# First Semester Math Recommendations for Specific Majors

Category 1B of the All-University Core Curriculum (AUCC) requires students to have at least three credits of quantitative reasoning (mathematics or statistics).  Visit the [General Catalog](#) for a current list of courses that will satisfy this requirement.

Many majors have specific courses that are required, whereas, other majors may not specify.   This document has a list of CSU majors and what your advisor wants you to know about taking a math and/or statistics class your first semester at CSU.

**MATH 101**, **STAT 100, STAT 201,** and **STAT 204** do not have prerequisites.  If one of these courses are acceptable for your major, you will not need to take the Math Placement Tool. These courses will not satisfy the prerequisite for higher-level math.  Therefore, if you add to or change your degree program, you may end up having to take the Math Placement Tool later.

Not every student will place into the class(es) recommended to take their first semester.  These students can opt to improve their math placement results and/or register for the prerequisite classes. When you look at your results, you will see what options are available to you if you wish to improve your math placement.  If you wish to register for the prerequisite classes, you will need to place into at least MATH 117.

The Math Placement Tool covers the content of the five one credit pre-calculus courses at CSU.

- **MATH 117** College Algebra I (prerequisite: satisfactory score on a Colorado State University Mathematics Placement Examination, or MAT 055, 093, or 099 taken at a Colorado Community College with a grade of C- or higher)
- **MATH 118** College Algebra II (prerequisite: MATH 117)
- **MATH 124** Logarithmic and Exponential Functions (prerequisite: MATH 117 and 118)
- **MATH 125** Numerical Trigonometry (prerequisite: MATH 117 and 118)
- **MATH 126** Analytical Trigonometry (prerequisite: MATH 117, 118, and125)

The Math Placement Tool consists of three sections: Algebra (MATH 117 and 118), Trigonometry (MATH 125 and 126), and Logarithmic and Exponential Functions (MATH 124).   The only section you are required to answer is the Algebra section.

 The Math Placement Tool is also testing prerequisite skills for two of the entry-level math courses. (The third entry-level math course, **MATH 101** Mathematics in the Social Sciences, has no prerequisites.)

- **MATH 105** Patterns of Phenomena, not offered Fall 2021 (This course does not satisfy the prerequisite for higher-level math.)
- **MATH 117** College Algebra I

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Some students should be enrolled in calculus their first semester.  There are three different first semester calculus courses at CSU:

- **MATH 141**, Calculus in the Management Sciences (prerequisite: MATH 117 and 118)
- **MATH 155**, Calculus for Biological Students I (prerequisite: MATH 117, 118, 124, and 125)
- **MATH 160**, Calculus for Physical Scientists I (prerequisite: MATH 117, MATH 118, MATH 124, MATH 125, and MATH 126. Note: for both MATH 124 and 126 students must place out of the course on the Math Placement Tool and/or have a grade of B or higher.)
  - **MATH 157/159** is another option for students required to take MATH 160.  MATH 157/159 is a two semester sequence of classes covering the same content as MATH 160 but moving at a slower pace.  MATH 157 is offered in the fall (Prerequisites: MATH 117, 118, 125, 126, MATH 124 is a co-requisite).

| Major | Is math important to first semester schedule?* | The ideal placement will allow students to register for the following AUCC 1B course. | Notes |
|---|---|---|---|
| Agricultural Biology | Yes | MATH 155 | The algebra section is the most important section.  Placing out of the algebra course (MATH 117) will allow you to register for chemistry CHEM 107. Then Math 118, Math 124 and Math 125 as Prerequisites to Math 155. |
| Agricultural Business | Yes | MATH 117, 118, 124 | The algebra section is the most important section. You must be enrolled in or have completed MATH 117 & 118 before taking the first class required for Ag Business, AREC 202. |
| Agricultural Education | Yes | MATH 117, 118, 124 | The algebra section is the most important section. You must be enrolled in or have completed MATH 117 & 118 before taking AREC 202, preferably, in your first semester on campus. |
| Animal Science | Yes | MATH 117, 118, and 124 | |
| Anthropology | No | Any, MATH 101 is fine | |

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|---|---|---|---|
| **Apparel and Merchandising** | Yes, very important | MATH 117, 118, 124 | |
| **Art (BA and BFA)** | No | Any, MATH 101 or STAT 100 is fine | Only consideration for Art students is if they want a minor that requires a certain level of math. |
| **Biochemistry** | Yes, very important | MATH 155 or MATH 160 | The algebra section is the most important section. Placing out of the two algebra courses (MATH 117 and 118) will fulfill the math prerequisite for chemistry. |
| **Biological Science (Biology)** | Yes, very important | MATH 117, 118, 124, 125, or 155 | The algebra section is the most important section. Placing out of the two algebra courses (MATH 117 and 118) will fulfill the math prerequisite for chemistry. |
| **Biomedical Engineering** | Yes, very important | MATH 160 | All Engineering students must take the Math Placement Tool prior to Ram Orientation due to math prerequisites for courses such as MATH 160 & 161, as well as CHEM 111 and PH 141. Please note it is not possible to graduate from Engineering in 10 semesters unless you place into MATH 160 or higher in your first semester or take summer courses. |
| **Biomedical Sciences** | Yes, very important | Anatomy and Physiology concentration requires MATH 155 or MATH 160. Environmental Public Health and Microbiology and Infectious Disease concentrations require a minimum of three credits from MATH 118, 124, 125, 126, 155, and/or 160. | The algebra section is the most important section. Placing out of the two algebra courses (MATH 117 and 118) will fulfill the math prerequisite for chemistry. |

| Major | Is math important to first semester schedule?* | The ideal placement will allow students to register for the following AUCC 1B course. | Notes |
|---|---|---|---|
| **Business Adminstration** | Yes | MATH 141 | All Business students must take the MPE prior to Ram Orientation. The algebra section is the most important section. Placing out of the two algebra courses (MATH 117 and 118) will allow you to register for MATH141 and ECON202, which are both required for Business Majors. |
| **Chemical and Biological Engineering** | Yes, very important | MATH 160 | All Engineering students must take the Math Placement Tool prior to Ram Orientation due to math prerequisites for courses such as MATH 160 & 161, as well as CHEM 111 and PH 141.  Please note it is not possible to graduate from Engineering in 8 semesters unless you place into MATH 160 or higher in your first semester or take summer courses. |
| **Chemistry** | Yes, very important | MATH 160 | The algebra section of the MPE is the most important section.  Placing out of the two algebra courses (MATH 117 and 118) will allow you to register for the first chemistry course. |
| **Civil  and Environmental Engineering** | Yes, very important | MATH 160 | All Engineering students must take the Math Placement Tool prior to Ram Orientation due to math prerequisites for courses such as MATH 160 & 161, as well as CHEM 111 and PH 141.  Please note it is not possible to graduate from Engineering in 8 semesters unless you place into MATH 160 or higher in your first semester or take summer courses. |

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|---|---|---|---|
| **Communication Studies** | No | Any, MATH 101 is fine | Only consideration for students is if they want a minor or double major that requires a certain level of math. |
| **Computer Engineering** | Yes, very important | MATH 160 | All Engineering students must take the MPE prior to Ram Orientation due to math prerequisites for courses such as MATH 160 & 161, as well as CHEM 111 and PH 141. Please note it is not possible to graduate from Engineering in 8 semesters unless you place into MATH 160 or higher in your first semester or take summer courses. In addition, it is important for students to take CS 163 or CS 164 in their first semester. Students must show completion of MATH 124 via transfer credit, AP/IB credit or through the MPE in order to take CS 163/164. |
| **Computer Science** | Yes, very important | MATH 160 | The algebra and logarithmic sections of the MPE are the most important sections. The prerequisites for the first computer science course are MATH 117, 118, and 124. |
| **Construction Management** | Yes, very important | MATH 125 | A grade of C or better in MATH 125 is required for admission to the Construction Management major. Students must take MATH 125 in order to progress to the rest of the Construction Management courses. |
| **Dance** | No | Any, MATH 101 is fine | Only consideration for students is if they want a minor or double major that requires a certain level of math. |

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|---|---|---|---|
| **Data Science** | Yes, very important | MATH 160 | The algebra and logarithmic sections are the most important sections. The prerequisites for the first computer science course are MATH 117, 118, and 124. |
| **Early Childhood Education** | No | Any AUCC 1B, STAT 201 is recommended since this course can satisfy both the AUCC 1B requirement and the statistics requirement for the major. | STAT 201 is sufficient for Early Childhood Education majors. Only consideration for students is if they want a minor or double major that requires a certain level of math. |
| **Economics** | Yes, very important. | MATH 117 and 118 | Eventually must complete MATH 141 or 155 or 160 and Statistics 201, 204 or a 300 level statistics course. Timely graduation best ensured if calculus done by end of sophomore year. Stats by end of 1st semester junior year (although that is pushing it). |
| **Ecosystem Science and Sustainability** | Yes, very important | MATH 155 or 160 | Major requires completion of MATH 155 or 160 and STAT 301 or 307. Timely graduation best ensured if calculus done no later than fall of second year and statistics by fall of third year. |
| **Electrical and Computer Engineering** | Yes, very important | MATH 160 | All Engineering students must take the Math Placement Tool prior to Ram Orientation due to math prerequisites for courses such as MATH 160 & 161, as well as CHEM 111 and PH 141. Please note it is not possible to graduate from Engineering in 8 semesters unless you place into MATH 160 or higher in your first semester or take summer courses. |

| Major | Is math important to first semester schedule?* | The ideal placement will allow students to register for the following AUCC 1B course. | Notes |
|---|---|---|---|
| **Engineering Open Option** | Yes, very important | MATH 160 | All Engineering students must take the MPE prior to Ram Orientation due to math prerequisites for courses such as MATH 160 & 161, as well as CHEM 111 and PH 141.  Please note it is not possible to graduate from Engineering in 10 semesters unless you place into MATH 160 or higher in your first semester or take summer courses. |
| **English** | No | Any, MATH 101 is fine | The only math consideration for English is if the student is in or is considering a minor or double major with specific math requirements. |
| **Environmental and Natural Resource Economics** | Yes | MATH 117, 118, 124 | The algebra section is the most important section. You must be enrolled in or have completed MATH 117 & 118 in order to take Ag Economics in your first semester on campus. |
| **Environmental Engineering** | Yes, very important | MATH 160 | All Engineering students must take the MPE prior to Ram Orientation due to math prerequisites for courses such as MATH 160 & 161, as well as CHEM 111 and PH 141.  Please note it is not possible to graduate from Engineering in 8 semesters unless you place into MATH 160 or higher in your first semester or take summer courses. |

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|---|---|---|---|
| **Environmental Horticulture** | Yes | MATH 117, 118, plus 124 or 125 (see notes) | Three credits of math are required. Landscape Business, and Landscape Design & Contracting Concentrations require up to MATH 125; Other concentrations up to MATH 124.<br><br>The algebra section of the MPE is the most important section. Placing out of the two algebra courses (MATH 117 and 118) will fulfill the math prerequisite for chemistry, and/or microeconomics. |
| **Equine Science** | Yes | MATH 117, 118, and 124 | |
| **Ethnic Studies** | No | Any, MATH 101 is fine | The only math consideration for Ethnic Studies is if the student is in or is considering a minor or double major with specific math requirements. |
| **Family and Consumer Sciences** | No | Any, MATH 101 is fine | Only consideration for students is if they want a minor or double major that requires a certain level of math. |
| **Fermentation Science and Technology** | Yes | MATH 117, 118, 124, 125 | |
| **Fire and Emergency Services Administration** | No | Any AUCC 1B – MATH 101 is fine | This degree is offered through CSU online. |

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|---|---|---|---|
| **Fish, Wildlife and Conservation Biology** | Yes, very important | MATH 117 or higher | Completing MATH 117, 118, 124, and 125 before the end of the freshman year is critical to staying on track for calculus and other courses that have MATH 155 and/or MATH 117-125 as prerequisites. |
| **Forest and Rangeland Stewardship** | Yes | Forest biology concentration MATH 155, all other concentrations MATH 141 | The algebra section is the most important section. Placing out of the two algebra courses (MATH 117 and 118) will allow you to register for MATH141. Completion of MATH141 by sophomore year is key to a student graduating in four years. |
| **Geography** | No | Any, MATH 101 is fine | Only consideration for students is if they want a minor or double major that requires a certain level of math. |
| **Geology** | Yes, very important | MATH 160 | The algebra section is the most important section. Placing out of the two algebra courses (MATH 117 and 118) will fulfill the math prerequisite for chemistry. Some concentrations previously accepted MATH 155. As of Fall 2015, all concentrations must take MATH 160. |
| **Health and Exercise Science** | Yes | MATH 118, 124, and 125 | |
| **History** | No | Any, MATH 101 is fine | Only consideration for students is if they want a minor or double major that requires a certain level of math. |

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|---|---|---|---|
| Horticulture | Yes | MATH 117, 118, 124 or MATH 155 | Three credits of math are required. Horticultural Science Concentration requires MATH 155; Other concentrations require up to MATH 124<br><br>The algebra section of the MPE is the most important section. Placing out of the two algebra courses (MATH 117 and 118) will fulfill the math prerequisite for chemistry, and/or microeconomics. |
| Hospitality Management | Yes | MATH 117 and MATH 101 | |
| Human Development and Family Studies | No | Any AUCC 1B, STAT 201 is recommended since this course can satisfy both the AUCC 1B requirement and the statistics requirement for the major. | STAT 201 is sufficient for HDFS majors. However students pursuing careers in health professions or pursing certain other majors and minors should take at least MATH 117, 118, 124 to fulfill prerequisites for future science courses. |
| Human Dimensions of Natural Resources | Yes | MATH 117, 118, 124 | |
| Interdisciplinary Liberal Arts | No | Any AUCC math – MATH 101 most common | Many incoming interdisciplinary Lib. Arts students are exploring majors/minors, so MATH 117 is suggested if they qualify. |

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|---|---|---|---|
| **Interior Architecture and Design** | Yes | MATH 117, 118, 124 | |
| **International Studies** | Yes, but not critical | Any AUCC 1B class is fine. Mathematics (specifically) is not required. | |
| **Journalism and Media Communication** | No | Any AUCC Math | The only math consideration is if the student is in or is considering a minor or double major with specific math requirements. |
| **Landscape Architecture** | Yes | MATH 117, 118, 125, and 126 | Three credits of math are required. Placing into MATH 118 is ideal. Program requires up to MATH 126.<br><br>The algebra section is the most important section. Placing out of the two algebra courses (MATH 117 and 118) will fulfill the math prerequisite for chemistry, and/or microeconomics. |
| **Languages, Literatures and Culture** | No | Any AUCC Math – MATH 101 most common | |
| **Mathematics** | Yes, very important | MATH 160 | |

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|---|---|---|---|
| **Mechanical Engineering** | Yes, very important | MATH 160 | All Engineering students must take the MPE prior to Ram Orientation due to math prerequisites for courses such as MATH 160 & 161, as well as CHEM 111 and PH 141. Please note it is not possible to graduate from Engineering in 8 semesters unless you place into MATH 160 or higher in your first semester or take summer courses. |
| **Music (BA and BM)** | No | Any, MATH 101 is fine | Only consideration for Music students is if they want a 2nd major or minor that requires a certain level of math. |
| **Natural Resource Tourism** | Yes | MATH 117, 118, 124 | |
| **Natural Resources Management** | Yes | MATH 117, 118, 125 | Completion of three math credits by sophomore year is key to a student graduating in four years. |
| **Natural Sciences** | Yes, very important | MATH 155 or 160 | The algebra section is the most important section. Placing out of the two algebra courses (MATH 117 and 118) will fulfill the math prerequisite for chemistry. |
| **Neuroscience** | Yes, very important | MATH 155 or MATH 160 | The algebra section is the most important section. Placing out of the two algebra courses (MATH 117 and 118) will fulfill the math prerequisite for chemistry. |
| **Nutrition and Food Science** | Yes | MATH 117, 118, 124 | Nutritional sciences and Nutrition & Fitness concentrations require MATH 125. |

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|---|---|---|---|
| **Philosophy** | No | Any AUCC Math – MATH 101 is fine | The only math consideration for Philosophy is if the student is in or is considering a minor or double major with specific math requirements. |
| **Physics** | Yes, very important | MATH 160 | |
| **Political Science** | No | Any AUCC Math – MATH 101 is fine | The only math consideration is if the student is in or is considering a minor or double major with specific math requirements. |
| **Psychology** | Yes | MATH 117 | |
| **Restoration Ecology** | Yes | MATH117, 118, and 125 | Completion of three math credits by sophomore year is key to a student graduating in four years. |
| **Social Work** | No | Any AUCC Math – STAT 100 is recommended | STAT 100 will clear both your mathematics and social work statistic requirements. |
| **Sociology** | No | Any AUCC Math—MATH 101 is fine | Three credits of math required. MATH 105, 133, and 135 are NOT acceptable. |
| **Soil and Crop Sciences** | Yes | MATH 124, 125, 126 – Plant Biotechnology, Genetics, & Breeding and Soil Ecology concentrations; MATH 117, 118, 124 – all other concentrations | |
| **Statistics** | Yes, very important | MATH 160 | |
| **Theatre** | No | Any, MATH 101 is fine | Only consideration for students is if they want a 2nd major or minor that requires a certain level of math. |

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| Major | Is math important to first semester schedule?* | The ideal placement will allow students to register for the following AUCC 1B course. | Notes |
|---|---|---|---|
| **Undeclared Arts/Humanities and Design** | No, but encouraged | MATH 117 encouraged | |
| **Undeclared Art Interest** | No | | |
| **Undeclared Business Interest** | Yes | MATH 118 | Testing into MATH 117 will work, MATH 101 is not appropriate placement. |
| **Undeclared Engineering Interest** | Yes, very important | MATH 160 or MATH 157 | If student is not able to register for calculus 1, student should plan to take all precalculus credits needed (MATH117-126) in first semester. MATH101 is not appropriate placement. |
| **Undeclared Environmental and Natural Resources** | Yes | MATH 117 | |
| **Undeclared Exploring** | No, but encouraged | MATH 117 | Depends on major |
| **Undeclared Global and Social Sciences** | Yes, but not critical | MATH 117 | Depends on major |

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| Major | Is math important to first semester schedule?* | The ideal placement will allow students to register for the following AUCC 1B course. | Notes |
|---|---|---|---|
| **Undeclared Health, Life, and Food Sciences** | Yes, very important | MATH 124 | Testing into MATH117 will work. MATH101 is not appropriate placement. |
| **Undeclared Information Technology Interest** | Yes | MATH 125 | Testing into MATH117, 118 or 124 will work, but slow down CS class sequence. MATH101 is not appropriate. |
| **Undeclared Journalism Interest** | No, but encouraged | MATH 117 encouraged, any math is acceptable | |
| **Undeclared Land, Plant, and Animal Sciences** | Yes | MATH 124 | Testing into MATH117 will work. MATH101 is not appropriate placement. |
| **Undeclared Life Science Interest** | Yes, very important | MATH 124 | Testing into MATH117 will work. MATH101 is not appropriate placement. |
| **Undeclared Math, Physical Sciences, and Engineering** | Yes, very important | MATH 160 or MATH 157 | MATH101 is not appropriate placement. |
| **Undeclared Organization, Management, Enterprise** | Yes | MATH 118 | Testing into MATH117 will work. MATH101 is not appropriate placement. |

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|---|---|---|---|
| **Watershed Science** | Yes, very important | MATH 155 or 160 | Major requires completion of MATH 155 or 160, MATH 255 or 161, and STAT 301 or 315. Timely graduation best ensured if both calculus courses done by fall of second year and statistics by spring of second year. |
| **Women's and Gender Studies** | No | Any AUCC math – MATH 101 most common | |
| **Zoology** | Yes, very important | MATH 117, 118, 124, 125, or 155 | The algebra section is the most important section. Placing out of the two algebra courses (MATH 117 and 118) will fulfill the math prerequisite for chemistry. |

* CSU requires all students to satisfy category 1B (3 credits of quantitative reasoning) of the All-University Core Curriculum before earning 60 credits, including transfer credits. Refer to the General Catalog for more information.