

Welcome to NSU! Below are brief course descriptions and expectations for entry-level mathematics courses. The math faculty encourage you to schedule your math courses early in your college career, while the mathematics you learned in high school is still fresh in your memory. Please discuss your math background and math placement with your advisor. We look forward to seeing you on campus soon!

MATH 123 – Calculus I includes a study of limits, differentiation, and integration. This is a required course for those pursuing degrees in mathematics, some science fields, and many pre-professional programs. *If you place into MATH 123 as an incoming student, you will be required to take an ACCUPLACER exam to verify your proficiency in algebra and trigonometry and ensure you are ready for the course.*

MATH 120 – Trigonometry includes a study of trigonometric functions, equations, and identities. This is a suitable course for those with strong algebra skills that are preparing to take Calculus.

MATH 114 – College Algebra includes a study of equations and graphs, linear functions, quadratic functions, polynomial functions, rational functions, exponential functions, and logarithmic functions. *Your instructor will assume you are familiar and comfortable with all of the topics covered in MATH 021 and MATH 101.*

MATH 103 – Mathematical Reasoning includes more authentic problems designed to develop logical, critical thinking, and mathematical skills. Topics may include finance, probability and statistics, and linear and exponential modeling. *Your instructor will assume you are familiar and comfortable with all of the topics covered in MATH 021 and MATH 101.*

MATH 101 – Intermediate Algebra is best for students who need a one semester review prior to taking MATH 103 or 114. Topics include brief reviews of solving linear equations, writing equations of lines, and factoring (which are all covered more in-depth in MATH 021). The MATH 101 course also includes simplifying rational expressions and solving equations that contain rational expressions, simplifying radical expressions and solving radical equations, and solving quadratic equations. Below are some *basic* sample questions involving MATH 101 topics:

1. Write an equation of a line that passes through $(-2,6)$ and $(-4,-10)$.
2. Simplify the expression $\frac{9(x^2-16)}{6x^2+36x+48}$.
3. Solve the equation $\frac{3x+1}{x+3} + \frac{x-3}{x+3} = 2$ and check the solution.
4. Solve the equation $\sqrt{x+4} = x - 2$ and check the solutions.
5. Solve quadratic equations such as $2x^2 - x - 5 = 0$.

Answers: 1. $y = 8x + 22$ 2. $\frac{3(x-4)}{2(x+2)}$ 3. $x = 4$ 4. $x = 5, 0$ is extraneous 5. $x = \frac{1 \pm \sqrt{41}}{4}$

MATH 021 – Basic Algebra is the most basic mathematics course offered at NSU. The course includes a study of numbers and operations including algebraic expressions. It also includes solving linear equations and inequalities; writing equations of lines; adding, subtracting, and multiplying polynomials; and factoring. This course is most appropriate for students who have done little or no math in the past several years, or who struggled a great deal in high school algebra courses. Below are some *basic* sample questions involving MATH 021 topics.

1. If $x = 5$ and $y = -2$, evaluate the expression $x - 3y^2$ using the correct order of operations.
2. Solve the equation $2(5x - 7) = 2(x - 35)$ and check the solution.
3. Find the slope of a line that passes through $(-1,3)$ and $(5,8)$.
4. Simplify the expression $3x^2 + 2x - 1 + 5x^2 - 8x + 7$.
5. Find the product: $(2x + 3)(x - 4)$.
6. Factor the expression $x^2 - 7x + 12$.

Answers: 1. -7 2. $x = -7$ 3. $\frac{5}{6}$ 4. $8x^2 - 6x + 6$ 5. $2x^2 - 5x - 12$ 6. $(x - 3)(x - 4)$

MATH 095 – Pre-College Algebra is currently only offered online. It is designed to be a self-paced study of many of the topics from MATH 021 – Basic Algebra and MATH 101 – Intermediate Algebra.