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| http://www.curricunet.com/Cabrillo/images/cabrillo_logo.jpg | **MATH 152A Course Outline**  |
| **4 Unit(s)****4 Hour(s) Lecture****4 Hour(s) Laboratory**  |
| **MATH 152A**  | **Intermediate Algebra - First Half**  |
|    | Presents the first half of Intermediate Algebra and is designed for a wide variety of students, including those who have been unsuccessful in MATH 152, are math anxious, or desire a slower paced, year-long version of MATH 152. When followed by MATH 152B, satisfies Cabrillo's math graduation requirement for Associate of Arts and Associate of Science Degree. Covers linear equations, functions and graphs, systems of linear equations and inequalities, compound inequalities, factoring, polynomial equations, rational expressions and rational equations. Offered fall only. May not be taken pass/no pass.  |
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| **Requisites**  | **PREREQUISITE(S):** * MATH 154 or equivalent skills

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| **Recommended Preparation**  | * Eligibility for ENGL 100 and READ 100
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| **Core Cabrillo Competencies**  | Communication - reading, writing, listening, speaking and/or conversingCritical Thinking and Information Competency - analysis, computation, research, problem solvingGlobal Awareness - an appreciation of scientific processes, global systems and civics, and artistic varietyPersonal Responsibility and Professional Development - self-management and self-awareness, social and physical wellness, workplace skills |
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| **Learning Outcomes**  | 1. Evaluate appropriate techniques to apply to various types of equations and inequalities and produce and interpret solution(s).2. Create, analyze, and solve a mathematical model describing a real life application.3. Analyze and interpret mathematical and physical meaning from graphs of various functions. |
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| **Objectives**  |   1. Manipulate linear, polynomial, and rational expressions.  2. Solve linear, polynomial, and rational equations and interpret solution(s).  3. Recognize differences among systems of equations and inequalities and solve using various strategies.  4. Perform arithmetic operations between polynomials.  5. Use factoring as a problem-solving technique.  6. Identify functions and relations and interpret their graphs using an assortment of techniques.  7. Construct graphs from data, equations, or a combination of functions. |
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| **Content**  | 1. Functions using numerical and algebraic values.
2. Domain (inputs) and range (outputs) graphically for basic functions.
3. Functional notation in a variety of application problems.
4. Determining if a relation is a function by looking at its graph, table, or equation.
5. Combining two functions by adding, subtracting, multiplying, and dividing.
6. Equations of linear functions from two ordered pairs, two points, or a linear graph. Functional notation in the answer.
7. Compound inequalities joined by "and" or "or," and of the form c < ax + b < d. Algebraic, graphical, and interval notation for expressing inequalities.
8. Equation of a linear function given the slope and a point on the line.
9. Slope as a rate of change using appropriate units.
10. Graphing linear inequalities in two variables.
11. Equations and inequalities involving absolute value of the form |ax + b|.
12. Equation of a linear function given a point and a line parallel or perpendicular to the linear function.
13. Literal equations.
14. Linear systems of equations: solving them algebraically and graphically.
15. 3x3 systems of equations.
16. 2x2 systems of linear inequalities.
17. Application problem in two variables.
18. Rules of integral exponents.
19. Addition, subtraction, multiplication, and division of polynomial expressions.
20. Factoring of an algebraic expression using a combination of greatest common factor, difference of two squares, sum or difference of two cubes, trinomial factoring, and grouping.
21. Factoring procedures used to solve equations and problems.
22. Scientific notation in application problems.
23. Addition, subtraction, multiplication, and division of rational expressions. Reduce the answers.
24. Complex fractions.
25. Rational equations.
26. Application problems that involve rational expressions.
27. Rational inequalites.
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| **Assignments**  | **Out-of-class Assignments**1. Analyze and study pertinent text material, solved examples and lecture notes.2. Apply the principles and skills covered in class by solving related problems.3. Synthesize course material in preparation for exams.**In-class Assignments**1. Group activities.2. Quizzes and exams.Students are expected to spend 8.00 hours in class and 8.00 hours outside of class.  |
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| **Evaluation**  | **Typical classroom assessment techniques** Exams/TestsQuizzes**Required Assignments** * Home Work
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| **Grading**  | Letter Grade Only  |
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| **Representative Texts**  |  Angel, Allen, R. (2008). *Intermediate Algebra for College Students* (7/e). Upper Saddle River Prentice Hall. ISBN: 0132383578  Blitzer, Robert (2008). *Intermediate Algebra* (5th/e). Upper Saddle River Prentice Hall. ISBN: 0136007627  |
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| **History**  | Approved: 09/02/2009 by Renee Kilmer  |
| CID: 2858 |