

What Math Class Should I Take Next Year?

The UC / CSU A-G requirement for math is 3 years with grades of C or higher, with a 4th year recommended. The East Side Union High School District graduation requirement is passing two years of math.

Current Class

Math 1 – two choices

- **Math 2:** Successful completion of both Math 1 and Math 2 will fulfill your high school graduation requirement. This is the choice if you have at least a D in Math 1.
- **Math 1 Repeat:** This is for students who failed Math 1. (We recommend you retake Math 1 in summer school, if offered, to get caught back up)

Math 2 – three choices

- **Math 3:** Successful completion (grade of C or higher) of Math 3 will fulfill the 3rd year of math required by the A –G requirements of the University of California and the California State schools. This is the choice for students who have at least a C in Math 2.
- **Math 2 repeat:** This is for students who failed Math 2.
- **No math:** If you have passed Math 1 and 2, you have fulfilled the high school graduation requirement. However, if you have any intention of going to college or are at least thinking about it, you should take a 3rd year of math.
- **Note** – a grade of a D or higher in Math 2 makes you eligible for Math 3. HOWEVER, that D grade does not fulfill the second year of the UC / CSU A-G requirement. If you receive a D in Math 2 we strongly recommend that you retake Math 2 in summer school to raise your grade and to gain a better understanding of the material. Students with a D in Math 2 who plan on going to math 3 should understand their current performance does not predict success in math 3.

Math 3 – five choices

- Math Analysis: This class consists of pre-calculus and Trigonometry. Successful completion leads to enrollment in Calculus AB. Students need to have a grade of D or better in Math 3 to take this class, but the math department recommends students have grades of A's or B's in Math 3. Students with C's and D's in Math 3 may struggle in Math Analysis due to their incomplete knowledge of concepts and should be prepared to seek extra help if they decide to take math analysis anyways.
- AP Statistics: While the minimum pre-requisite for AP Statistics is a grade of C or better in Math 3, the AP Statistics teachers have found that almost all students who go into Stats from Math 3 do not do well in the class.
- Repeat Math 3: If you have a grade of C or D in Math 3, you are probably going to struggle in Math Analysis and AP Statistics. It is a very good choice to repeat Math 3 and strengthen your algebraic skills (or take MRWC – see below). Also students who have a D or F in Math 3 and who wish to fulfill the A-G requirements should retake Math 3.
- MRWC: This class is open for *seniors only*. The prerequisites are grades of D or higher in Math 1-3. This class would be for seniors who do not want to take a year off from math, but feel they are not ready for math analysis. The idea of this class is to expand on the topics of Math 1-3 so that students would be prepared to succeed in Math Analysis / Pre-Calculus when they enter college the following year. It is not meant to be a class students take and then move to Calculus. It does fulfill a year of the A-G requirements.
- No Math: you have completed the minimum 3 years needed to fulfill the A-G requirements. Note, we do not recommend this as most colleges are looking for 4 + years of math. Also, if you take the placement test at many colleges, you probably will not do well and be required to take remedial math.

Math Analysis - 4 choices

- **Calculus AB:** This is an AP class and thus will be hard. However, the passing rate at EVHS for students on the Calculus AB exam used to be about 90%, but has been lower the past few years due somewhat to distance learning. The math department recommends students have a grade of an A or B in Math Analysis to move on to Calculus AB, but grades of C's will also be allowed to move on, but note that those students will probably struggle in Calculus AB and should be prepared to seek extra help. There is no such thing as a new start in CalcAB, if you are not excellent at algebra and functions, you will have big problems..
- **AP Statistics:** This class will also be hard. Passing rates for the AP Exam at EVHS are consistently around 85%. For students deciding between taking AP Calculus AB and AP Statistics, the math department recommends you take Calculus AB provided that you have been doing well in Math Analysis. Calculus AB “flows” from Math Analysis and is the next progression in math courses. In Calculus AB, you will use a lot of what you learned in Math Analysis and the longer you wait to take Calculus after Math Analysis, the more you will forget those skills. Statistics is a “stand alone” class, meaning that you will use nothing from Math Analysis and thus there is no worry about forgetting things.
- **No Math:** you have completed 4 years of math as far as UC / CSU is concerned. Note, we do not recommend this as most colleges are looking for 4 + years of math and you are good at math, why stop?
- **Repeat Math Analysis:** This is for students who receive a D or F in math analysis.

Calculus AB – 4 choices

- Calculus BC: The math department recommends students have a grade of an A or B in Calculus AB to move on to Calculus BC, but grades of C's will also be allowed to move on, but note that those students will probably struggle in Calculus BC and thus should be prepared to seek extra help.
- AP Statistics: For students deciding between taking AP Calculus BC or AP Statistics, the math department recommends you take Calculus BC provided that you have been doing well in AB. Calculus BC “flows” from AB and is the next progression in math courses. In Calculus BC, you will use a lot of what you learned in Calc AB and the longer you wait to take BC after AB, the more you will forget those skills. Statistics is a “stand alone” class, meaning that you will use nothing from your previous math classes and thus there is no worry about forgetting things.
- No Math: Not really a good choice – you are good at math, keep taking courses.
- Calculus AB repeat: This is for students who received a grade of D or F in Calc AB.

How hard is the Class? Will I be successful? What do I have to know? What is the class about...(More to help you decide the right class)

Math 3: If you have been getting A's and B's in Math 1 and 2, then Math 3 should not be too hard for you. It will be harder than Math 2, and it is expected that you learned and remember some of those things you learned in 1 and 2. You will continue with the same process of exploring, learning problems in context, and having to explain results like you have been doing in 1 and 2. If you got Cs in 1 and 2 (especially 2) then Math 3 will be hard for you. You should expect this and plan on seeking extra help right from the beginning of the class.

Math Analysis: This class will be exponentially harder than Math 3. (If you don't know what that refers to, you might not want to take this class.) The first semester of Math Analysis has sometimes been referred to as all the hard problems in Math 3, plus harder. The Trig part of Math Analysis requires as much logical thinking as it does algebraic manipulation. Students who do well in MA will have a firm grasp on manipulating variables as well as an ability to think on their own, rather than just mindlessly following some example problems. We think an A or B in Math 3 shows that you are prepared for this class. Students with a C should really think about if they should take this, or retake Math 3 to get their skills better before moving on.

MRWC: This class will be harder than Math 3, but slightly easier than Math Analysis. You will be using the same concepts as you have learned in Math 1-3, along with some new trigonometry concepts. The idea of this class is to further tie those concepts together and using your Math 1-3 skills take them to a better conceptual level of understanding. It is a class to help students bridge the gap between Math 3 and Math Analysis. MRWC is open to seniors only.

Calculus AB: This is a college level math class, and as such is going to be taught like one. A grade of an A or B in Math Analysis should have you ready, but it too will be exponentially harder than Math Analysis. You should be an “expert” at manipulating variables and be able to think on your own. This is not a “do 30 problems just like the example” class. You have to be able to apply concepts learned to different situations. If you have a C in Math Analysis, we really think the best course of action is to repeat Math Analysis before moving on to Calculus AB, but we will not stop those who wish to move on. Your Calculus teacher will expect a lot of time from you for homework and will work you hard. But those who do the work and put in the time will be completely prepared for the AP exam – about 80 - 90% usually pass AB and BC – the highest passing rate of any AP classes at EV.

AP Statistics: Contrary to what some might say, this class is not “easy.” For some, yes it is easy, but for most it is not. The mathematics you will use is not hard, but the key to the class is not the mathematics, it is the ability to think logically, and your ability to communicate. Want to try to predict how well you will do? Think about your geometry grade and second semester Math Analysis. No we don’t do proofs or trig identities, but those were the classes that required the most logical thinking. Almost all students who take AP Stats after they finish Calculus AB or BC do well. Almost all students who take stats right after Math 3 do poorly. Those who take it after Math Analysis are much harder to predict. Many students who take it after a D or F in Math Analysis do poorly in Stats too. We think you should retake Math Analysis rather than move to a college level class. 90% of the problems in AP Stats are “word problems” so it is not a class where you can just follow an example from the teacher and repeat it over and over.

Lastly, some notes about summer school math

The math department at EV would like you to be aware that we do not recommend summer school as a means to move forward one year in math. We have found that most students who use summer school to recover a grade of a D or an F and then move to the next level the following year will struggle in that next level class. This is especially true for those making up poor grades in Math 3 moving to Math Analysis and making up poor grades in Math Analysis moving to Calculus AB. We suggest you make up those poor grades in the regular school year next year. Or if you use summer school, you consider that the final math class taken in high school. Summer school at many, if not most places that offer it, is oftentimes easier than the regular year due to the time constraints and not being able to cover all the standards. Also there is the fact that students have only one class they need to concentrate on unlike the school year with 4 or more classes in addition to math. Plus, to succeed in a summer school class, students need to retain the material for only a few days for an average chapter test and only 5 or 6 weeks for an entire year.

Students who use summer to advance a year upon successful completion should be aware that students mature in their mathematical thinking at different rates, (just like people mature physically at different rates.) Just because your friend is in a higher level of math does not mean you should be too. We frequently see students try to advance to keep up with their peers only to get C's or worse the following year, as they were not ready for the advanced difficulty level.

Please very carefully consider your option of using summer school. It is highly recommended that any student using summer school be prepared to seek extra help immediately in the following year before falling too far behind. Really the only students who should consider using summer school for advancement are the ones with As in their current class and find it to be really easy. Just getting an A is not enough. If you have an A, but spend lots of time studying and putting in work to understand, then summer school is not recommended.

A final note to Parents About Summer School

There is an attitude / belief of many parents that their child can only be competitive and get into the top colleges if they finish through Calculus BC in high school. This is not true and can lead to making advancement decisions that hurt the student more than they help. The math department constantly sees students who are rushed into a math level higher than they are ready for, and then get a bad grade, which hurts their college chances. It is not uncommon to see students take a summer school class to get ahead, then get a C or worse in the next year. Then they repeat it in summer school, followed by another bad year... Please consider whether having your child advance via summer school is the right thing for your child. The comments above regarding summer school should really be considered before you use summer to advance your child.

Last and Final note about summer school math

Unfortunately, the amount of students who take math during summer school to get ahead and then do poorly in their courses at EVHS is increasing. Distance learning and the pandemic is making this worse. If you are still planning to do summer school to advance, please watch this [video re why you should not take summer school](#) (video was made one year ago, but the message still is the same)

Computer Science Academy

Students in the academy must follow a sequence of CS classes through all 4 years. More information can be found on our website

(sites.google.com/esuhsd.org/computerscienceacademy). If a student is enrolled in the academy, all the required CS classes must be taken at EVHS.