



COMMUNITY COLLEGE  
OF VERMONT

# CHOOSING YOUR MATH COURSE

When choosing your first math class, it's important to **consider your current skills, the topics covered, and course expectations. It's also helpful to think about how each course aligns with both your interests and your career and transfer goals.** If you have questions, talk with your advisor.

- **Developmental math course:** Math & Algebra for College offers the chance to develop concepts and skills you may have forgotten or never had the chance to learn. The course focuses less on lecture and more on practicing concepts individually and in groups. Your homework will emphasize developing and practicing new skills.
- **College-level math courses** build on foundational skills taught in our developmental math course. Homework, quizzes, and exams will often include word problems that require multiple steps and incorporate a variety of math skills. You should expect three to four exams per semester, which cover a variety of concepts, and shorter weekly quizzes which focus on one or two concepts. You may be asked to complete a final project and submit a paper using course concepts, research, and writing skills.

Course	Your Skills Readiness	Topics Covered & Course Expectations
<b>Math &amp; Algebra for College</b>	1. Order of operations 2. Whole number addition, subtraction, multiplication, division (without a calculator): a. $\begin{array}{r} 456 \\ + 37 \\ \hline \end{array}$ b. $\begin{array}{r} 897 \\ - 649 \\ \hline \end{array}$ c. $\begin{array}{r} 534 \\ \times 23 \\ \hline \end{array}$ d. $408 \div 34 =$ 3. Addition, subtraction, multiplication, division of signed numbers 4. Percent problems: a. Joe had 20 math problems for homework. He completed 45%. How many problems does he have left to complete? b. Dan could run 4 miles last year. This year he can run 5 miles. By what percent did his miles increase? 5. Operations with fractions: a. $= 2/3 - 4/5 =$ b. What is $3/8$ of 24?	In <b>Math &amp; Algebra for College</b> , you will: <ul style="list-style-type: none"> <li>• strengthen your math literacy, problem solving, computational math, and fundamental algebra skills</li> <li>• understand basic algebraic laws in order to solve problems found in college-level math courses and that occur in various fields of study</li> <li>• learn to use fractions, decimals, percentages, whole numbers, &amp; integers to solve problems</li> <li>• interpret information that is communicated in a graph, chart &amp; table</li> </ul>

Course	Your Skills Readiness	Topics Covered & Course Expectations
<b>Intermediate Algebra</b> or <b>Applied Math Concepts</b>	<ol style="list-style-type: none"> <li>Solve for <math>x</math>: <math>7 - x = 11</math></li> <li>Multiply: <math>(4 + x)(3 - x)</math></li> <li>Evaluate the following when <math>x = -2</math> &amp; <math>y = 3</math>: <math>\frac{-5x - 4y + \sqrt{12y}}{-4 - x}</math></li> <li>Identify &amp; interpret the slope &amp; the y-intercept of the linear equation: <math>3x + 4y = 12</math></li> <li>Solve for <math>x</math>: <math>\frac{1}{2}(x + 9) = \frac{1}{6} + \frac{1}{3}(x - 3)</math></li> <li>There are 21 flowers of three colors in a vase. The number of blue flowers is two less than the number of red flowers &amp; the number of yellow flowers is one less than triple the amount of blue flowers. How many flowers of each color are there? Use an equation to solve.</li> <li>Suppose a car travels a distance of <math>x</math> miles at a velocity of 48 mph. Give an algebraic expression for the time the car travels.</li> <li>A clothing store runs a sale in which each winter jacket is discounted 20%. Write an algebraic expression for the sale price of the jacket.</li> <li>Simplify &amp; express answers without negative exponents:  a. <math>(x^3)^4 \cdot x^5</math>    b. <math>(x^3y^2)^2</math>    c. <math>\left(\frac{x^{-5}}{x^{-2}}\right)^{-3}</math> </li> <li>Multiply. Write answers in simplest form. <math>(2x - 3y + 1)(-5x + 4y)</math></li> <li>Factor the following completely:  a. <math>x^2 - 3x - 10</math>    d. <math>3x^4 - 3x^3 - 60x</math>  b. <math>4x^2 - 12x + 9</math>    e. <math>6x^3 - 9x^2 + 4x - 6</math>  c. <math>25x^6 - 9y^4</math> </li> </ol>	<p>In <b>Intermediate Algebra</b>, you will:</p> <ul style="list-style-type: none"> <li>learn in-depth algebra skills to prepare for College Algebra or Finite Math</li> <li>understand algebraic laws, polynomials, exponents, linearequalities &amp; inequalities, factoring, functions, set notation, &amp; graphing in the Cartesian Coordinate system</li> </ul> <p>In <b>Applied Math Concepts</b>, you will:</p> <ul style="list-style-type: none"> <li>learn &amp; practice mathematical problem solving skills needed for a variety of professional &amp; personal applications</li> <li>become proficient with set theory, personal finance, probability &amp; statistics, geometry, linear systems, &amp; data interpretation</li> <li>strengthen math &amp; quantitative reasoning skills for the workplace &amp; your personal life</li> </ul> <p>In <b>College Algebra</b>, you will:</p> <ul style="list-style-type: none"> <li>develop advanced algebra skills</li> <li>learn topics including equations &amp; inequalities, exponents, radicals, functions, systems of equations, polynomials &amp; applications</li> <li>prepare for science, engineering, &amp; technology fields &amp; higher level mathematics courses such as Pre-Calculus &amp; Calculus</li> </ul> <p>In <b>Finite Math</b>, you will:</p> <ul style="list-style-type: none"> <li>build on strong algebra skills to focus on applications in business, finance, the social sciences, &amp; human services</li> <li>learn set theory &amp; symbolic logic, linear systems &amp; programming, coordinate systems &amp; graphic techniques, elementary matrix operations, probability, &amp; math of finance</li> <li>fulfill a frequent requirement in bachelor level business &amp; accounting degree programs</li> </ul>
<b>College Algebra</b> or <b>Finite Math</b> or <b>Statistics</b>	<ol style="list-style-type: none"> <li>Solve &amp; graph: <math>-6 &lt; \frac{2-3x}{2} \leq 13</math></li> <li>Find <math>t</math> when <math>\bar{x}_1 = 29, \bar{x}_2 = 19, s_1 = 3.2, s_2 = 4.8, n_1 = 129, \text{ and } n_2 = 97</math>.   <math display="block">t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}}</math> </li> </ol>	<p>In <b>Statistics I</b>, you will:</p> <ul style="list-style-type: none"> <li>learn the basic ideas &amp; techniques of probability &amp; statistics</li> <li>calculate mean, mode, median, range, &amp; standard deviation</li> <li>create &amp; analyze graphical information such as bar graphs, pie charts, boxplots, &amp; histograms</li> <li>prepare for transfer &amp; careers that include research &amp; data analysis in the fields of social sciences, science, allied health, business, &amp; technology</li> </ul>