Basic Math Course Map through algebra and calculus

This map shows the most common and recommended transitions between courses. A grade of C or higher is required to move from one course to the next. For other course sequences, see the full map or the Undergraduate Catalog.

Students will start at different places in the map depending on their mathematics placement, and will finish in different places according to their college and major requirements. Minimum placement codes are indicated in parentheses at the upper left of each box. See “General Math Course Info” at http://www.bgsu.edu/dept/math for an explanation of placement codes, the most up-to-date version of this map, and other useful links.

* There are two available routes from 1220 to 1310/1340. The Math department recommends 1220—1280—1340—1350 for most students.
Full Math Course Map through algebra and calculus

This displays the prerequisite structure listed in the Undergraduate Catalog.

More common transitions are shown with thicker arrows.

Students who have taken Math 1260 and want to get to Math 2320 should consult with the Undergraduate Coordinator in the Department of Mathematics and Statistics. Depending on the student’s background and aptitude, the next course to take could be Math 1280, 1300, 1310, 1340, 1350, or 2320.

* There are two available routes from 1220 to 1310/1340. The Math department recommends 1220—1280—1340—1350 for most students.
Math Course Map for Middle Childhood mathematics specialization

This shows the most common and recommended transitions between courses. A grade of C or higher is required to move from one course to the next. Students will start at different places in the map depending on their mathematics placement.

Minimum placement codes are indicated in parentheses at the upper left of each box. See [http://www.bgsu.edu/dept/math](http://www.bgsu.edu/dept/math) for an explanation of placement codes, the most up-to-date version of this map, and other useful links.

Courses outlined in red do not satisfy requirements for this degree, but will be necessary for students who do not place into Math 1310 or Math 1340. Students must take either Math 1310 or both Math 1340 and 1350. From Math 1220, we recommend 1220-1280-1340-1350.

Note that Math 2150, 2160, and 2450 must be passed with a C or higher before taking Math 4150. Plan to take Math 4150 before the Methods block. Math 2470 or 3410 can substitute for Math 2450.

EDTL 3450 counts as three of the 23 hours for the mathematics specialization. Ordinarily, this course is taken in the junior year and must be taken prior to methods. It may be taken before, after, or concurrently with Math 4150. A grade of "C" or higher in EDTL 3450 is required to take EDTL 3460 during the methods block.

Students must pass the Math 2150 placement test or earn a grade of C or higher in Math 90 before registering for Math 2150. See [http://www-math.bgsu.edu/math2130-2150/](http://www-math.bgsu.edu/math2130-2150/)

Students must get a grade of C or higher in Math 1310, 1350, or 2150 before taking Math 4140.
These are the MATH and STAT courses at BGSU that one can start with after receiving a mathematics placement. The listing is current as of February 23, 2012. To see up-to-date course listings, visit http://www.bgsu.edu/offices/registrar/page85280.html, browse course catalog, select M, then click on MATH – Mathematics and Statistics, and finally click on the course you are interested in. For STAT 2000, click on S and then STAT – Applied Statistics.

**MATH 90 – Elementary Algebra.** Fall, Spring. Fundamental topics of beginning algebra. Intended for students having no previous algebra experience. Credit for this course cannot be applied toward any degree program. Graded A, B, C/No Credit.

**MATH 95 – Intermediate Algebra.** Fall, Spring. Number systems, fundamentals of algebra, graphs and equations of straight lines, exponents, polynomial expressions, factoring, rational expressions, roots, the quadratic formula; applications. Prerequisite: Satisfactory placement exam score or grade of C or higher in MATH 90. Credit for this course cannot be applied toward any degree program. Graded A, B, C/No Credit.

**MATH 1150 – Introduction to Statistics.** Fall, Spring, Summer. Description of data, binomial and normal distributions, estimation and testing hypotheses for means and proportions. Prerequisites: Two years high school algebra, one year of geometry and a satisfactory placement exam score.

**MATH 1180 – Mathematical Ways of Thinking.** Fall, Spring. Development of critical thinking and problem-solving skills through mathematical modes of thinking and active exploration of such topics as notions of infinity, the golden rectangle, symmetry, uncertainty, fractals, knots, and musical ratios. Prerequisites: Two years high school algebra, one year geometry and a satisfactory placement exam score.

**MATH 1210 – College Algebra I.** Fall, Spring, Summer. Graphing, algebra, functions and their graphs, factoring, polynomials, rational expressions, rational exponents, linear and quadratic functions and their applications. Not open to students with a grade of C or higher in MATH 1200, MATH 1220, MATH 1280, or MATH 1300. No more than 6 credit hours in MATH 1200, MATH 1210, and MATH 1220 may be counted toward graduation. Prerequisites: Two years of high school algebra, one year geometry and a satisfactory placement exam score, or grade of C or higher in MATH 95.

**MATH 1220 – College Algebra II.** Fall, Spring, Summer. Review of functions and their graphs, linear and quadratic functions, factoring. Polynomial and rational functions. Review of exponents. Exponential and logarithmic functions and their graphs. Systems of equations, theory of equations. Not open to students with a grade of C or higher in MATH 1200, MATH 1280, or MATH 1300. No more than 6 credit hours in MATH 1200, MATH 1210, and MATH 1220 may be counted toward graduation. Prerequisites: Two years of high school algebra, one year geometry and a satisfactory placement exam score, or grade of C or higher in MATH 1210, or grade of D in MATH 1200.

**MATH 1230 – Mathematics for Architecture and Construction.** Fall, Spring. Units and unit conversions; geometry; trigonometry of angles; laws of cosines and sines; solving triangles; vectors; conceptual introduction to differential and integral calculus. This course is specifically designed to prepare students for required courses in the Architecture and Construction Management programs. Prerequisite: Grade of C or higher in MATH 1200 or MATH 1220, or satisfactory placement exam score.
MATH 1260 – Basic Calculus. Fall, Spring, Summer. Differential and integral calculus, multivariate differential calculus and matrix theory; applications. Not open to students with a grade of C or higher in MATH 1310 or MATH 1350. Prerequisites: a grade of C or higher in MATH 1200, MATH 1220, MATH 1280, or MATH 1300; or two years of high school algebra and one of geometry AND a satisfactory placement exam score.

MATH 1280 – Precalculus Mathematics. Fall, Spring, Summer. Basic algebra; inequalities; functions and graphs; logarithmic and exponential functions; trigonometric functions and identities; applications and other topics. Not to be taken if credit for MATH 1290 or MATH 1300 has been received. Only earns 3 hours of credit toward graduation if credit for MATH 1200 or MATH 1220 has been received. Prerequisites: Two years of high school algebra and one of geometry AND a satisfactory placement exam score, or grade of C or higher in MATH 1200 or MATH 1220.

MATH 1300 – Accelerated Precalculus Mathematics. Fall, Spring. Theory of equations and inequalities, coordinate geometry, complex numbers, and theory and applications of polynomial, rational, exponential, logarithmic, and trigonometric functions. An accelerated course compared to its counterpart, MATH 1280. Not to be taken if credit for MATH 1280 or MATH 1290 has already been received. Prerequisites: Two years of high school algebra, one year of high school geometry and a satisfactory placement exam score; or completion of MATH 1200 or MATH 1220 with a grade of C or higher.

MATH 1310 – Calculus and Analytic Geometry. Fall, Spring, Summer. Differential and integral calculus including applications. The MATH 1310-2320-2330 sequence is a traditional calculus course for well-prepared students and is prerequisite for all advanced mathematics and statistics courses. Prerequisites: (1) two years of high school algebra, one year of geometry, one-half year of trigonometry, ACT math score of 24 or higher and satisfactory score on department placement test; or (2) grade of C or higher in MATH 1280, MATH 1290 or MATH 1300.

MATH 1340 – Calculus and Analytic Geometry IA. Fall, Spring. Limits, the derivative, differentiation techniques and applications of the derivative. MATH 1340 and MATH 1350 is a two-semester sequence which includes all the topics from MATH 1310. Not open to students with a grade of C or higher in MATH 1310 or MATH 1260. Prerequisites: same as MATH 1310.