

Goal 1 Defining and Positioning the Geoscience Program

The department mission statement emphasizes three themes, Earth Systems Science, Human-Environmental Interactions, and Geo-Information Science. These themes allow students to focus on areas of research such as paleo ecology studies, coastal processes, hydrology and water resources, as well as biogeography, wetland ecology and natural systems in the freshwater and near shore environments, urban development and sustainability issues related to land-use change, sea level rise, climate change, and maintaining a balance between natural ecosystems and urban development. Another theme, Geo-Information Science represents a strong tradition of mapping, modeling and analyzing environments and human development across the globe.

Collectively the department of Geosciences contributes strongly towards two of the pillars of FAU's strategic plan, Ocean Science and Environmental Science, and Sensing and Smart Systems. The department makes strong contributions to the Environmental Science program, and the Coastal side of the Marine Science program that is emerging from our affiliation with Harbor Branch.

Goal 2 Streamlining the Geoscience Programs

The Department has started the process of reorganizing the structure of department committees around the interdisciplinary field of Geoscience rather than the individual disciplines of Geography and Geology that formed the Geoscience department. This process was started several years ago at the Ph.D. level, but has not been carried out at the other degree levels. In the spring of 2015, the department formed a single undergraduate committee and single graduate committee, rather than have discipline specific committees to review curriculum and programs.

We now have a department wide undergraduate committee and a graduate committee. These committees address all issues as Geoscience committees, rather than as geography and geology committees. The two committees have met and have made recommendations for moving the integration of the two sides of the department forward.

Developing the MS in Geoscience Degree: 2015-2016

A new Geoscience MS degree was proposed and approved at the department level several years ago, but it was not carried forward. Last fall a new market survey was conducted, and a student survey will be conducted in the fall of 2015. The pre-proposal documents will be prepared by Associate Dean Charles Roberts with assistance from the Graduate committee, starting in the summer of 2015.

On the recommendation of the Graduate committee the department recently voted to terminate admissions to the MA in Geography and the MS in Geology once the MS in Geoscience is an approved degree and can admit students. This degree will be attractive to the students in the former Geography MA degree because it is a science degree, the market survey suggests it will be attractive to the students in the former Geology degree, and it will draw new students that could not enter the program in the past because of the stringent requirements of the

Geology MS degree. It will be a multidisciplinary earth science degree, especially suitable for careers in the south Florida workplace.

Developing the Bachelors in Geoscience Degree:

The department currently has four bachelor's degrees. These are a BA and BS in Geography and a BA and BS in Geology. The undergraduate committee has been charged by the department with realigning the department's undergraduate programs by creating a hybrid BS in Geoscience, which would be a multidisciplinary degree that spans the topical areas covered in the department.

The outside review committee recommended maintaining the BS in Geology, so the new Geoscience degree would provide a less restrictive and less credit intensive earth science degree designed for students and emphasizing skill sets needed for the Florida workforce.

Currently the undergraduate Geography BA and BS degrees are being converted to online degrees. These degrees should attract new majors, especially from the south Florida region where GIS positions are in great demand and where commuting is difficult due to the long and narrow shape of our megalopolis. The Geoscience program has the most extensive GIS curriculum in the state of Florida and compares well with all peer institutions. Additional human and physical geography and geology courses are also online, and it is anticipated by Cel that we will have an online degree program within a year, and a certified online Quality Matters degree program within 3 years.

The weak point then is that the remaining optional classes need to be low enrollment, research intensive courses, so that students get the most out of the limited contact with professors and graduate students. Four strategies have been utilized by faculty:

- 1) **DTD Courses:** So far a series of four courses have been developed in a two course sequence that engage undergraduates in a research intensive experience. The first course, Research 1, is taught in the classroom. A common rubric is utilized to assess the impact of the Research 1 course on the students in the other three courses where advanced research projects are utilized. In the first years' experience, two of the five students that took the sequence won awards in poster contests in professional conferences within six months of completing the courses. It is anticipated that the department will develop more DTD curriculum in its courses. Dr. Hindle, Dr. Root, Dr. Markwith and Dr. Roberts have been involved in teaching these courses over the last two years.
- 2) **Academic Service Learning Components:** Dr. Hindle has already developed internships through the Weppner center, and it is planned that similar service learning projects be developed in other courses and other areas in the department. This will particularly help the GIS students who are expected to demonstrate hours of guided internship and community service for professional certification after they graduate. Dr. Diane Owen and Dr. Tobin Hindle employ internships through the Weppner center in their courses and have offered to help develop this in our environmental courses and other areas in the department. Dr. Roberts will take the lead on this as a way of learning more about building service learning into college curriculum.

3) Field Courses

Field courses play an important role in a geoscience program at both the undergraduate level and at the graduate level. Having so many courses online only reinforces the need for more small classes with field research components. Most if not all B.S. in Geology programs have some field course requirements.

The undergraduate committee has been charged with revisiting the field courses. The committee is looking at learning objectives for such courses, then they will look at department interests in offering field curriculum to achieve those objectives, and they will propose courses to be developed for the Geoscience department as a whole. A review of the existing field courses and recommended modifications to existing field courses will be proposed as well.

4) GIS Club

The department clubs have faded and need revitalization, particularly the undergraduate club. The new GIS Club will be sponsored by the Associate Dean, Charles Roberts, starting in May of 2015. This club will reach out to online students as well as those on campus, and will work with CeL to develop community building techniques for the off campus students as well as those that can attend on campus events.

Goal 3 Marketing the Geoscience Programs

1. Indirect Marketing through the Web: The program reviewers recommended that the Department should try to make its web presence less static and include testimonials from students, alumni and key faculty as to why prospective students should consider FAU's Geoscience programs. Dr. Hindle agreed to work on this aspect of the department, and a plan to collect names of graduates who could develop testimonials was developed.

2. Recruitment at the High School Level:

Dr. Briggs will explore the possibility of developing a service learning course using Geoscience graduate students who want to develop teaching skills and deploy them in high schools that participate in FAU's Science Olympiad, where there is a clientele for several earth science exercises we offer each year.

3. Recruitment above the High School Level

The department has had a limited marketing strategy, focused primarily on outreach at professional conferences that would mainly attract graduate applicants and particularly Ph.D. applicants. This has met with some success.

The Geoscience degrees remain largely obscure at the University. A plan to better promote the programs at all levels is being proposed.

The Graduate College has determined that other universities are experiencing success at recruitment drives at graduate fairs held at the State Universities, and has offered to help FAU Colleges promote their programs at these venues.

A survey was conducted of the State Colleges by Dr. Roberts as the Associate Dean of Graduate Studies. It was determined that no Geoscience degrees are yet being offered by the

State Colleges in the state of Florida. There is no clear target programs for marketing graduate degrees or developing articulation agreements at the four year degree level. It is recommended that some general materials be developed, emphasizing workforce data on Geoscience careers in south Florida. Information gleaned from last fall's market survey of the Geoscience workforce at the undergraduate and Masters levels will be utilized to develop these materials.

The next survey will look at AA degrees. A plan will be developed to market the Geoscience undergraduate degrees to the State Colleges. Articulation agreements for the BS in Geology, BS in Geoscience and BS in Geography should be explored, and marketing materials emphasizing careers in the Geosciences should be developed, since these career options typically are unknown to students.

Another marketing venue is through the VA centers. There are already significant numbers of current military enrolled in our online GIS curriculum and we will soon be in a position to market online degrees as well as online certificates. Current military and veterans may find Geoscience degrees and GIS curriculum attractive, but the program needs to be described, advertised, and promoted the way other universities have done through their armed forces connections.