Math 54 - Section 5405

Beginning Algebra

MTWR 11-12:20 MSTC 151

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Math 12
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Course Description: Math 54, Beginning Algebra, is an introductory course that develops the real number system and introduces the use of variable expressions and equations in problem solving. The properties of the real numbers, square roots, arithmetic of variable expressions (including polynomials and algebraic fractions), solving linear equations and inequalities, factoring, and an introduction to the Cartesian coordinate system and the equations and graphs of linear equations in two variables are studied. Also, an introduction to Pythagorean Theorem and basic geometric formulas, and some dimensional analysis with modeling applications are involved.

Credit Hours: 4

Text(s): *Elementary Algebra*, 9$^{\text{th}}$ Edition
Author: Charles McKeague; **ISBN-13:** 978-0-8400-6421-7

Course Objectives:
Successful students will have studied and demonstrated their understanding of the following:

1. Integers, Rationals, and Irrationals and their position on the Real Number Line.
2. The commutative, associative, distributive, identity, inverse properties of operations on Reals.
3. The meaning of variables in algebraic expressions and in modeling applications.
4. Parsing algebraic expressions with integer exponents using the order of operations.
5. The use of properties of (in)equality to solve linear equations and inequalities.
6. Creating algebraic models for real world situations (word problems).
7. Polynomial arithmetic, including multiplying and factoring polynomials.
8. Factoring quadratic polynomials, especially quadratics with rational zeros.
9. Solving rational equations that reduce to linear or simple quadratic equations.
10. Roots and radicals including solving simple radical equations.
11. The Cartesian coordinate system and graphing linear solution sets, using slope and point-slope forms.
12. Use the method of completing the square to solve quadratic equations like $x^2 + 2px + q = 0$ where p and q are integers.

Grade Distribution:

Homework	10%
Quizzes	10%
Chapter Tests	50%
Final Exam	20%

Letter Grade Distribution:

≥ 90.00	A	70.00 - 79.99	C
80.00 - 89.99	B	60.00 - 69.99	D
.	.	≤ 59.99	F

Grades in the **C** range represent performance that **meets minimal expectations**; Grades in the **B** range represent performance that is **substantially better** than the minimal expectations; Grades in the **A** range represent work that is **excellent**. Strive to be excellent!

Note: At least a "C" grade is required in this course to progress to Math 40 or 44.

Course Policies:

- **Homework**

  – Homework involves mostly deducing solutions for exercises at the end of each section in the text and writing these in your homework notebook. Homework will be assigned regularly but there is no one on staff available to read your all your work on a detailed level, so you will use the online homework system at https://www.myopenmath.com/. This is a new, free and open homework system for which more detailed information will be provided in class.

    To use the paid homework system with e-book at webassign.com, click the "I have a class key" button and enroll with the institution code dccd.cc.ca and class key 5665 6157.

- **Notebook**

  – Taking notes is a critical component of attending lecture. Studies have shown that the act of taking hand written notes actually improves your ability to recall the information presented. Also, notes provide you with an effective way to review what you are learning. For these reasons, you are strongly urged to take careful notes! I will occasionaly look at your notes and assess them for completeness based on has been covered in lecture. Things I will be looking for are:
    * All steps of all examples
    * Definitions and Theorems
    * Using blank lines to organize your notes

    Feel free to compare your notes with others or–and this can be especially effective for study–rewrite your notes with more explanations for yourself.

- **Quizzes**

  – There will be regular, short, graded quizzes. These are meant to provide a more frequent feedback on your work.

- **Calculators**

  – You will not need a calculator in this course. While you are invited to experiment with calculators to confirm hand calculations, you will not need to use them. Calculators are not allowed during the exams.

- **Attendance and Absences**

  – Attendance is expected and will be noted. If you're not there, you missed it. Excessive absences are cause for dismissal, as per the college catalog.

  – Students are responsible for all missed work, regardless of the reason for absence. It is also the absentee's responsibility to get all missing notes or materials and to learn what was missed.

  – It is the student's responsibility to drop all classes in which he/she is no longer participating or attending.

  – It is the instructor's discretion to drop a student for excessive absences or non-participation any time during the allowed drop/withdrawal period for the course.

  – Student who remain enrolled in a class beyond the published withdrawal deadline, as stated in the class schedule, *must* receive an evaluative letter grade in the class. (A 'W' grade cannot be assigned during the final grading for students till appearing on the roster.)

  – The final grade in this class will be affected by active participation, including attendance, as indicated in the in-class quiz scores.

- **Cell Phones**

  – Turn off your cell phone during class. You may not receive calls or messages in class.

Note: No makeup quizzes will be given. Only legitimate excuses (with a doctor's note, say) will allow a makeup exam.

Academic Honesty Policy

In addition to skills and knowledge, College of the Desert aims to teach students appropriate ethical and professional standards of conduct. The college catalog specifies that students are expected to "be honest and ethical at all times in the pursuit of academic goals. Students who are found to be in violation of the Student Conduct Standards and Procedures will receive a grade of zero on the assignment, quiz, or exam in question and may be referred for disciplinary action in accordance with Student Disciplinary Procedures." Any attempt to deceive a faculty member or to help another student to do so will be considered a violation of this standard.

Week	Tentative Course Schedule:
Week 1, Jan. 26	• §1.1 Variables, Notation, and Symbols & §1.2 Real Numbers • §1.3,4,5 Addition, Subtraction Multiplication and Division of Real Numbers • §1.6 Properties of Real Numbers, 1.7 Subsets of Real Numbers. • §1.8 Addition and Subtraction of Fractions with Variables.
Week 2, Feb, 2	• §2.1 Simplifying Expressions & §2.2,3 Properties of Equality • §2.4 Solving Linear Equations & §2.5 Formulas • §2.6,7 Applications • §2.8,9 Linear adn Compound Inequalities
Week 3, Feb. 9	• Review and Test 1
Week 4, Feb. 17	• §5.1,2 Multiplication and Division with Exponents • §5.3,4 Operations with Monomials and Polynomials • §5.5,6 Multiplication of Polynomials & §5.6 Special Products
Week 5, Feb. 23	• §5.7,8 Dividing a Polynomial by a Polynomial • §6.1,2 The Greatest Common Factor and Factoring by Grouping • §6.3 More Trinomials to Factor & §6.4 The Difference of Squares • §6.5 The Sum and Difference of Two Cubes & §6.6 Factoring Review
Week 6, Mar. 2	• §6.7 Solving Quadratic Equations by Factoring §6.8 Applications • Review and Test 2
Week 7, Mar. 9	• §3.1 Graphing Ordered Pairs& §3.2 Solutions to Linear Equations • §3.3,4 Graphing Linear Equations in Two Variables & Intercepts • §3.5,6 The Slope of a Line & • 3.6 Finding an Equation of a Line • §3.7 Linear Inequalities in Two Variables
Week 8, Mar. 16	• §4.1 Solving Linear Systems by Graphing • §4.2 The Elimination Method • §4.3 The Substitution Method • §4.4 Applications
Week 9, Mar 23	• Review and Test 3
Week 10, Apr. 6	• §7.1 Reducing Rational Expressions to Lowest Terms & §7.2 Multiplication and Division of Rational Expressions • §7.3 Addition and Subtraction of Rational Expressions & §7.4 Equations Involving Rational Expressions • §7.5 Applications of Rational Expressions & §7.6 Complex Fractions • §7.7 Proportions & §7.8 Direct and Inverse Variation
Week 11, Apr. 13	• §8.1 Definitions and Common Roots & §8.2 Properties of Radicals • §8.3 Simplified Form for Radicals & §8.4 Addition and Subtraction of Radical Expressions • §8.5 Multiplication and Division of Radicals • §8.6 Equations Involving Radicals
Week 12, Apr. 20	• Chapters Review and Test 4
Week 13, Apr. 27	• §9.1 More Quadratic Equations • §9.2 Completing the Square
Week 14, May 4	• §9.4 Complex Numbers • §9.5 Complex Solutions to Quadratic Equations • §9.6 Graphing Parabolas
Week 15, May 11	• Test 5 and review for final exam.
Week 16, May 18	• There are no regular classes during the final week. • The final exam is scheduled for Tuesday, May 19, 10-12noon.