

## Vertical Majors and the GE Path

Elaine McDonald, Fall 2003

**Definition of Vertical Major:** any major that has a very specific path that majors have to go through beginning with the first semester of their freshman year in order to have any hope of graduating in four years (or even five).

### **Possible collision of mathematics (or other vertical major) path and GE path as proposed.**

I think care needs to be taken so that students can take the lower division major classes they need and the freshman year experience courses you propose without having to take too many units (these lower division math classes are very demanding in terms of time spent out of class on homework). If they don't get started on the major path we suggest in our department, they are far behind schedule for degree completion.

Math and science majors seem to be different from other majors on campus for two reasons: the comparatively large number of lower division units they take that must come from specific classes in the department; and that these units must be taken in a very specific order.

It's a tight schedule.

For reference, what follows is what we require of mathematics lower division students:

#### **The (ideal) math major:**

Lower Division: Our hope for our math majors is that they take Math 161 (Calc I), Math 211 (Calc II), Math 241 (Calc III) and Math 261 (Calc IV) in their first four semesters here. They cannot be taken concurrently. In addition, the other lower division prerequisite for most math classes is Math 220 (Intro to Higher Math). We recommend that students take it concurrently with Calc III or Calc IV in their sophomore year.

Upper Division: Almost all of our upper division classes require Math 220. So students can't really begin their serious major work until they've had that in their sophomore year (perhaps the end of their sophomore year). Most of our tracks require a specific path of classes that also have each other as pre- or co- requisites. Because we don't offer them every semester (some just every other year) students have to carefully plan out their courses in advance.

**Other math majors:** Probably a good chunk of our majors have to take Precalculus (Math 107) the first semester. A few may even still be in remediation...but it would be very very hard to be a math major if you come to college without college level math skills. These students are under even greater pressure to carefully schedule their courses.