

General math advising for students in the Math and Science Division

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1. Which math classes should be taken and when?

Math requirements vary from one degree program to the next, even within the Math and Science Division. **It is very important to make sure that a student in any program that requires calculus (MATH 1910) or higher begins the “algebra sequence” of math courses early enough for them to complete all their math courses within a reasonable number of semesters.** The “algebra sequence” refers to a sequence of math prerequisite courses leading up to MATH 1910:

MATH 1005 → MATH 1710 → MATH 1720 → MATH 1910

(Alternatively, students may take MATH 1730 instead of MATH 1710 and MATH 1720, but this is advisable only for students with a very strong math background who are prepared for a very challenging class; **most students should take the 1710/1720 sequence instead of 1730.**)

Students should be placed in the highest math class in this sequence for which they meet the prerequisites (see table below), based on ACT scores AND their high school math background. (Yes, you must check that the student took the appropriate classes in high school.)

Class		Prerequisite
MATH 1005	Algebra Essentials	ACT Math subscore of 19 (or equivalent), or completion of Learning Support Competencies 1-5 , or concurrent registration in MATH 0105
MATH 1710	Precalculus Algebra	ACT Math subscore of 19 or equivalent, or completion of MATH 1005 with a grade of B or higher.
MATH 1720	Precalculus Trigonometry	Either MATH 1710 with a grade of C or higher, completion of MATH 1130 with a grade of A, or four years of high school mathematics including Algebra II and an ACT Math subscore of 23 (or equivalent)
MATH 1730	Precalculus	ACT MATH subscore of 21 or equivalent, or completion of MATH 1005 with a grade of B or higher, or completion of MATH 1130 with a grade of C or higher or MATH 1710 with a grade of C or higher.
MATH 1910	Calculus I	Four years of high school mathematics, including trigonometry, and an ACT math subscore of 25 or greater or MATH 1720 or MATH 1730 (either with a grade of C or higher)

If a student is in a program that requires MATH 1910 or higher and needs learning support for math (ACT<19), they MUST take MATH 1005 and MATH 0105 in their first semester in order to graduate in four semesters.

If students who need calculus or higher begin with MATH 1010, MATH 1530, or other MATH courses not in this sequence, it will likely delay their graduation.

It is NOT advisable for a student to take MATH 1130 to enter the algebra sequence. MATH 1130 is not really a part of this sequence, and its curriculum is not intended to help a student move along this path. References to MATH 1130 in prerequisites for the algebra sequence are only there to allow a pathway for students who happen to have already taken it, perhaps because they switched majors and took it in pursuit of the old major.

Students who need both calculus and statistics (MATH 1530) may have to take two math classes in the same semester in order to graduate in four semesters, depending on where they enter the algebra sequence.

Students pursuing the Math A.S. must take a sequential series of four math courses beginning with MATH 1910. Therefore, a student who needs to take any of the prerequisite classes in the algebra sequence will require more than four semesters to complete the program. It is important to advise such students that completing their A.S. will take them longer than they may have expected. Students who require multiple prerequisites or math learning support need to have a heart-to-heart talk about whether a math degree is really the right choice for them.

2. Which option for math learning support should a Math and Science student take?

For most Math and Science programs, a student will need MATH 1005 with MATH 0105. This will allow the student to immediately begin the algebra sequence described above. Students who are required to take MATH 1130 should also take MATH 1005 with MATH 0105 to satisfy learning support.

If a student is in a program that requires statistics (MATH 1530) but not higher math classes, they may instead take MATH 1530 and MATH 0153. However, if higher math classes are required, taking this would delay the student from entering the algebra sequence and, in turn, possibly delay their graduation.

If a student is in a program that requires only MATH 1010, and no higher math classes, they may take MATH 1010 and MATH 0101. (All Math and Science programs require at least MATH 1530 or MATH 1130, so this will not be an option for Math and Science students.)

3. Math prerequisites for science classes

Many science courses (particularly chemistry and physics) have math prerequisites. **Therefore, it is very important to make sure students are on track to complete their prerequisite math courses as early as possible, so they are not delayed in beginning their sequence of science courses.**

For example, General Chemistry I (CHEM 1110) has a prerequisite of an ACT math subscore of 19 or higher or completion with a grade of C or higher or concurrent enrollment in MATH 1710 or higher. So, if a student with $ACT < 19$ needs to take CHEM 1110, they must have already completed MATH 1005 and MATH 0105 before they can enroll in CHEM 1110 and concurrently enroll in MATH 1710. It is therefore very important that such a student take MATH 1005 and MATH 0105 in their first semester. Otherwise, entry into their chemistry sequence (which is a four-semester sequence if their degree program requires organic chemistry) would be unnecessarily delayed.

When advising students pursuing Math and Science programs, be sure to check the math prerequisites for all their science classes to ensure students will take the appropriate math classes, and make sure they begin them as early as possible (first semester).

4. Which calculus course, MATH 1830 or MATH 1910, should a Math and Science student take?

Short answer: MATH 1910.

A student in a Math and Science program that requires calculus should almost always take MATH 1910, and not MATH 1830. MATH 1830 is an applied calculus class intended for business majors and is NOT equivalent to nor an acceptable substitute for MATH 1910. Most programs requiring calculus will specifically require MATH 1910, and will not have MATH 1830 as an option. However, the Pre-Health Professions A.S. (Dentistry, Medicine, Optometry, Pharmacy, Veterinary Medicine), for example, lists MATH 1830 as an option. Most programs that these students will pursue after Vol State will require MATH 1910 (or equivalent) and will NOT accept MATH 1830. The only programs we are aware of that accept MATH 1830 are some, but not all, pharmacy programs. So in general, always advise a student to take MATH 1910 and not MATH 1830 unless you are absolutely certain that MATH 1830 will actually satisfy the student's long-term goals (which it likely will not.) **Rule of thumb: do not put Math and Science students in MATH 1830. It is likely that the four-year school they transfer to will require MATH 1910.**

5. Which math class should students in the Pre-Nursing A.S. program take?

Multiple math options are listed under the Pre-Nursing A.S. (MATH 1530, MATH 1130, MATH 1710, MATH 1730). Although any of these will satisfy the degree requirement, different students will need different math classes depending on their plans after Vol State. You must discuss future plans with pre-nursing students and direct them to take whichever math class is required by the four-year nursing program to which they intend to transfer after Vol State. Students interested in pursuing the two-year Nursing A.A.S. program at Vol State must complete MATH 1530 before applying to the program.