

DOCUMENTS OF THE GENERAL FACULTY

**PROPOSED CHANGES TO THE BACHELOR OF SCIENCE IN GEOLOGICAL SCIENCES,
OPTION I: GENERAL GEOLOGY IN THE JACKSON SCHOOL OF GEOSCIENCES CHAPTER IN
THE UNDERGRADUATE CATALOG 2016-2018**

Dean Sharon Mosher in the Jackson School of Geosciences has filed with the secretary of the Faculty Council the following changes to the *Undergraduate Catalog, 2016-2018*. The secretary has classified this proposal as legislation of *exclusive* interest to only one college or school.

The Committee on Undergraduate Degree Program Review recommended approval of the changes on January 6, 2016, and forwarded the proposal to the Office of the General Faculty. The Faculty Council has the authority to approve this legislation on behalf of the General Faculty. The authority to grant final approval on this legislation resides with UT System.

If no objection is filed with the Office of the General Faculty by the date specified below, the legislation will be held to have been approved by the Faculty Council. If an objection is filed within the prescribed period, the legislation will be presented to the Faculty Council at its next meeting. The objection, with reasons, must be signed by a member of the Faculty Council.

To be counted, a protest must be received in the Office of the General Faculty by January 20, 2016.



Hillary Hart, Secretary
General Faculty and Faculty Council

The current foreign language requirement for the BS GeoSci Option I, II and III degree plans has been incorporated into a new Language or Culture Electives requirement. This new requirement requires 6 semester hours of coursework in a single foreign language or in coursework recognized as a study of cultures on a domestic or global scale. It is the opinion of the Jackson School faculty that the proposed changes address the need for increased flexibility in the degree plan while maintaining an inclusive curriculum.

Add Computational/Data Analysis Course

Addition of new Geological Sciences course GEO 325H Computational Geosciences (*proposed course number; pending approval through CIM*) in parallel with existing course GEO 325J Programming in Fortran and Matlab, which is a major requirement for the BS GeoSci Option II: Geophysics degree. This new course is intended to provide a foundation for scientific computation and data analysis required for upper division coursework across all BS GeoSci degree options.

Standardize Technical Elective Requirement

To increase flexibility within the degree plan in order to accommodate the increasing depth and breadth of geoscience disciplines available to undergraduates and to encourage students to identify a 15-18 hour minor in a field of study outside of the geosciences. The revised BS Technical Elective requirement for BS GeoSci Option I, II and III will now require a) four courses (12 semester hours) from an approved list with no more than two lower-division courses outside of geological sciences. This list will be supplemented by recommended concentrations of geological sciences courses that, together with four recommended technical electives, will guide students who wish to pursue a specific study areas in geological sciences. Course concentrations are expected to better prepare students for independent research opportunities while undergraduates, and to provide improved preparation for graduate study in specific areas of the geological sciences

Example Course Concentration

Area: Marine Geosciences

- Technical Elective courses (4 total, 2 lower-division (maximum))
 - BIO 311C and BIO 311D
 - MNS 352 and MNS 367K
 - Other course options include: upper-division biology, marine science, physics and chemistry
- Concentration Courses (4-6 total; determined by each discipline faculty)
 - GEO 338C Marine Geology
 - GEO 338T Marine Tectonics (writing flag)
 - 348K Marine Field Cruise
 - At least of the following: GEO 346C, 468K, 376E, 339T, 340T, 327G, 476W, or independent GEO research course

3. THIS PROPOSAL INVOLVES (Please check all that apply)

- | | | |
|--|---|--|
| <input checked="" type="checkbox"/> Courses in other colleges | <input type="checkbox"/> Courses in proposer's college that are frequently taken by students in other colleges | <input type="checkbox"/> Flags |
| <input type="checkbox"/> Course in the core curriculum | <input checked="" type="checkbox"/> Change in course sequencing for an existing program | <input checked="" type="checkbox"/> Courses that have to be added to the inventory |
| <input type="checkbox"/> Change in admission requirements (external or internal) | <input checked="" type="checkbox"/> Requirements not explicit in the catalog language (e.g., lists of acceptable courses maintained by department office) | |

4. SCOPE OF PROPOSED CHANGE

- a. Does this proposal impact other colleges/schools? Yes No
If yes, then how?
- b. Do you anticipate a net change in the number of students in your college? Yes No
If yes, how many more (or fewer) students do you expect?

- c. Do you anticipate a net increase (or decrease) in the number of students from outside of your college taking classes in your college? Yes No
If yes, please indicate the number of students and/or class seats involved.
- d. Do you anticipate a net increase (or decrease) in the number of students from your college taking courses in other colleges? Yes No
If yes, please indicate the number of students and/or class seats involved.

If 4 a, b, c, or d was answered with yes, please answer the following questions. If the proposal has potential budgetary impacts for another college/school, such as requiring new sections or a non-negligible increase in the number of seats offered, at least one contact must be at the college-level.

How many students do you expect to be impacted?

Impacted schools must be contacted and their response(s) included:

Person communicated with:

Date of communication:

Response: Pending

- e. Does this proposal involve changes to the core curriculum or other basic education requirements (42-hour core, signature courses, flags)? If yes, explain:

If yes, undergraduate studies must be informed of the proposed changes and their response included:

Person communicated with:

Date of communication:

Response:

- f. Will this proposal change the number of hours required for degree completion? If yes, explain:

5. COLLEGE/SCHOOL APPROVAL PROCESS

Program approval date: May 6, 2015

Dean's Scholars approval date (for changes to Option II): N/A

College approval date: May 6, 2015

PROPOSED NEW CATALOG TEXT:

BACHELOR OF SCIENCE IN GEOLOGICAL SCIENCES

The Bachelor of Science in Geological Sciences (~~BSCGeoSci~~) serves as a professional degree for students planning careers as geologists, geophysicists, or teachers, as well as for those planning to pursue graduate work in the geosciences or a profession such as law or business. Careers are available in the petroleum and related energy industries, resource evaluation, mineral exploration, geologic hazard monitoring, environmental control and reclamation, building foundation evaluation, groundwater contamination studies, soil testing, regional planning, watershed management, climate modeling, and college or secondary school teaching. Graduates may also work in state or federal agencies, in universities or museums, with consulting firms, or with service companies to the energy and mineral industries.

Degree requirements are divided into three categories: university-wide undergraduate degree requirements ~~A plan of study for the Bachelor of Science in Geological Sciences includes courses required by~~ (the University Core Curriculum) and flag requirements, prescribed work for the degree, and ~~required and elective major requirements. courses in geological sciences (preceded by their prerequisite courses).~~ Taken together, these courses make up an option, a degree plan with a particular concentration or emphasis. Thus, ~~individuals~~ students may develop intellectually challenging yet ~~quite~~ different plans of study according to their personal interests and goals.

Students seeking the Bachelor of Science in Geological Sciences degree must choose one of four options-- I: General Geology, II: Geophysics, III: Hydrogeology, or V: Teaching. (Option IV: Environmental Science and Sustainability is no longer offered.)

Additional Requirements Specific to the BS Geological Sciences, Opts I, II & III

Thirty-six semester hours of upper- division coursework must be completed in residence at the University. At least eighteen of these hours must be in geological sciences and at least twelve of the thirty-six hours must be outside geological sciences.

A total of 126 hours of coursework including core, prescribed and major work.

In addition to the prescribed work outlined below, all students must complete the University's core curriculum (p. 23). In some cases, a course that is required for the BSGeoSci may also be counted toward the core curriculum; these courses are identified below. In the process of fulfilling the core curriculum and other degree requirements, all students are expected to complete the following Skills and Experience flags:

1. ~~Writing: two flagged courses beyond Rhetoric and Writing 306 or its equivalent~~
2. ~~Quantitative reasoning: one flagged course~~
3. ~~Global cultures: one flagged course~~
4. ~~Cultural diversity in the United States: one flagged course~~
5. ~~Ethic and leadership: one flagged course~~
6. ~~Independent inquiry: one flagged course~~

A course in one prescribed work area may not also be used to fulfill the requirements of another prescribed work area; the only exception to this rule is that a course that fulfills any other requirement may also be used to fulfill a flag requirement if the course carries that flag, unless otherwise specified.

Prescribed Work

BS Geological Sciences Option I, II and III Common to All Options

1. ~~*Foreign Language:* Courses 506 and 507 (or the equivalent) in a single foreign language, or as much of this coursework as required by the student's score on the appropriate language placement test. Students in the teaching option must fulfill a different foreign language requirement, given with the other option requirements. For students who enter the University with fewer than two high school units in a single foreign language, the first two semesters in a language may not be counted toward the total number of semester hours required for the degree.~~
2. ~~Upper division Coursework: Thirty six semester hours of upper division coursework must be completed in residence at the University. For students in Options options I, II, and III, at least eighteen of these hours must be in geological sciences and for students in Option option V, at least twelve hours must be in geological sciences. (Option IV: Environmental Science and Sustainability is no longer offered.) For all options, at least twelve of the thirty-six hours must be outside geological sciences.~~
 1. Mathematics 408C and 408D; or 408K, 408L, and 408M. Mathematics 408C or 408K also meets the mathematics requirement of the core curriculum. Algebra courses at the level of Mathematics 301 or the equivalent may not be counted toward the total number of semester hours required for the degree.
 2. Physics 301, 101L, 316, and 116L; or Physics 303K, 103M, 303L, and 103N.
 3. Chemistry 301, and 302, and 204. Together, the courses that meet requirements 2 and 3 also meet parts I and II of the science and technology requirement of the core curriculum.
 4. Geological Sciences 401 or 303, 416K, 416M, 420K, and 428.
 5. Technical Electives: Twelve semester hours of approved science and engineering courses offered outside of the GEO field of study with no more than 6 semester hours of lower-division courses. These courses may be coordinated with additional recommended GEO elective courses to form a geoscience course concentration. A list of approved technical elective courses and geoscience course concentrations is available in the JSG Advising Office.
 6. Language or Culture Electives: Six semester hours of coursework in a foreign language or approved coursework recognized as a study of cultures on a domestic or global scale. A list of approved cultural courses is available in the JSG Advising Office. Courses that fulfill this requirement must be in addition to courses counted toward the core curriculum or flag requirements.

Major Requirements

Option I: General Geology

1. Geological Sciences 405, 325H, and 426P.
2. Six semester hours of approved field and/or research coursework. This requirement may be met by Geological Sciences 660A and 660B. Field/research requirement courses should be completed during the same summer semester.
3. Fifteen additional hours of approved upper division coursework in geological sciences.

1. ~~Mathematics 408C and 408D; or 408K, 408L, and 408M. Mathematics 408C or 408K also meets the mathematics requirement of the core curriculum. Algebra courses at the level of Mathematics 301 or the equivalent may not be counted toward the total number of semester hours required for the degree.~~
2. ~~Physics 301, 101L, 316, and 116L; or Physics 303K, 103M, 303L, and 103N.~~
3. ~~Chemistry 301, 302, and 204. Together, the courses that meet requirements 2 and 3 also meet parts I and II of the science and technology requirement of the core curriculum.~~
4. ~~Geological Sciences 401 or 303, 404C or 405, 416K, 416M, 420K, 426P, 428, 660 (completed in residence), and enough additional approved upper division coursework in geological sciences to make a total of fifty two semester hours.~~
5. ~~Twelve semester hours chosen from a list of approved courses in aerospace engineering, architectural engineering, astronomy, biology, chemical engineering, chemistry, civil engineering, computer science, engineering mechanics, geography, marine science, mathematics, mechanical engineering, petroleum and geosystems engineering, and physics. Geological Sciences 325K may also be counted toward requirement~~

This requirement is intended to function as an unspecified minor. Courses used to fulfill the requirement do not have to be taken in the same field of study, but they should form a self-reinforcing sequence related to geological sciences. Courses not on the list of approved courses will be considered upon petition to the Jackson School of Geoscience Student Services Office.

6. ~~Enough additional coursework to make a total of 126 semester hours.~~

Suggested Arrangement of Courses

BS Geological Sciences, Option I: General Geology

First Year

<u>First Term</u>	<u>Hours</u>	<u>Second Term</u>	<u>Hours</u>
GEO 401 or 303	4	GEO 405	4
M 408C	4	M 408D	4
CH 301	3	CH 302	3
UGS 302 or 303	3	E 316L, M, N or P	3
RHE 306	3	GEO Mentor Course	0
	17		14

Second Year

<u>First Term</u>	<u>Hours</u>	<u>Second Term</u>	<u>Hours</u>
GEO 416K	4	GEO 420K	4
GEO 416M	4	GEO 325H*	3
PHY 303K	3	PHY 303L	3
PHY 103M	1	PHY 103N	1
HIS 315K	3	Visual/Perf Arts	3
	15		14

Third Year

<u>First Term</u>	<u>Hours</u>	<u>Second Term</u>	<u>Hours</u>
GEO 428	4	GEO 426P	4
GEO UDE	3	Tech Elective	3
Tech Elective	3	GEO UDE	3
HIS 315L	3	UD Elective	3
Language or Culture	3		

	<u>16</u>		<u>13</u>
Summer			
<u>GEO 660A</u>	<u>3</u>		
<u>GEO 660B</u>	<u>3</u>		
	6		
Fourth Year			
First Term	Hours	Second Term	Hours
<u>GEO UDE</u>	<u>3</u>	<u>GEO UDE</u>	<u>4</u>
<u>GEO UDE</u>	<u>3</u>	<u>Tech Elective UD</u>	<u>3</u>
<u>Tech Elective UD</u>	<u>3</u>	<u>Social/Behavioral Sci.</u>	<u>3</u>
<u>GOV 310L</u>	<u>3</u>	<u>GOV 312L</u>	<u>3</u>
<u>Language or Culture</u>	<u>3</u>	<u>UD Elective</u>	<u>3</u>
	15		16
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<i>Total Credit Hours 126</i>			