

**COURSE SYLLABUS**

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| **COURSE TITLE:** | College Algebra |
| **COURSE NUMBER:** | MATH102 |
| **PREREQUISITE:** | MATH101 |
| **COREQUISITE:** | None |
| **REVISION DATE:** | January 23, 2023 |
| **INSTRUCTOR:** | Marwin Rapkin |
| **INSTRUCTOR’S E-MAIL:** | mrapkin@eastwick.edu |
| **CONTACT HOURS:** | 4.5h lecture/week |
| **QUARTER CREDITS:** | 5 |

**TEXTBOOK:**

Aufmann, Richard N. & Lockwood, Joanne (2014). *Introductory algebra: An Applied Approach.* (9th ed.). Belmont, CA: Brooks/Cole, Cengage Learning.

**COURSE DESCRIPTION:**

This course covers fundamental operations of algebra. Topics include signed numbers, variables, literal equations and formulas, square roots, exponents, polynomials, linear and quadratic equations and rational expressions. Outside of classroom preparation includes completion of end-of-chapter assignments and study guides for exam review.

**LEARNING OBJECTIVES:**

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

1. Define natural-number exponents. Apply the rules of exponents and the rules for order of operations to evaluate expressions. Define rational exponents whose numerators are one and whose numerators are not one.
2. To evaluate a variable expression. To simplify a variable expression using addition, multiplication, and the Distributive Property. To translate a verbal expression into a variable expression.
3. To determine whether a given number is a solution of an equation. To solve an equation in the form x + a = b. To solve an equation in the form ax = b. To solve uniform motion problems. To solve applications using formulas.
4. Define polynomials. Demonstrate addition, subtraction, multiplication, and division of polynomials.
5. Explain factoring out a common monomial. To Factor trinomials. To Solve equations by Factoring.
6. Define rational expressions. To solve equations containing fractions. To solve a proportion.
7. Demonstrate graphing linear equations, vertical and horizontal lines, and find distance between two points. Calculate the slope of a line. Use the slope to solve applications. Write equations of parallel and perpendicular lines. Use point-slope form and slope-intercept form to write an equation of a line. Locate the x- and y- intercepts of a graph.
8. To solve a system of linear equations by substitution method and graphing method.
9. To simplify numerical radical expressions. To simplify variable radical expressions. To multiply and divide radical expressions. To solve an equation containing a radical expression.
10. Calculate quadratic equations using the Quadratic Formula.
11. Develop the analytical skills of the student in order to better comprehend various algebraic theories and applications.

**WEEKLY OUTLINE\***

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| **Date** | **Lecture Topic** | **Resources** |
| Week 1 | Review course syllabus.  In-person lecture: Chapter 1: Prealgebra Review –Exponents and Order of Operations, Factoring and Prime Factorization, Rational Numbers, Addition, Subtraction, Multiplication and Division  At home: Intro to Integers, Addition, Subtraction, Multiplication and Division of Integers, | Chapter 1; pp. 1-62. Prealgebra Review  Sections: 1.4, 1.5, 1.6, 1.7 |
| Week 2 | In-person lecture: Chapter 2: Variable Expressions – Evaluating, Simplifying Variable Expressions, Translating Verbal Expressions into Variable Expressions | Chapter 2; pp. 75-108. Variable Expressions  Sections: 2.1, 2.2, 2.3 |
| Weeks 3 & 4 | **Test Chapters 1 and 2**  In-person lecture: Chapter 3: Solving Equations – Introduction to Equations, Basic Percent and Uniform Motion Equations, Translating Sentences into Equations. | Chapter 3; pp. 109-186. Solving Equations  Sections: 3.1, 3.3, 3.4, 3.7 |
| Week 5 | President’s Day No Classes |  |
| Week 6 | In-person lecture: Chapter 4: Polynomials – Addition and Subtraction of Polynomials, Multiplication of Monomials and Polynomials. | Chapter 4; pp. 187-230. Polynomials  Sections: 4.1, 4.2, 4.3, 4.4 |
| Week 7 | In-person lecture: Chapter 5: Factoring – Common Factors, Factoring Polynomials, | Chapter 5; pp. 231-280. Factoring  Sections: 5.2, 5.3, 5.6 |
| Week 8 | **Test Chapters 3, 4 and 5**  In-person lecture: Chapter 6: Rational Expressions Solving Equations containing Ratios and Proportions | Chapter 6; pp. 281-348. Rational Expressions  Sections: 6.6 |
| Week 9 | In-person lecture: Chapter 7: Linear Equations in Two Variables – Rectangular Coordinate Systems, Linear Equations in Two Variables, Intercepts and Slopes, Equations of Straight Lines | Textbook Chapter 7; pp. 349-402. Linear Equations in Two Variables.  Sections: 7.1, 7.2, 7.3, 7.4 |
| In-person lecture: Chapter 8; Systems of Linear Equations – Solving Systems of Linear Equations using Graphing, and Substitutions Methods. | Chapter 8; pp. 403-444. Systems of Linear Equations.  Sections: 8.1, 8.2 |
| Week 10 | **Test Chapters 6, 7 and 8**  In-person lecture: Chapter 10: Radical Expressions – Introduction to Radical Expressions, Addition and Subtraction of Radical Expressions, Multiplication and Division of Radical Expressions, Solving Equations containing Radical Expressions. | Chapter 10; pp. 477-510. Radical Expressions  Sections: 10.1, 10.2, 10.3, 10.4 |
| Week 11 | In-person lecture: Chapter 11: Quadratic Equations – Solving Equations by Using the Quadratic Equation, Applications of Quadratic Equations. | Chapter 11; pp. 511-551. Quadratic Equations  Sections: 11.3 |
| Week 12 | **Test Chapters 10 and 11** | Final Exam |

\*Note:Subject to change.

**INSTRUCTIONAL METHODS**:

This is a hybrid learning course that combines in-person instruction with online Canvas LMS instruction. Hybrid learning courses provide more flexibility for attending class compared to traditional on-site courses. But they also require just as much dedication and focus on the learning process. The reward for the students comes from taking a more active, participatory role in the learning process. By engaging and collaborating with other students and the instructor on a regular basis in the classroom and through online discussions, the hybrid learning student becomes an active contributor to the learning process.

Instructional methods include lectures, practice problems, practice quizzes, and discussions.

Office hours are by appointment. If a student would like to meet with the instructor outside of class, the student should email the instructor with multiple time slot options and every effort to find a time that is convenient will be made.

Note: All assignments shall be submitted in the Canvas LMS.

**ASSESSMENT:**

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| --- | --- | --- |
| *Activity* | *Percent* | *Learning Objective(s)* |
| Test #1: Chapters 1 and 2; week 3 | 15 | 1, 2, 11 |
| Test #2: Chapters 3, 4 and 5; week 7 | 15 | 3, 4, 5,11 |
| Test #3: Chapters 6, 7 and 8; week 9 | 15 | 6,7, 8, 11 |
| Test #4: Final Exam Chapters 10 and 11;  Week 12 | 20 | 9, 10, 11 |
| Class participation/Attendance | 15 | 11 |
| Homework/Assignments | 20 | 11 |
| Total | 100 |  |

**GRADING SCALE:**

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| --- | --- |
| *Letter Grade* | *Number*  *Grade* |
| A | 90 - 100 |
| B+ | 85 - 89 |
| B | 80 - 84 |
| C+ | 75 - 79 |
| C | 70 - 74 |
| D+ | 65 - 69 |
| D | 60 - 64 |
| F | Below 60 |

**ACADEMIC INTEGRITY:**

All types of dishonesty, including unauthorized assistance in any academic work, cheating on tests, inappropriately or unethically using technological means to gain academic advantage, and plagiarism are considered to be in conflict with the educational objectives of Eastwick College and subject the student to disciplinary action. Plagiarism is the act of taking another person’s words or ideas and presenting them as if they are your own work without acknowledgement. A student who violates Eastwick College’s policy on dishonesty, cheating, and plagiarism is subject to failure (zero) on the assignment for the first offense in the course. Additional offenses subject the student to failure of the course and/or dismissal from the college.

**ATTENDANCE**:

Class attendance is required to gain a full understanding of the subject matter. The student is only allowed to have three absences before there is an effect on their attendance grade. After the third absence, all missed classes will be considered unexcused. If a student misses more than 50 percent of a period, they will be marked absent for that period. Any student that does not return to class after the break will be marked absent.

Students will be required to sign an attendance sheet for each class. A failure to sign the attendance sheet will result in the student being marked absent for the day. Any student who signs in another student will both be marked absent for the day.

**POLICY ON MAKE-UP WORK:**

Any assignment, worksheet, or test that is submitted or taken after the due date, will result in the student only being able to achieve a maximum score of 89. The grade reduction may increase if the student has multiple missed assignments and/or tests. The student has one week from the time an assignment is due to submit it to the instructor. In the case of a missed test, the student will have one week from the scheduled test date to take a makeup test. After the one-week make up period has expired, the assignment and/or test will not be accepted and the student will receive a zero for the work. Students are responsible for all work they have missed. Students are responsible for checking with the instructor or a fellow class member what work has been assigned, or tests scheduled.

No assignment (worksheet) or test will be accepted after the last scheduled class meeting. This includes any assignments and/or tests that are being submitted during any make up period. Any assignment (worksheet) or test not received by the instructor before the end of the last scheduled class meeting will receive a zero.

Any makeup examination must be completed no later than the last Saturday of the module. After that date, the examination score will be entered as a "zero". It is the option of the instructor to determine what examinations can be made up by the student. Please see makeup examination notices posted on the wall of every classroom around the school.

**ADDITIONAL POLICIES:**

If a student is experiencing difficulty with the class, it is the student’s responsibility to speak to the instructor. At the discretion of the Dean of Academics, extra help may be available for the student. Extra help, if allowed, will have to be scheduled in accordance with the instructor’s available schedule. Extra help will require the student to come to the session with specific questions in areas of concern.

All assignments and/or tests are to be done by the individual student alone. A student will be guilty of cheating if he/she gives or receives assistance from another student or person in the

completion of any assignment or test. Any violation of this rule will result in the student receiving a zero for the assignment. If the instructor determines that there have been multiple cooperative efforts between students on any assignment, worksheet, or test, then he/ she reserves the right to cancel out the particular assessment for the entire class. A replacement assessment will be assigned which can consist of an in-class closed book worksheet and/or test.

The instructor has no additional work or assignment to give to the student in order to increase a final grade. The student is responsible for retaining in their possession all returned tests and/or assignments in the event there is a question about the final grade. All tests are to be considered closed book.

Students are encouraged to take notes and to audio tape the class. This course is both a lecture and hands-on style class. For students who have difficulty taking notes in class, this is a method to capture any missed notes from the class lecture. All tests will have questions that come from the class lecture and/or board notes. All recorders must be on the instructor’s desk.

Cell Phone Use: If the student must make or receive a cell phone call or text message, then the student should leave the classroom quietly and use their cell phone. The student should return to the classroom when they are done using their cell phone.

All assignments shall be submitted in the Canvas Course site.

All assignments shall be submitted in Canvas no later than Sunday midnight of that respective

week. The instructor’s email, shall be used for all communication.

Canvas and Cengage Webassign are the official methodologies of at-home instruction and work

assignments. The student is responsible for, and is expected to, register with these programs as a

class member.

**RESOURCES:**

Assigned textbook, outlines, instructor slides, worksheets, and lectures.