PROPOSED CHANGES TO THE GEOSYSTEMS ENGINEERING AND HYDROGEOLOGY DEGREE PROGRAM IN THE JACKSON SCHOOL OF GEOSCIENCES CHAPTER IN THE *UNDERGRADUATE CATALOG 2018-2020*

TYPE OF CHANGE:[1]   ☒ Academic Change
☐ Degree Program Change (THECB[2] form required)

PROPOSED CLASSIFICATION:[3]   ☒ Exclusive   ☐ General   ☐ Major

1. **IF THE ANSWER TO ANY OF THE FOLLOWING QUESTIONS IS YES, THE COLLEGE MUST CONSULT <u>LINDA DICKENS, DIRECTOR OF ACCREDITATION</u> AND ASSESSMENT, TO DETERMINE IF SACSCOC APPROVAL IS REQUIRED.**
   - Is this a new degree program?   Yes ☐ No ☒
   - Is this program being deleted?   Yes ☐ No ☒
   - Does the program offer courses that will be taught off campus?   Yes ☐ No ☒
   - Will courses in this program be delivered electronically?   Yes ☐ No ☒

2. **EXPLAIN CHANGE TO DEGREE PROGRAM AND GIVE A DETAILED RATIONALE FOR EACH INDIVIDUAL CHANGE:**
   PGE 368 replaced with PGE 358. Replacement course will cover a significant portion of material that goes beyond well-logging interpretation, including applications in reservoir engineering, drilling, production, geophysics. The change is mainly meant to more accurately reflect the course as it has evolved.

3. **THIS PROPOSAL INVOLVES: (Please check all that apply)**
   ☐ Courses in other colleges   ☐ Courses in proposer's college that are frequently taken by students in other colleges   ☐ Flags

   ☐ Course in the core curriculum   ☐ Change in course sequencing for an existing program   ☒ Courses that have to be added to the inventory

   ☐ Change in admission requirements (external or internal)   ☐ 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 would you do so?
   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 <u>students from outside</u> of your college taking <u>classes in your college</u>?   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 <u>students from your college</u> taking <u>courses in other colleges</u>?   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? **n/a**
   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: **NO**
        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? **NO**
        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: April 12, 2017   PGE Faculty and chair
        College approval date: May 24, 2017   CSE Degrees & Courses Committee
        Dean approval date: Sept. 18, 2017   CSE Faculty; Sharon L. Wood, Dean

PROPOSED NEW CATALOG TEXT:[4]

Under Curriculum

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.

Requirements		**Hours**
Petroleum and Geosystem Engineering Courses		
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-[368] 358	[Fundamentals of Well Logging] Principles of Formation Evaluation	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
Chemistry		
CH 301	Principles of Chemistry I (part II science and technology)	3
CH 302	Principles of Chemistry II	3
Civil Engineering		
C E 357	Geotechnical Engineering	3
Engineering Mechanics		
E M 306	Statics	3
E M 319	Mechanics of Solids	3
Geological Sciences		
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
Mathematics		
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	
Physics		
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
Other Required Courses		
Approved engineering elective		3
Approved geosciences technical elective		3
Rhetoric and Writing		
RHE 306	Rhetoric and Writing (English composition)	3

Remaining Core Curriculum Courses		
E 316L	British Literature (humanities; [in E 316L, 316M, 316N, and 316P] some sections carry a global cultures or cultural diversity flag)	3
or E 316M	American Literature (humanities; some sections carry a global cultures or cultural diversity flag)	
or E 316N	World Literature (humanities; some sections carry a global cultures or cultural diversity flag)	
or E 316P	Masterworks of Literature (humanities; some sections carry a global cultures or cultural diversity flag)	
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 (in UGS 302 all sections carry writing flag[; in UGS 303 some sections carry a writing flag])	3
or UGS 303	First-Year Signature Course (in UGS 303 some sections carry a writing flag)	
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

Second Year

First Term	Hours	Second Term	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

Third Year

First Term	Hours	Second Term	Hours	Summer Term	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 [368] 358	3		
Social and behavioral sciences	3	American government	3		
	17		16		3

Fourth Year

First Term	Hours	Second Term	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