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I have outlined in the essay what I believe to be the strengths of our department. In the course of commenting on each topic, I also address issues of how we got to where we are and where we still need to go. The Department currently has 5.5 FTEs (a structural geologist, a petrologist, a glacial sedimentologist, a paleontologist, and a hydrogeologist, and we share a geomicrobiologist with the Biology Department).

Our introductory courses are topical, rather than survey, courses

Since 1986-87, we have offered four to five topical introductory courses each year. These topical courses are narrow and deep, rather than broad and shallow, giving students a chance to delve into a topic rather than to approach it at a survey level. Course topics are engaging and relevant to students and illuminate geoscience topics and thinking. We do not offer standard survey courses in physical and historical geology, and we do not offer any dead-end courses. Any of the introductory topical courses provides an entré into the major.

We currently offer the following introductory courses: The Geology & Development of Modern Africa, Global Environment Change & Wilderness, Ocean Science, Geology & the Environment, and Geology in the Field. In order to major in geoscience, a student must take one of the topical courses. A student is allowed to take only one of our intro courses. If s/he wishes to take a second course in geoscience, s/he must take a higher-level course.

By department agreement, each intro course covers four topics in one fashion or another: rock forming processes, geologic time, plate tectonics, and Earth systems. We have all agreed that we will take students with a wide variety of backgrounds into our intermediate and upper level courses, provided that they have had some exposure to the four topics listed above.

We made the decision in 1986 to change from the standard physical/historical survey courses to a topical approach for two reasons. First, we had seen a decline in numbers of majors, and we felt we had to do something proactive instead of just wringing our hands about it. Second, we agreed that we would prefer intro courses that were deep rather than broad so that students could tackle interesting problems in some depth, rather than spend their time at the superficial level in a wide range of topics. We believe that the change to topical courses has been very successful for us. Student satisfaction with the courses has been high, and the courses are stimulating to teach. Furthermore, having engaging, topical courses has allowed us to directly address the needs of all students, because 95% of students taking our introductory courses will not be career geoscientists. Our aim has been to offer interesting, exciting, and relevant introductory courses so that students will leave the course as better informed citizens, and we think we have succeeded.

The only drawback has been coping with the very wide range of backgrounds that students bring to intermediate and upper level courses. In 2001-02, we prepared an 8-sheet booklet outlining the Basics of Geology that every student in intermediate and upper level geology courses is expected to know and for which each student will be held accountable. These items include rock and mineral identification, rock forming processes, geologic time, basic plate tectonic processes, and Earth systems. Every course in the Department is supposed to be taught with the assumption that all students in the class have used the material to refresh their memories. While everyone in the Department (including the students) have viewed this as desirable and necessary, enforcement of what we adopted as Department policy has been uneven cross courses in the Department.

Our introductory courses are small (16-30 students), and some are writing intensive or field intensive. The yield of majors from these courses has been impressive over the years – it is not uncommon for us to net 3-5 majors from an intro course as small as 16-20.

Our curriculum is structured to encourage people to major in geoscience even if they do not have geoscience career plans

Too many students see a major in science as appropriate only for those who have career interests in science, although most students view history or philosophy, for example, as appropriate majors for anyone even though most

of those who major will be neither historians nor philosophers. Our department has always believed in promoting a major in geoscience as an appropriate liberal arts major. Over the years, we have had many people go on to earn graduate degrees in business, law, medicine, public policy, and so forth. We, in fact, encourage it, and our curriculum is specifically designed with this in mind.

We believe that students who study geoscience at the undergraduate level should have experience in the major subdisciplines of geoscience and should not specialize. Hence, we do not have different kinds of "tracks" through the geoscience concentration. For those who do not go on to graduate study in geoscience, this broad background is crucial, because they will likely not be filling in any holes in their backgrounds in the future. For those going on to graduate school, we also believe that a broad background is essential, because most students specialize, rather than broaden, at the graduate level. For most students, if they haven't had a basic course as an undergraduate, they won't have it as a grad student. We use a broad offering of interesting elective courses to allow students a limited amount of specialization.

We currently require courses in mineralogy, sedimentary geology, petrology, paleontology, hydrogeology, and structural geology for a major. We feel that all are particularly important given the fact that we do not have survey courses at the introductory level. What any individual students misses in terms of exposure to topics typically covered in physical and historical geology has, we believe, been integrated into our required courses. We use elective courses to provide opportunities for students to study other subdisciplines as well.

The basic courses required for a major have little verticality, and students take the courses in different orders. Most intermediate level courses consequently are composed of students bringing a wide variety of preparations. We are willing to accept that challenge in order to allow our students the flexibility of starting a major during sophomore year and of going abroad for study.

While many schools require a year each of calculus, chemistry, and physics of their geology majors, we have consistently chosen not to require a full suite of courses in the supporting sciences and math for a major in geoscience. Our rationale is consistent with wanting to make a major in geoscience appropriate for those whose career directions are not in the geosciences. For those who want to pursue geoscience as a career, we have chosen the route of advising to stress the importance of taking courses in all of the supporting sciences before entering graduate school. Our requirement is that all majors take a year of math *or* physics *or* chemistry *or* biology *or* computer science. We feel that this was an appropriate compromise between requiring no supporting sciences and stressing the importance and utility of a strong background in the supporting sciences and math.

We require a senior project of all majors

Since the late 1980s, we have required a senior project of all of our majors. Some students do typical field or laboratory research projects, others develop curriculum modules for pre-college courses, and still others have done innovative interdisciplinary projects integrating geoscience and chemistry, archaeology, art, public policy, biology, and so on. Our primary aim is to have students select a senior project topic that will be a culminating experience for their geoscience education *and* be a project that relates to their own interests and career goals. This has been a highly successful aspect of our department, because students work on something they're genuinely interested in.

We hold a GSA-style presentation session during the evening each spring at which all students give formal presentations of their senior project. Faculty from other departments attend. Our students' senior project presentations are well-known on campus for being professional and impressive.

We have strong interdisciplinary connections

We offer cross-listed, interdisciplinary courses with the Archaeology, Africana Studies, History, and Biology departments. We are one of a very few schools to offer an undergraduate major in Geoarchaeology. The Department has also been a major contributor to the interdisciplinary minor in Environmental Studies, and we have made a conscious effort to support the program through the courses we teach and the ways in which we teach our courses. We also currently share a geomicrobiologist with the Biology Department, and he teaches a course in our department on geomicrobiology as well as advising senior projects. We have also just changed the name of our department from the Department of Geology to the Department of Geosciences to reflect the broad range of courses that we teach and the topics that we cover both in courses and in research.