



OFFICE OF THE FACULTY COUNCIL

THE UNIVERSITY OF TEXAS AT AUSTIN

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April 4, 2018

Provost Maurie McInnis  
The University of Texas at Austin  
MAI 201  
Campus Mail Code: G1000

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Approved by Executive Vice President and  
Provost Maurie McInnis on April 5, 2018

Dear Provost McInnis,

Enclosed for your consideration and action are proposed changes to the Bachelor of Science in Geosystems Engineering and Hydrology degree program in the Cockrell School of Engineering and Jackson School of Geosciences chapters in the *Undergraduate Catalog, 2018-2020* (D 16331-16336). The proposal is classified as being of *general* interest to more than one college or school and was approved by the Faculty Council on a no-protest basis on April 3, 2018. The authority to grant final approval of this legislation resides with your office on behalf of the President.

Please let me know if you have questions or if I can provide other information concerning this item.

Sincerely,

A handwritten signature in cursive script that reads "Alan W. Friedman".

Alan W. Friedman, Secretary  
General Faculty and Faculty Council  
The University of Texas at Austin  
Arthur J. Thaman and Wilhelmina Doré Thaman Professor of English and Comparative Literature

AWF:dlr Enclosure

ec: Lydia A. Cornell, Administrative Program Coordinator, Provost's Office  
Michelle K. George, Administrative Manager for Faculty Affairs, Provost's Office  
Gerald E. Speitel, Associate Dean for Academic Affairs, Cockrell School of Engineering  
Sonya D. Shaffer, Executive Assistant, Cockrell School of Engineering  
Christopher J. Bell, Associate Dean for Academic Affairs, Jackson School of Geosciences  
M. Nicole Evans, Assistant Dean for Student Affairs and Administration, Jackson School of Geosciences

## DOCUMENTS OF THE GENERAL FACULTY

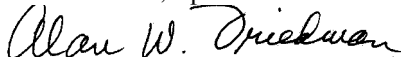
**PROPOSED CHANGES TO THE BACHELOR OF SCIENCE IN GEOSYSTEMS ENGINEERING  
AND HYDROGEOLOGY DEGREE PROGRAM IN THE CHAPTERS OF THE COCKRELL  
SCHOOL OF ENGINEERING AND THE JACKSON SCHOOL OF GEOLOGICAL SCIENCES IN  
THE UNDERGRADUATE CATALOG 2018-2020**

Deans Sharon L. Woods and Sharon Mosher, in the Cockrell School of Engineering and the Jackson School of Engineering, respectively, have filed with the Secretary of the Faculty Council the following proposal to change the Geosystems Engineering and Hydrology degree program in their respective chapters in the *Undergraduate Catalog, 2018-2020*. On April 12, 2017, the Petroleum and Geosystems Engineering (PGE) faculty approved the proposal. It was approved by the Cockrell School of Engineering (CSE) Degrees and Courses Committee on May 24, 2017, and by Cockrell School of Engineering Dean Sharon L. Woods on September 18, 2017. The Secretary has classified this proposal as legislation of general interest to more than one college or school.

The Committee on Undergraduate Degree Program Review recommended approval of the proposal on March 7, 2018, and forwarded it 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 the Provost on behalf of the President.

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 April 3, 2018.



Alan W. Friedman, Secretary of the General Faculty and Faculty Council  
The University of Texas at Austin  
Arthur J. Thaman and Wilhelmina Doré Thaman Professor of English and Comparative Literature



**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:

- 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?

Note: THECB Semester Credit Hour Change Form required, download from URL:

<http://www.thecb.state.tx.us/reports/DocFetch.cfm?DocID=2419&format=doc>

If yes, explain:

## 5. COLLEGE/SCHOOL APPROVAL PROCESS

Department approval date: N/A

Department approval date: April 12, 2017

College approval date: May 24, 2017

Dean approval date: Sept. 18, 2017

PGE Faculty and chair

CSE Degrees and Courses Committee

CSE Faculty; Sharon L. Wood, Dean

## PROPOSED NEW CATALOG TEXT:

### BACHELOR OF SCIENCE IN GEOSYSTEMS ENGINEERING AND HYDROGEOLOGY

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#### Curriculum

Course requirements include courses within the Cockrell School of Engineering and other required courses. In addition, each student must complete the University's Core Curriculum. In some cases, a course that fulfills one of the following requirements may also be counted toward core curriculum or flag requirements; these courses are identified below.

In the process of fulfilling engineering degree requirements, students must also complete coursework to satisfy the following flag requirements: one independent inquiry flag, one course with a quantitative reasoning flag, one ethics and leadership flag, one global cultures flag, one cultural diversity in the US flag, and two writing flags. The independent inquiry flag, the quantitative reasoning flag, the ethics and leadership flag, and both writing flags are carried by courses specifically required for the degree; these courses are identified below. Courses that may be used to fulfill flag requirements are identified in the *Course Schedule*.

Courses used to fulfill technical and nontechnical elective requirements must be approved by the petroleum and geosystems engineering faculty and the geological sciences faculty before the student registers for them.

<b>Requirements</b>		<b>Hours</b>
<b>Petroleum and Geosystem Engineering Courses</b>		
PGE 310	Formulation and Solution of Geosystems Engineering Problems	3
PGE 322K	Transport Phenomena in Geosystems	3
PGE 323K	Reservoir Engineering I: Primary Recovery	3
PGE 323L	Reservoir Engineering II: Secondary and Tertiary Recovery	3
PGE 326	Thermodynamics and Phase Behavior	3
PGE 333T	Engineering Communication (writing flag and ethics and leadership flag)	3
PGE 365	Resource Economics and Valuation	3
PGE <del>368</del> 358	<del>[Fundamentals of Well Logging]</del> <u>Principles of Formation Evaluation</u>	3
PGE 373L	Geosystems Engineering Design and Analysis (independent inquiry flag)	3
PGE 424	Petrophysics	4
PGE 427	Properties of Petroleum Fluids (Properties of Petroleum Fluids)	4
<b>Chemistry</b>		
CH 301	Principles of Chemistry I (part II science and technology)	3
CH 302	Principles of Chemistry II	3
<b>Civil Engineering</b>		
C E 357	Geotechnical Engineering	3
<b>Engineering Mechanics</b>		
E M 306	Statics	3
E M 319	Mechanics of Solids	3
<b>Geological Sciences</b>		
GEO 303	Introduction to Geology	3
GEO 376L	Field Methods in Groundwater Hydrology	3
GEO 376S	Physical Hydrology	3
GEO 416K	Earth Materials	4
GEO 416M	Sedimentary Rocks	4
GEO 420K	Introduction to Field and Stratigraphic Methods	4
GEO 428	Structural Geology	4
GEO 476K	Groundwater Hydrology (writing flag)	4
<b>Mathematics</b>		
M 408C	Differential and Integral Calculus (mathematics; quantitative reasoning flag)	4
M 408D	Sequences, Series, and Multivariable Calculus	4
M 427J	Differential Equations with Linear Algebra (quantitative reasoning flag)	4
or M 427K	Advanced Calculus for Applications I	

<b>Physics</b>		
PHY 103M	Laboratory for Physics 303K	1
PHY 103N	Laboratory for Physics 303L	1
PHY 303K	Engineering Physics I (part I science and technology; quantitative reasoning flag)	3
PHY 303L	Engineering Physics II (part I science and technology; quantitative reasoning flag)	3
<b>Other Required Courses</b>		
Approved engineering elective		3
Approved geosciences technical elective		3
<b>Rhetoric and Writing</b>		
RHE 306	Rhetoric and Writing (English composition)	3
<b>Remaining Core Curriculum Courses</b>		
E 316L	British Literature (humanities; [ <del>in E 316L, 316M, 316N, and 316P</del> ] some sections carry a global cultures or cultural diversity flag)	3
or E 316M	American Literature ( <u>humanities; some sections carry a global cultures or cultural diversity flag</u> )	
or E 316N	World Literature ( <u>humanities; some sections carry a global cultures or cultural diversity flag</u> )	
or E 316P	Masterworks of Literature ( <u>humanities; some sections carry a global cultures or cultural diversity flag</u> )	
American government (some sections carry a cultural diversity flag)		6
American history (some sections carry a cultural diversity flag)		6
Visual and performing arts (some sections carry a global cultures and/or cultural diversity flag)		3
Social and behavioral sciences (some sections carry a global cultures and/or cultural diversity flag)		3
UGS 302	First-Year Signature Course ( <del>in UGS 302 all sections carry writing flag; in UGS 303 some sections carry a writing flag</del> )	3
or UGS 303	First-Year Signature Course ( <u>in UGS 303 some sections carry a writing flag</u> )	
Total Hours		132

#### SUGGESTED ARRANGEMENT OF COURSES

##### First Year

First Term	Hours	Second Term	Hours
CH 301	3	CH 302	3
GEO 303	3	M 408D	4
M 408C	4	PHY 303K	3
RHE 306	3	PHY 103M	1
UGS 302 or 303	3	PGE 333T	3
		American history	3

	16		17		
<b>Second Year</b>					
<b>First Term</b>	Hours	<b>Second Term</b>	Hours		
GEO 416K	4	E M 319	3		
GEO 416M	4	PGE 310	3		
E M 306	3	PGE 427	4		
M 427J or 427K	4	PGE 326	3		
		PHY 303L	3		
		PHY 103N	1		
	15		17		
<b>Third Year</b>					
<b>First Term</b>	Hours	<b>Second Term</b>	Hours	<b>Summer Term</b>	Hours
GEO 476K	4	C E 357	3	GEO 376L	3
PGE 322K	3	GEO 420K	4		
PGE 323K	3	PGE 323L	3		
PGE 424	4	PGE [ <del>368</del> ] <u>358</u>	3		
Social and behavioral sciences	3	American government	3		
	17		16		3
<b>Fourth Year</b>					
<b>First Term</b>	Hours	<b>Second Term</b>	Hours		
E 316L, 316M, 316N, or_316P	3	PGE 373L	3		
GEO 428	4	Geoscience technical elective	3		
GEO 376S	3	American government	3		
PGE 365	3	American history	3		
Engineering technical elective	3	Visual and performing arts	3		
	16		15		

Total credit hours: 132