mon. **Final Exam for Math 110 Class, Section 1541 (11:45 – 1:45)**

***COURSE OUTLINE (SUBJECT TO CHANGE*)**

### Jan 29 – Feb 2 Introduction to the Course

### Begin Chapter 1

Feb. 5 - 9 Continue with Chapter 1

Feb. 12 - 16 Continue with Chapter 1

**Cluster Quiz #1**

**Note: Fri., Feb 16 is a holiday (Campus Closed)**

Feb. 19 - 23 Finish Chapter 1

**Note: Mon., Feb 19 is a holiday (Campus Closed)**

Feb. 26 – March 2 **Exam #1**

Begin Chapter 2

### March 5 – 9 Continue Chapter 2

March 12 - 16 Finish Chapter 2

March 19 - 23 **Cluster Quiz #2**

Begin Chapter 4

**March 26 – March 31 Spring Recess (NO CLASSES!)**

April 2 – 6 Continue with Chapter 4

April 9 - 13 **Exam #2**

Finish Chapter 4

April 16 - 20 Begin Chapter 5

April 23 - 27 Continue with Chapter 5

April 30 – May 4 **Cluster Quiz #3**

Finish Chapter 5

May 7 - 11 Begin Chapter 3

May 14 - 18 **Exam #3**

Continue with Chapter 3

May 21 - 25 Finish Chapter 3

Review for Final Exam

May 29 – June 4 **Final Exam Schedule – No regular class meetings**

**May 31, Thurs. Final Exam for TTh Class, Section 5497**

**7:30am – 9:30 (Note time change!!!)**

**June 4, Mon. Final Exam for MW Class, Section 1541**

**11:45am – 1:45**

**Note: You must earn at least a “D” on the Final Exam in order to receive a grade of “C” or better in the class! (And have a final percentage that is at least 70%)**