

# COLLEGE OF ARTS AND SCIENCES

UNIVERSITY OF SOUTH FLORIDA - 2003/2004 UNDERGRADUATE CATALOG

## • GEOLOGY (GLY)

The Department of Geology offers programs leading to Bachelor of Arts, Bachelor of Science, Master of Science, and Doctor of Philosophy degrees. Geology is one of the broadest of all sciences because of its dependence on fundamentals of biology, chemistry, mathematics, and physics as applied to the study of the earth. As a result, undergraduate students are expected to obtain a broad background in the other sciences as well as a concentration in geology.

The Bachelor of Science degree program provides the student with a hands-on foundation in the fundamentals of the geosciences. The Bachelor of Arts program is designed primarily for the liberal arts student who has an interest in the subject but who is not preparing for a career in the field, or for the pre-professional school student. A student who elects the B.A. program and decides to pursue the geology profession or attend graduate school will need at least physics and field geology in his/her program.

The graduate program in geology allows the student to pursue advanced studies in nearly all areas of geology. As a result of faculty interests and geographic location, several geologic subdisciplines are emphasized, including applied geophysics, coastal geology, geomorphology, geochemistry, hydrogeology, paleontology, and petrology.

### Prerequisites (State Mandated Common Prerequisites)

Students wishing to transfer to USF should complete the A.A. degree at the community college. Some courses required for the major may also meet General Education Requirements thereby transferring maximum hours to the university. If students transfer without an A.A. degree and have fewer than 60 semester hours of acceptable credit, the students must meet the university's entering freshman requirements including ACT or SAT test scores, GPA, and course requirements.

The transfer student should also be aware of the immunization, foreign language, and continuous enrollment policies of the university.

Students should complete the following prerequisite courses listed below at the lower level prior to entering the University. If these courses are not taken at the community college, they (or their equivalents) must be completed before the degree is granted. Unless stated otherwise, a grade of C is the minimum acceptable grade.

- CHM 1045/1045L General Chemistry I (with lab)  
or CHM 1045C or CHM 1045E
- CHM 1046/1046L General Chemistry II (with lab)  
or CHM 1046C or CHM 1046E
- GLY 2010C Introduction to Physical Geology
- MAC 2311 Calculus I
- PHY 2048C General Physics and Laboratory I  
or PHY 2048/2048L or PHY 2053C
- PHY 2049C General Physics and Laboratory II  
or PHY 2049/2049L or PHY 2054C

The choice physics sequence depends on the area of geology specialization.

## Requirements for the Major in Geology (BA)

1. Geology courses (38 hours):
  - a. Introductory Sequence\* (4 hours):
    1. One course chosen from GLY 2010, GLY 2030, GLY 2038, GLY 2040, and OCE 2001 (3)
    2. GLY 2015L (1)  
\*Transfer students who have taken GLY 2010C and GLY 2100C or the equivalent will be deemed to have met the introductory sequence requirements. However, ALL students are strongly encouraged to take GLY 2015L, as this course will greatly facilitate success in the upper-level offerings.

- b. Junior-level sequence (28 hours):
  - GLY 3311C The Solid Earth: Petrology and Geochemistry (4)
  - GLY 3420C The Solid Earth: Plate Tectonics and Earth Structure (4)
  - GLY 3552C Sedimentary Record 1: Sedimentary Processes and Petrology
  - GLY 3720C Fluid Earth 1: Basic Principles (4)
  - GLY 4104C Sedimentary Record 3: Paleontology and Earth Evolution (4)
  - GLY 4554C Sedimentary Record 2: The Earth's Surface (4)
  - GLY 4822C Fluid Earth 2: Hydrogeology
- c. Senior-Level Sequence (12 hours):
  - GLY 4145 Computational Geology (3)
  - GLY 4921 Geocommunications (3)
2. Supporting Courses for the B.A. Degree (24 hours):
  - CHM 2045, 2045L, CHM 2046, 2046L
  - MAC 2241, 2242 or MAC 2311, 2312 or MAC 2281, 2282Two courses in biology or physics with labs selected from the following: BSC 2010 and 2010L, BSC 2011 and 2011L, PHY 2053 and 2053L, PHY 2054 and 2054L, PHY 2048 and 2048L, PHY 2049 and 2049L

## Requirements for the Major in Geology (BS)

1. Geology courses (44 hours):
  - a. Introductory Sequence\* (4 hours):
    1. One course chosen from GLY 2010, GLY 2030, GLY 2038, GLY 2040, and OCE 2001 (3)
    2. GLY 2015L (1)  
\*Transfer students who have taken GLY 2010C and GLY 2100C or the equivalent will be deemed to have met the introductory sequence requirements. However, ALL students are strongly encouraged to take GLY 2015L, as this course will greatly facilitate success in the upper-level offerings.
  - b. Junior-level sequence (28 hours):
    - GLY 3311C The Solid Earth: Petrology and Geochemistry (4)
    - GLY 3420C The Solid Earth: Plate Tectonics and Earth Structure (4)
    - GLY 3552C Sedimentary Record 1: Sedimentary Processes and Petrology
    - GLY 3720C Fluid Earth 1: Basic Principles (4)
    - GLY 4104C Sedimentary Record 3: Paleontology and Earth Evolution (4)
    - GLY 4554C Sedimentary Record 2: The Earth's Surface (4)
    - GLY 4822C Fluid Earth 2: Hydrogeology
  - c. Senior-Level Sequence (12 hours):
    - GLY 4145 Computational Geology (3)
    - GLY 4921 Geocommunications (3)
    - and either:
      - GLY 494XL Practical and Applied Geology (6)  
Must take at least one each of computational, field, and laboratory experience
- or,
  - A Geologic Field Course and/or Summer Research Experience, as defined and approved by the Department Undergraduate Committee. Non-traditional research experiences (i.e., NSF-supported Research Experiences for Undergraduates summer programs) are acceptable provided the student concurrently registers for six hours of Geologic Field Studies (GLY 4780) to meet credit hour requirements, and their research supervisor provides the Undergraduate committee with an assessment of student activities during the program.

## 2. Supporting Courses for the BS Degree (28 hours):

- MAC 2281, MAC 2282 (recommended) **or** MAC 2311, MAC 2312
- BSC 2010, 2010L
- CHM 2045, 2045L, CHM 2046, 2046L
- PHY 2048, 2048L, PHY 2049, 2049L (recommended) **or** PHY 2053, 2053L, 2054, 2054L

### **Liberal Arts Requirements**

All students are required to complete the University's Liberal Arts Requirements.

### **Free Electives (19-25 hours)**

The student will choose, in consultation with his/her geology advisor, such courses in the natural sciences that support his/her major interest in the field of geology. Courses in computer programming and additional mathematics are of particular value. Those students who anticipate continuing for a doctorate in graduate school are encouraged to take a foreign language, preferably French, German, or Russian.

D and F grades earned in attempting to satisfy major requirements will be used in calculating the major GPA.

### **Geology Honors Program**

The purpose of the Honors Program is to provide a select group of undergraduate geology majors an opportunity to undertake an intensive, individualized research experience. The culmination of the program is the completion and presentation of an honor's thesis. To apply, interested students should contact the geology undergraduate advisor during the second semester of the student's junior year. Admission to the program requires a GPA of 3.5 in the major and an overall GPA of 3.2.

### **Requirements for the Minor in Geology**

16 credit hours are required, which must include the completion of the introductory sequence courses (4 hours) and any three of the Junior-level sequence courses (12 hours).

### **Teacher Education Programs**

Prospective elementary and secondary school teachers desiring to teach science should include basic courses in geology and related sciences as part of their curriculum.