Mathematics Pathways and Prerequisite Information for the University System of Georgia (USG)

Academic programs differ with respect to the mathematics courses that are most appropriate for that particular program of study. The sequence of mathematics courses recommended for each transfer pathway, program of study, or major is the “Mathematics Pathway” for that program. All mathematics pathways start with a particular mathematics course to be taken in Area A2, as specified in Section 2.4.4 of the Academic and Student Affairs Handbook.

The Academic and Student Affairs Handbook states that:

For students majoring in mathematics, physics, chemistry, biology, engineering technology, architecture, computer science, geology, geography (B.S.), forestry, pharmacy, physical therapy, secondary science, or mathematics education, pre-calculus must be the required mathematics course in Area A2 at all institutions. In this document, these majors are collectively referred to as “science programs.”

Institutions may require pre-calculus in Area A2 for majors in agricultural science and environmental science. While students may fulfill this requirement with a math course higher than pre-calculus, institutions may not require them to do so.

A calculus course is required in Area A2 for all engineering majors and for all programs at Georgia Institute of Technology. While students may fulfill this requirement with a math course higher than a first course in calculus, institutions may not require them to do so.

At institutions where trigonometry serves as an immediate prerequisite for Calculus I, the completion of trigonometry will be regarded as completion of pre-calculus in Area A2.

**Area A2 Mathematics in the USG**

<table>
<thead>
<tr>
<th>All majors other than STEM majors</th>
<th>Science, Technology, Mathematics majors</th>
<th>Engineering majors and all Georgia Tech students</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 1001 Quantitative Reasoning OR MATH 1101 Mathematical Modeling</td>
<td>MATH 1111 College Algebra</td>
<td>MATH 1113 Pre-calculus OR MATH 1112 College Trigonometry</td>
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</tbody>
</table>
In an ideal world, students would arrive at their USG institution prepared to take the Area A2 courses specified for their programs. In cases where students do not meet the requirements for direct placement into the Area A2 mathematics courses specified for their programs, they are required to first take any courses that are prerequisite or corequisite to that course until all of the placement requirements, prerequisites, and corequisites have been satisfied.

Engineering majors who do not meet the requirements for direct placement into Calculus will be required to take MATH 1113 Pre-calculus or MATH 1112 College Trigonometry. If students do not meet requirements for placement into MATH 1113 Pre-calculus or MATH 1112 College Trigonometry, they will be required to take MATH 1111 College Algebra. Depending on the students' high school grade point average and test scores, they may also be required to enroll in MATH 0999, the corequisite Learning Support course for MATH 1111. If students do not meet requirements for placement into MATH 1111, they will be required to enroll in MATH 1001 Quantitative Reasoning or MATH 1101 Introduction to Mathematical Modeling. Depending on students' high school grade point averages and test scores, they may also be required to enroll in MATH 0997, the corequisite Learning Support course for MATH 1001, or MATH 0998, the corequisite Learning Support course for MATH 1101.

Science, technology, or mathematics majors who do not meet the requirements for direct placement into MATH 1113 Pre-calculus or MATH 1112 College Trigonometry will be required to take MATH 1111 College Algebra. Depending on the students' high school grade point averages and test scores, they may also be required to enroll in MATH 0999, the corequisite Learning Support course for MATH 1111. If students do not meet requirements for placement into MATH 1111, they will be required to enroll in MATH 1001 Quantitative Reasoning or MATH 1101 Introduction to Mathematical Modeling. Depending on students' high school grade point averages and test scores, they may also be required to enroll in MATH 0997, the corequisite Learning Support course for MATH 1001, or MATH 0998, the corequisite Learning Support course for MATH 1101.

Students in most majors other than science, technology, engineering, and mathematics have the choice of taking MATH 1001 Quantitative Reasoning, MATH 1101 Introduction to Mathematical Modeling, or MATH 1111 College Algebra in Area A2. There are no collegiate prerequisites to take these courses, but depending on students' high school grade point averages and test scores, they may also be required to enroll in MATH 0997, the corequisite Learning Support course for MATH 1001, or MATH 0998, the corequisite Learning Support course for MATH 1101, or the corequisite Learning Support course for MATH 1111.

Students in some non-science, technology, engineering, or mathematics programs are required to take MATH 1111 in Area A2. (For a listing of those programs, see the chart at [http://www.completecollegegeorgia.org/sites/default/files/resources/Math_Pathways_Infographic_2017.pdf](http://www.completecollegegeorgia.org/sites/default/files/resources/Math_Pathways_Infographic_2017.pdf).) If students do not meet requirements for direct placement into MATH 1111 or placement into MATH 1111 with required corequisite Learning Support (MATH 0999), they will be required to enroll in MATH 1001 Quantitative Reasoning or MATH 1101 Introduction to Mathematical Modeling. Depending on students' high school grade point averages and test scores, they may also be required to enroll in MATH 0997, the corequisite Learning Support course for MATH 1001, or MATH 0998, the corequisite Learning Support course for MATH 1101.

Please see the placement/prerequisite summary diagrams for mathematics pathways on the next four pages.
Math Pathways and Placement in the University System of Georgia

Requirements for
Engineering Majors and Students at the Georgia Institute of Technology

Calculus (or higher)

MATH 1113
Pre-Calculus or
MATH 1112
College Trigonometry

If engineering/Georgia Tech students don’t place directly into Calculus, they are required to take MATH 1113 Pre-Calculus or MATH 1112 College Trigonometry prior to taking Calculus.

MATH 0999
Support for College Algebra

MATH 0997
Support for Quantitative Reasoning
OR MATH 0998
Support for Mathematical Modeling

MATH 1111
College Algebra

If engineering/Georgia Tech students don’t place into MATH 1113 Pre-Calculus, they are required to take MATH 1111 College Algebra prior to taking Pre-Calculus. Depending on high school GPA and test scores, enrollment in corequisite Learning Support (MATH 0999) may be required.

MATH 1001
Quantitative Reasoning OR
MATH 1101
Introduction to Mathematical Modeling

If engineering/Georgia Tech students don’t place into MATH 1111 College Algebra, they are required to take MATH 1001 Quantitative Reasoning or MATH 1101 Introduction to Mathematical Modeling prior to taking College Algebra. Depending on high school GPA and test scores, enrollment in corequisite Learning Support (MATH 0997 or MATH 0998) may be required.
Math Pathways and Placement in the University System of Georgia

Requirements for
Science, Technology, or Mathematics Majors

MATH 1113 Pre-Calculus or MATH 1112 College Trigonometry

MATH 1111 College Algebra

MATH 0999 Support for College Algebra

MATH 097 Support for Quantitative Reasoning OR MATH 0998 Support for Mathematical Modeling

MATH 1001 Quantitative Reasoning OR MATH 1101 Introduction to Mathematical Modeling

If students majoring in science, technology, or mathematical subjects don't place into MATH 1113 Pre-Calculus, they are required to take MATH 1111 College Algebra prior to taking Pre-Calculus. Depending on high school GPA and test scores, enrollment in corequisite Learning Support (MATH 0999) may be required.

If students majoring in science, technology, or mathematical subjects don't place into MATH 1111 College Algebra, they are required to take MATH 1001 Quantitative Reasoning or MATH 1101 Introduction to Mathematical Modeling prior to taking College Algebra. Depending on high school GPA and test scores, enrollment in corequisite Learning Support (MATH 0997 or MATH 0998) may be required.
Math Pathways and Placement in the University System of Georgia

Requirements for

Students in Business or Other Pathways Requiring College Algebra

MATH 0999
Support for College Algebra

MATH 1111
College Algebra

MATH 0997
Support for Quantitative Reasoning
OR MATH 0998
Support for Mathematical Modeling

MATH 1001
Quantitative Reasoning OR
MATH 1101
Introduction to Mathematical Modeling

Appropriate Area A mathematics course for students pursuing programs of study in specific business administration or other programs of study requiring MATH 1111 College Algebra. Depending on high school GPA and test scores, enrollment in corequisite Learning Support (MATH 0999) may be required.

If students majoring in programs requiring College Algebra don’t place directly into MATH 1111 College Algebra, they are required to take MATH 1001 Quantitative Reasoning or MATH 1101 Introduction to Mathematical Modeling prior to taking College Algebra. Depending on high school GPA and test scores, enrollment in corequisite Learning Support (MATH 0997 or MATH 0998) may be required.
Math Pathways and Placement in the University System of Georgia

Requirements for

Students in Programs not Requiring College Algebra

MATH 0997
Support for Quantitative Reasoning
OR MATH 0998
Support for Mathematical Modeling

MATH 1001
Quantitative Reasoning OR
MATH 1101
Introduction to Mathematical Modeling

Appropriate Area A mathematics course for students pursuing programs of study that do not require Calculus or College Algebra. Depending on high school GPA and test scores, enrollment in corequisite Learning Support (MATH 0997 or MATH 0998) may be required.