

## DOCUMENTS OF THE GENERAL FACULTY

**PROPOSED CHANGES TO THE BACHELOR OF SCIENCE IN GEOLOGICAL SCIENCES,  
OPTION III: HYDROGEOLOGY 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



Geosciences, Department of Geological Sciences has expanded the number of courses that provide for and will satisfy the field experience requirement of a geological sciences degree. Additionally, growth in related degree programs such as the BS, Environmental Science (JSG, CNS, CLA) and BS, Geosystems Engineering and Hydrogeology (JSG+ENGR) have further increased demand for introductory and summer field courses. These courses have been made available to students to satisfy field experience requirements by petition for a few years and therefore are being proposed for addition to the 2016-18 catalog.

#### Foreign Language Requirement

The current foreign language requirement for the BS GeoSci Option I, II and III degree plans has been incorporated into the degrees 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 to be offered Spring 2017*) 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:****Option III: Hydrogeology**

- ~~1. Mathematics 408C and 408D, or 408K, 408L, and 408M; and 427K. 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 303K, 103M, 303L, and 103N.~~
  - ~~3. Chemistry 301, 302, and 204.~~
  - ~~4. Biology 311C. 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; Biology 311C may also be used to meet part II of that requirement.~~
  - ~~5. The following coursework in geological sciences:
 
    - ~~a. Geological Sciences 401 or 303, 416K, 416M, 420K, 428, 476K, 476M, and 376S~~
    - ~~b. Six semester hours of field experience which must include Geological Sciences 376L and three additional hours selected from one of the following: Geological Sciences 660A, 660B, or 679J, or other appropriate course approved in advance by the Jackson School of Geoscience (JSG) Student Services Office.~~
    - ~~c. Three upper division semester hours in hydrogeology or a related area, chosen from Geological Sciences 325K, 376E, 377P, 327G, or other approved course~~
    - ~~d. Nine additional semester hours of upper division coursework in geological sciences.~~~~
  - ~~6. Six semester hours chosen from a list of approved courses in biology, chemistry, civil engineering, geography, marine science, mathematics, mechanical engineering, and petroleum and geosystems engineering. A list of approved courses is available in the JSG Student Services Office.~~
  - ~~7. 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 JSG Student Services Office.~~
  - ~~8. Enough additional coursework to make a total of 126 semester hours.~~
1. Mathematics 427J.
  2. Chemistry 204.
  3. Geological Sciences 325H, 476K, 476M, 376S.
  4. Geological Sciences 376L and an additional three semester hours of approved field experience coursework. This requirement may be met by Geological Sciences 660A/B, 476W, 377K or 679J. Other off-campus hydrogeology field/research courses will be considered upon petition submitted to the Jackson School prior to that semester registration period. Field/research requirement courses should be completed during the same summer semester.
  5. Nine additional semester hours of approved upper-division coursework in geological sciences.

**Suggested Arrangement of Courses****BS Geological Sciences, Option III: Hydrogeology****First Year**

<b>First Term</b>	<b>Hours</b>	<b>Second Term</b>	<b>Hours</b>
<u>GEO 401 or 303</u>	<u>4</u>	<u>E 316L, M, N or P</u>	<u>3</u>
<u>M 408C</u>	<u>4</u>	<u>M 408D</u>	<u>4</u>
<u>CH 301</u>	<u>3</u>	<u>CH 302</u>	<u>3</u>
<u>UGS 302 or 303</u>	<u>3</u>	<u>CH 204</u>	<u>2</u>
<u>RHE 306</u>	<u>3</u>	<u>HIS 315K/L</u>	<u>3</u>
	<b><u>17</u></b>		<b><u>15</u></b>

**Second Year**

<b>First Term</b>	<b>Hours</b>	<b>Second Term</b>	<b>Hours</b>
<u>GEO 416K</u>	<u>4</u>	<u>GEO 420K</u>	<u>4</u>
<u>GEO 416M</u>	<u>4</u>	<u>M 427J</u>	<u>4</u>
<u>PHY 303K</u>	<u>3</u>	<u>PHY 303L</u>	<u>3</u>
<u>PHY 103M</u>	<u>1</u>	<u>PHY 103N</u>	<u>1</u>
<u>HIS 315K/L</u>	<u>3</u>	<u>GEO 325H*</u>	<u>3</u>
	<b><u>15</u></b>		<b><u>15</u></b>

**Third Year**

<b>First Term</b>	<b>Hours</b>	<b>Second Term</b>	<b>Hours</b>
<u>GEO 428</u>	<u>4</u>	<u>GEO 476M</u>	<u>4</u>
<u>GEO 476K</u>	<u>4</u>	<u>Tech Elective</u>	<u>3</u>
<u>Tech Elective</u>	<u>3</u>	<u>GOV 312P</u>	<u>3</u>
<u>GOV 310L</u>	<u>3</u>	<u>GEO UDE</u>	<u>3</u>
		<u>UD Elective</u>	<u>3</u>
	<b><u>14</u></b>		<b><u>16</u></b>

**Summer**

<u>GEO 376L</u>	<u>3</u>
<u>Field experience</u>	<u>3</u>
	<b><u>6</u></b>

**Fourth Year**

<b>First Term</b>	<b>Hours</b>	<b>Second Term</b>	<b>Hours</b>
<u>GEO 376S</u>	<u>3</u>	<u>GEO UDE</u>	<u>3</u>
<u>GEO UDE</u>	<u>4</u>	<u>Social/Behavioral Sci</u>	<u>3</u>
<u>Language or Culture</u>	<u>3</u>	<u>Language or Culture</u>	<u>3</u>
<u>Tech Elective UD</u>	<u>3</u>	<u>Tech Elective UD</u>	<u>3</u>
		<u>Visual/Perf Arts</u>	<u>3</u>
	<b><u>13</u></b>		<b><u>15</u></b>

---

***Total Credit Hours 126***

*\*Pending approval and addition to course inventory.*