

Two things you need to keep in mind about “advanced placement” as an incoming freshman in college: there are courses can you get *credit* for and courses can you simply *exempt*.

All schools are a little different, but for most *credit* means you get grade-neutral credit hours toward your diploma requirements. This means you have fewer classes to take in the long run! *Exempting* generally means you don’t get any credits but can still advance to a higher-level course. In this case, you can spend your credit hours on courses that might be of more interest to you!

Just so we are clear, AP Calculus AB and BC are internationally recognized curricula for which all colleges and universities are familiar. By the time you are accepted into a particular school, you should have searched its website for “AP placement calculus” to see where you would be placed based on your scores. Most likely, you would be given exemption/credit for Calculus I and possibly Calculus II.

Multivariable Calculus is not standardized like AP (not many students take it, so CollegeBoard probably doesn’t think it’s worth the time and effort). There is no standardized test colleges and universities accept. That doesn’t mean you can’t get greater advancement, and this is where you might have to break out your negotiation skills.

Once you have committed to a particular school, you will eventually be given approximately 4.5 seconds with an advisor to plan out your freshman year schedule. Needless to say, this guidance is lame (in general), so you will probably have to figure out things for yourself. Here are a few suggestions:

Become familiar with the course curriculum you are trying to exempt. Every school’s website has a description for every course, so look up the various calculus courses (usually named MATH 2102, MATH 1202, MATH 146033vmw03, etc) and decide which ones you have probably already taken in high school. Here are three examples (from UGA, Ga Tech, and Emory):

**MATH 2500. Multivariable Calculus.**

Calculus of functions of two and three variables including vectors in two and three dimensions, parametric curves, continuity and differentiability of functions of several variables, directional derivatives, Lagrange multipliers, multiple integration, polar coordinates, Green's theorem, and Stokes' theorem.

**MATH 2401. Calculus III**

Multivariable calculus: Linear approximation and Taylor's theorems, Lagrange multiples and constrained optimization, multiple integration and vector analysis including the theorems of Green, Gauss, and Stokes.

**MATH 211. Advanced Calculus (Multivariable Calculus)**

Vectors; multivariable functions; partial derivatives; multiple integrals; vector and scalar fields; Green’s and Stokes’ theorems; divergence theorem.

Make an appointment to meet with the “dean” or “chairperson” of the Mathematics Department or department related to your probable major. At the meeting, present the fact that you have successfully mastered the BC curriculum (as your AP scores will suggest) and have taken a multivariable calculus that covers the same topics as the one described in the universities course description. Let the chairperson know that you would be interested in spending your academic energies on a course that will present new material versus one that will essentially review topics you learned in high school. Offer your portfolio from class as evidence of your mastery of the multivariable calculus.

If you are lucky, the chairperson will make a decision based on this discussion. On the other hand, he or she might suggest that you take an exam to test your mastery. There is no CLEP test for multivariable calculus, but the department might have a final examination it could use instead. If you are willing to give the exam a shot, suggest time to review a little or even the possibility for an open-book exam (remember, it’s been a while since you’ve taken the course and you will have forgotten some things).

Finally, don’t forget to clarify if you are exempting the multivariable course or getting credit for it. Exempting is great, but credit is obviously better.