



## Easing the High School to College Transition

UNIVERSITY OF

Fairbanks North Star Borough School District

# Bridging the Gap in Mathematics

### All students seeking a Bachelor's degree must study mathematics in college.

Most UAF bachelor's students must be successful in at least two semesters of college-level mathematics.

Students majoring in most of the natural sciences and engineering should expect to complete substantially more.

The FNSBSD math curriculum is well aligned with that of UAF.

Students who arrive at UAF with mastery of all topics through Algebra II will be prepared; those with less mastery will not be prepared. Students intending science or engineering majors are much more likely to be successful if they have also completed Precalculus in high school.

### Mathematics education should be continuous for success.

Students should enroll in mathematics courses every semester of high school to prepare for university mathematics.

Even if Algebra II is completed in the junior year, additional math should be taken in the senior year. "Time off" from mathematics study usually results in a loss of knowledge and skills, so that one year without math may actually set a student back two years.

There is a strong correlation between years of high school mathematics study and performance on standardized tests, such as the ACT.

It is much easier for most students to complete UAF mathematics requirements if they do so at the start of their college study.

Delaying mathematics study until near college graduation only makes it harder to succeed without remedial work.

### Pacing of material at the university level is roughly doubled from high school

Many students find adjusting to the rapid pace of college mathematics classes difficult. (UAF's one-semester Math 200 is equivalent to a year-long AP Calculus AB course).

When students go to college they are often advised to re-take the last math class that they took in high school.

### Calculator use is not permitted in many core university courses

Reasons for this vary from philosophical (an instructor wishing to emphasize certain modes of reasoning) to practical (in a class of 50 students, it can be difficult to ensure all students have calculators of equal capability).

While most students who used calculators heavily in high school have no trouble adjusting to this, a few students have become so dependent on calculators that they have trouble.

### Homework is a smaller percentage of a student's grade in college math compared to high school

College tests are typically 80% of the grade, depending on the instructor. Most college homework needs to be done outside of class.

Some faculty assign homework on-line. There are two math labs at UAF (one developmental for courses at or under the Algebra II level). College tutors are present to help with algebra. Students should take advantage of college tutoring.

