February 25, 2016

Judith H. Langlois
Interim Executive Vice President and Provost
The University of Texas at Austin
MAI 201
Campus Mail Code: G1000

Dear Dr. Langlois:

Enclosed for your consideration and action are proposed changes to the College of Natural Sciences chapter in the Undergraduate Catalog, 2016-2018. Yesterday, Faculty Council approved the legislation on a no-protest basis. The proposals were classified as being of general application and of primary interest to more than one college or school. The authority to grant final approval resides with the UT System.

- Proposed Changes to the Flags in the BSA Degree Program (D 14269-14280)
- Proposed Changes to the Internal and External Transfer Policies (D 14281-14286)
- Proposed Changes to the Bachelor of Science in Biology (D 14355-14359).
- Proposed Changes to the Bachelor of Science in Computer Science (D 14360-14367).
- Proposed Changes to the Bachelor of Science in Mathematics (D 14368-14377).

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

Sincerely,

Hillary Hart, Secretary
General Faculty and Faculty Council

HH: dlr

Enclosure

xc: Gregory L. Fenves, president
    Janet Dukerich, senior vice provost for faculty affairs

ec: Carol Longoria, deputy to the president
    David Vanden Bout, associate dean for curriculum and programs, College of Natural Sciences
    Judith Quinney, manager, records office, College of Natural Sciences
    Allen Walser, manager of reporting and analysis, IRRIS
    Brenda Schumann, associate registrar
    Lydia Cornell, program coordinator, provost's office
    Michelle George, administrative manager for faculty affairs, provost’s office
Dean Linda Hicke in the College of Natural Sciences 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 general interest to more than one college or school.

The Committee on Undergraduate Degree Program Review recommended approval of the changes on February 10, 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 February 24, 2016.

Hillary Hart, Secretary
General Faculty and Faculty Council

Posted on the Faculty Council website (http://www.utexas.edu/faculty/council/) on February 11, 2016.
PROPOSED CHANGES TO THE FLAGS IN THE BACHELOR OF SCIENCE AND ARTS
DEGREE PROGRAM IN THE COLLEGE OF NATURAL SCIENCES CHAPTER IN THE
UNDERGRADUATE CATALOG 2016-2018

Type of Change  ☒ Academic Change
☐ Degree Program Change (THECB form required)

Proposed classification  ☐ Exclusive  ☒ General  ☐ Major

1. IF THE ANSWER TO ANY OF THE FOLLOWING QUESTIONS IS YES, THE COLLEGE
MUST CONSULT LINDA DICKENS, DIRECTOR OF ACCREDITATION AND
ASSESSMENT, TO DETERMINE IF SACS-COC APPROVAL IS REQUIRED.
• Is this a new degree program?  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:
The College of Natural Sciences adopted the following flags for the 2016 catalog: Global Cultures,
Cultural Diversity in the United States, Ethics and Leadership, and Independent Inquiry. Catalog
updates are included for the following degrees:

Bachelor of Arts, Plan I
Bachelor of Science and Arts
Bachelor of Science in Astronomy
Bachelor of Science in Biochemistry
Bachelor of Science in Biology
Bachelor of Science in Chemistry
Bachelor of Science in Computer Science
Bachelor of Science in Human Development and Family Science
Bachelor of Science in Mathematics
Bachelor of Science in Medical Laboratory Science
Bachelor of Science in Neuroscience
Bachelor of Science in Nutrition
Bachelor of Science in Physics
Bachelor of Science in Textiles and Apparel

Flags for the BS in Environmental Science (Biological Science options) will be added to the BS in
Environmental Science proposal.

Rationale: Data analyzed by the School of Undergraduate Studies demonstrated that many Natural
Sciences graduates were completing courses with these flags even when the flags were not required.

3. THIS PROPOSAL INVOLVES (Please check all that apply)
☐ Courses in other colleges  ☐ Courses in proposer’s college
☐ Course in the core curriculum that are frequently taken by
students in other colleges  ☐ Change in course sequencing for
an existing program
☐ Change in admission requirements (external or internal)  ☐ Courses that have to
requirements not explicit in the be added to 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 [x] No
   
   If yes, then how?

b. Do you anticipate a net change in the number of students in your college? [ ] Yes [x] 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 [x] 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 [x] No
   
   If yes, please indicate the number of students and/or class seats involved.

   It is unknown how adopting these flags in Natural Sciences will impact other colleges and specific courses. It is likely that Natural Sciences majors will seek completion of the global cultures, cultural diversity in the U.S., and ethics and leadership flags outside of the college, at least at first. Data gathered by the School of Undergraduate Studies show that many Natural Sciences graduates completed these flags by satisfying other degree requirements even when the flags were not required.

   
   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.

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

   The College of Natural Sciences adopted the following skills and experience flags: Global Cultures, Cultural Diversity in the United States, Ethics and Leadership, and Independent Inquiry. These new flags join the ones previously adopted in earlier catalogs: Writing (2) and Quantitative Reasoning. The adoption for the 2016 catalog was based on data demonstrating how many Natural Sciences graduates already completed flags that were not required. The data was presented by Brent Iverson, Dean, School of Undergraduate Studies. The only flag that the college did not adopt is the third writing flag.

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

   Person communicated with: Brent Iverson, Dean, School of Undergraduate Studies
   Date of communication: November 4, 2015
   Response: Dr. Iverson encouraged the college to adopt the remaining flags.

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

5. **COLLEGE/SCHOOL APPROVAL PROCESS**

   College approval date: November 4, 2015; November 18, 2015
   Dean approval date: November 4, 2015; November 18, 2015, David Vanden Bout, Associate Dean

PROPOSED NEW CATALOG TEXT:
Bachelor of Arts, Plan I

All students must complete the University’s Core Curriculum. In the process of fulfilling the core curriculum and other degree requirements, all students must complete courses with content in the following areas:

1. Writing: two flagged courses, including one at the upper-division level, beyond Rhetoric and Writing 306 or its equivalent.
2. Quantitative reasoning: one flagged course
1. Core curriculum.
2. Skills and experience flags:
   a. Writing: two flagged courses beyond Rhetoric and Writing 306 or its equivalent, including one at the upper-division level
   b. Quantitative reasoning: one flagged course
   c. Global cultures: one flagged course
   d. Cultural diversity in the United States: one flagged course
   e. Ethics and leadership: one flagged course
   f. Independent inquiry: one flagged course

Courses that may be used to fulfill flag requirements are identified in the Course Schedule. They may be used simultaneously to fulfill other requirements, unless otherwise specified. Please note, students may not earn the cultural diversity in the United States and the global cultures flags from the same course. Students are encouraged to discuss options with their academic advisers.

Bachelor of Science and Arts

In the process of fulfilling the core curriculum and other degree requirements, all students must complete courses with content in the following areas:

1. Writing: two flagged courses, including one at the upper-division level, beyond Rhetoric and Writing 306 or its equivalent
2. Quantitative reasoning: one flagged course
1. Core curriculum.
2. Skills and experience flags:
   a. Writing: two flagged courses beyond Rhetoric and Writing 306 or its equivalent, including one at the upper-division level
   b. Quantitative reasoning: one flagged course
   c. Global cultures: one flagged course
   d. Cultural diversity in the United States: one flagged course
   e. Ethics and leadership: one flagged course
   f. Independent inquiry: one flagged course

Courses that may be used to fulfill flag requirements are identified in the Course Schedule. They may be used simultaneously to fulfill other requirements, unless otherwise specified. Please note, students may not earn the cultural diversity in the United States and the global cultures flags from the same course. Students are encouraged to discuss options with their academic advisers.

Bachelor of Science in Astronomy

All students pursuing an undergraduate degree must complete the University’s Core Curriculum.

In addition, students seeking the Bachelor of Science in Astronomy must complete the following degree-level requirements. In some cases, courses that fulfill degree-level requirements also meet the requirements of the core.

1. Two courses with a writing flag. One of these courses must be upper division.
2. One course with a quantitative reasoning flag.
Courses with flags are identified in the Course Schedule. They may be used simultaneously to fulfill other requirements, unless otherwise specified.

In the process of fulfilling degree requirements, all students must complete:

1. Core curriculum
2. Skills and experience flags:
   a. Writing: two flagged courses beyond Rhetoric and Writing 306 or its equivalent, including one at the upper-division level
   b. Quantitative reasoning: one flagged course
   c. Global cultures: one flagged course
   d. Cultural diversity in the United States: one flagged course
   e. Ethics and leadership: one flagged course
   f. Independent inquiry: one flagged course

Courses that may be used to fulfill flag requirements are identified in the Course Schedule. They may be used simultaneously to fulfill other requirements, unless otherwise specified. Please note, students may not earn the cultural diversity in the United States and the global cultures flags from the same course. Students are encouraged to discuss options with their academic advisers.

Bachelor of Science in Biochemistry

All students pursuing an undergraduate degree must complete the University’s Core Curriculum.

In addition, students seeking the Bachelor of Science in Biochemistry must complete the following degree-level requirements. In some cases, courses that fulfill degree-level requirements also meet the requirements of the core.

1. Two courses with a writing flag. One of these courses must be upper division.
2. One course with a quantitative reasoning flag.

Courses with flags are identified in the Course Schedule. They may be used simultaneously to fulfill other requirements, unless otherwise specified.

In the process of fulfilling degree requirements, all students must complete:

1. Core curriculum
2. Skills and experience flags:
   a. Writing: two flagged courses beyond Rhetoric and Writing 306 or its equivalent, including one at the upper-division level
   b. Quantitative reasoning: one flagged course
   c. Global cultures: one flagged course
   d. Cultural diversity in the United States: one flagged course
   e. Ethics and leadership: one flagged course
   f. Independent inquiry: one flagged course

Courses that may be used to fulfill flag requirements are identified in the Course Schedule. They may be used simultaneously to fulfill other requirements, unless otherwise specified. Please note, students may not earn the cultural diversity in the United States and the global cultures flags from the same course. Students are encouraged to discuss options with their academic advisers.

Bachelor of Science in Biology

All students pursuing an undergraduate degree must complete the University’s Core Curriculum.
In addition, students seeking the Bachelor of Science in Biology must complete the following degree level requirements. In some cases, courses that fulfill degree level requirements also meet the requirements of the core.

1. Two courses with a writing flag. One of these courses must be upper-division.
2. One course with a quantitative reasoning flag.

Courses with flags are identified in the Course Schedule. They may be used simultaneously to fulfill other requirements, unless otherwise specified.

In the process of fulfilling degree requirements, all students must complete:
1. Core curriculum
2. Skills and experience flags:
   a. Writing: two flagged courses beyond Rhetoric and Writing 306 or its equivalent, including one at the upper-division level
   b. Quantitative reasoning: one flagged course
   c. Global cultures: one flagged course
   d. Cultural diversity in the United States: one flagged course
   e. Ethics and leadership: one flagged course
   f. Independent inquiry: one flagged course

Courses that may be used to fulfill flag requirements are identified in the Course Schedule. They may be used simultaneously to fulfill other requirements, unless otherwise specified. Please note, students may not earn the cultural diversity in the United States and the global cultures flags from the same course. Students are encouraged to discuss options with their academic advisers.

Bachelor of Science in Chemistry

All students pursuing an undergraduate degree must complete the University's Core Curriculum.

In addition, students seeking the Bachelor of Science in Chemistry must complete the following degree level requirements. In some cases, courses that fulfill degree level requirements also meet the requirements of the core.

1. Two courses with a writing flag. One of these courses must be upper-division.
2. One course with a quantitative reasoning flag.

Courses with flags are identified in the Course Schedule. They may be used simultaneously to fulfill other requirements, unless otherwise specified.

In the process of fulfilling degree requirements, all students must complete:
1. Core curriculum
2. Skills and experience flags:
   a. Writing: two flagged courses beyond Rhetoric and Writing 306 or its equivalent, including one at the upper-division level
   b. Quantitative reasoning: one flagged course
   c. Global cultures: one flagged course
   d. Cultural diversity in the United States: one flagged course
   e. Ethics and leadership: one flagged course
   f. Independent inquiry: one flagged course

Courses that may be used to fulfill flag requirements are identified in the Course Schedule. They may be used simultaneously to fulfill other requirements, unless otherwise specified. Please note, students may not
earn the cultural diversity in the United States and the global cultures flags from the same course. Students are encouraged to discuss options with their academic advisers.

Bachelor of Science in Computer Science

All students pursuing an undergraduate degree must complete the University’s Core Curriculum.

In addition, students seeking the Bachelor of Science in Computer Science must complete the following degree-level requirements. In some cases, courses that fulfill degree-level requirements also meet the requirements of the core.

1. Two courses with a writing flag. One of these courses must be upper-division.
2. One course with a quantitative reasoning flag.

Courses with flags are identified in the Course Schedule. They may be used simultaneously to fulfill other requirements, unless otherwise specified.

In the process of fulfilling degree requirements, all students must complete:

1. Core curriculum
2. Skills and experience flags:
   a. Writing: two flagged courses beyond Rhetoric and Writing 306 or its equivalent, including one at the upper-division level
   b. Quantitative reasoning: one flagged course
   c. Global cultures: one flagged course
   d. Cultural diversity in the United States: one flagged course
   e. Ethics and leadership: one flagged course
   f. Independent inquiry: one flagged course

Courses that may be used to fulfill flag requirements are identified in the Course Schedule. They may be used simultaneously to fulfill other requirements, unless otherwise specified. Please note, students may not earn the cultural diversity in the United States and the global cultures flags from the same course. Students are encouraged to discuss options with their academic advisers.

Bachelor of Science in Human Development and Family Sciences

All students pursuing an undergraduate degree must complete the University’s Core Curriculum.

In addition, students seeking the Bachelor of Science in Human Development and Family Sciences must complete the following degree-level requirements. In some cases, courses that fulfill degree-level requirements also meet the requirements of the core.

1. Two courses with a writing flag. One of these courses must be upper-division.
2. One course with a quantitative reasoning flag.

Courses with flags are identified in the Course Schedule. They may be used simultaneously to fulfill other requirements, unless otherwise specified.

In the process of fulfilling degree requirements, all students must complete:

1. Core curriculum
2. Skills and experience flags:
   a. Writing: two flagged courses beyond Rhetoric and Writing 306 or its equivalent, including one at the upper-division level
   b. Quantitative reasoning: one flagged course
   c. Global cultures: one flagged course
   d. Cultural diversity in the United States: one flagged course
e. Ethics and leadership: one flagged course  
f. Independent inquiry: one flagged course

Courses that may be used to fulfill flag requirements are identified in the Course Schedule. They may be used simultaneously to fulfill other requirements, unless otherwise specified. Please note, students may not earn the cultural diversity in the United States and the global cultures flags from the same course. Students are encouraged to discuss options with their academic advisers.

Bachelor of Science in Mathematics

All students pursuing an undergraduate degree must complete the University’s Core Curriculum.

In addition, students seeking the Bachelor of Science in Mathematics must complete the following degree-level requirements. In some cases, courses that fulfill degree-level requirements also meet the requirements of the core.

1. Two courses with a writing flag. One of these courses must be upper-division.  
2. One course with a quantitative reasoning flag.

Courses with flags are identified in the Course Schedule. They may be used simultaneously to fulfill other requirements, unless otherwise specified.

In the process of fulfilling degree requirements, all students must complete:

1. Core curriculum  
2. Skills and experience flags:  
   a. Writing: two flagged courses beyond Rhetoric and Writing 306 or its equivalent, including one at the upper-division level  
   b. Quantitative reasoning: one flagged course  
   c. Global cultures: one flagged course  
   d. Cultural diversity in the United States: one flagged course  
   e. Ethics and leadership: one flagged course  
   f. Independent inquiry: one flagged course

Courses that may be used to fulfill flag requirements are identified in the Course Schedule. They may be used simultaneously to fulfill other requirements, unless otherwise specified. Please note, students may not earn the cultural diversity in the United States and the global cultures flags from the same course. Students are encouraged to discuss options with their academic advisers.

Bachelor of Science in Medical Laboratory Science

All students pursuing an undergraduate degree must complete the University’s Core Curriculum.

In addition, students seeking the Bachelor of Science in Medical Laboratory Science must complete the following degree-level requirements. In some cases, courses that fulfill degree-level requirements also meet the requirements of the core.

1. Two courses with a writing flag. One of these courses must be upper-division.  
2. One course with a quantitative reasoning flag.

Courses with flags are identified in the Course Schedule. They may be used simultaneously to fulfill other requirements, unless otherwise specified.

In the process of fulfilling degree requirements, all students must complete:

1. Core curriculum  
2. Skills and experience flags:  
   a. Writing: two flagged courses beyond Rhetoric and Writing 306 or its equivalent, including one
Courses that may be used to fulfill flag requirements are identified in the Course Schedule. They may be used simultaneously to fulfill other requirements, unless otherwise specified. Please note, students may not earn the cultural diversity in the United States and the global cultures flags from the same course. Students are encouraged to discuss options with their academic advisers.

Bachelor of Science in Neuroscience

All students pursuing an undergraduate degree must complete the University’s Core Curriculum.

In addition, students seeking the Bachelor of Science in Neuroscience must complete the following degree-level requirements. In some cases, courses that fulfill degree-level requirements also meet the requirements of the core.

1. Two courses with a writing flag. One of these courses must be upper-division.
2. One course with a quantitative reasoning flag.

Courses with flags are identified in the Course Schedule. They may be used simultaneously to fulfill other requirements, unless otherwise specified.

In the process of fulfilling degree requirements, all students must complete:

1. Core curriculum
2. Skills and experience flags:
   a. Writing: two flagged courses beyond Rhetoric and Writing 306 or its equivalent, including one at the upper-division level
   b. Quantitative reasoning: one flagged course
   c. Global cultures: one flagged course
   d. Cultural diversity in the United States: one flagged course
   e. Ethics and leadership: one flagged course
   f. Independent inquiry: one flagged course

Courses that may be used to fulfill flag requirements are identified in the Course Schedule. They may be used simultaneously to fulfill other requirements, unless otherwise specified. Please note, students may not earn the cultural diversity in the United States and the global cultures flags from the same course. Students are encouraged to discuss options with their academic advisers.

Bachelor of Science in Nutrition

All students pursuing an undergraduate degree must complete the University’s Core Curriculum.

In addition, students seeking the Bachelor of Science in Nutrition must complete the following degree-level requirements. In some cases, courses that fulfill degree-level requirements also meet the requirements of the core.

1. Two courses with a writing flag. One of these courses must be upper-division.
2. One course with a quantitative reasoning flag.

Courses with flags are identified in the Course Schedule. They may be used simultaneously to fulfill other requirements, unless otherwise specified.
In the process of fulfilling degree requirements, all students must complete:

1. **Core curriculum**
2. **Skills and experience flags:**
   a. Writing: two flagged courses beyond Rhetoric and Writing 306 or its equivalent, including one at the upper-division level
   b. Quantitative reasoning: one flagged course
   c. Global cultures: one flagged course
   d. Cultural diversity in the United States: one flagged course
   e. Ethics and leadership: one flagged course
   f. Independent inquiry: one flagged course

Courses that may be used to fulfill flag requirements are identified in the *Course Schedule*. They may be used simultaneously to fulfill other requirements, unless otherwise specified. Please note, students may not earn the cultural diversity in the United States and the global cultures flags from the same course. Students are encouraged to discuss options with their academic advisers.

### Bachelor of Science in Physics

All students pursuing an undergraduate degree must complete the University’s **Core Curriculum**.

In addition, students seeking the Bachelor of Science in Physics must complete the following degree-level requirements. In some cases, courses that fulfill degree-level requirements also meet the requirements of the core.

1. Two courses with a writing flag. One of these courses must be upper-division.
2. One course with a quantitative reasoning flag.

Courses with flags are identified in the *Course Schedule*. They may be used simultaneously to fulfill other requirements, unless otherwise specified.

In the process of fulfilling degree requirements, all students must complete:

1. **Core curriculum**
2. **Skills and experience flags:**
   a. Writing: two flagged courses beyond Rhetoric and Writing 306 or its equivalent, including one at the upper-division level
   b. Quantitative reasoning: one flagged course
   c. Global cultures: one flagged course
   d. Cultural diversity in the United States: one flagged course
   e. Ethics and leadership: one flagged course
   f. Independent inquiry: one flagged course

Courses that may be used to fulfill flag requirements are identified in the *Course Schedule*. They may be used simultaneously to fulfill other requirements, unless otherwise specified. Please note, students may not earn the cultural diversity in the United States and the global cultures flags from the same course. Students are encouraged to discuss options with their academic advisers.

### Bachelor of Science in Public Health

All students pursuing an undergraduate degree must complete the University’s **Core Curriculum**.

In addition, students seeking the Bachelor of Science in Public Health must complete the following degree-level requirements. In some cases, courses that fulfill degree-level requirements also meet the requirements of the core.

In the process of fulfilling degree requirements, all students must complete:

1. **Foundation courses:**
1. Two courses with a writing flag. One of these courses must be upper division.
2. One course with a quantitative reasoning flag.

Courses with flags are identified in the Course Schedule. They may be used simultaneously to fulfill other requirements, unless otherwise specified.

Courses that may be used to fulfill flag requirements are identified in the Course Schedule. They may be used simultaneously to fulfill other requirements, unless otherwise specified. Please note, students may not earn the cultural diversity in the United States and the global cultures flags from the same course. Students are encouraged to discuss options with their academic advisers.

**Bachelor of Science in Textiles and Apparel**

All students pursuing an undergraduate degree must complete the University’s Core Curriculum.

In addition, students seeking the Bachelor of Science in Textiles and Apparel must complete the following degree-level requirements. In some cases, courses that fulfill degree-level requirements also meet the requirements of the core.

1. Two courses with a writing flag. One of these courses must be upper division.
2. One course with a quantitative reasoning flag.

Courses that carry flags are identified in the Course Schedule. They may be used simultaneously to fulfill other requirements, unless otherwise specified.

In the process of fulfilling degree requirements, all students must complete:

1. Core curriculum
2. Skills and experience flags:
   a. Writing: two flagged courses beyond Rhetoric and Writing 306 or its equivalent, including one at the upper-division level
   b. Quantitative reasoning: one flagged course
   c. Global cultures: one flagged course
   d. Cultural diversity in the United States: one flagged course
   e. Ethics and leadership: one flagged course
   f. Independent inquiry: one flagged course
Courses that may be used to fulfill flag requirements are identified in the Course Schedule. They may be used simultaneously to fulfill other requirements, unless otherwise specified. Please note, students may not earn the cultural diversity in the United States and the global cultures flags from the same course. Students are encouraged to discuss options with their academic advisers.
PROPOSED CHANGES TO THE INTERNAL AND EXTERNAL TRANSFER POLICIES IN THE ADMISSION AND REGISTRATION SECTION OF THE COLLEGE OF NATURAL SCIENCES CHAPTER IN THE UNDERGRADUATE CATALOG 2016-2018

Dean Linda Hicke in the College of Natural Sciences 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 general interest to more than one college or school.

The Committee on Undergraduate Degree Program Review recommended approval of the changes on February 4, 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 February 24, 2016.

Hillary Hart, Secretary
General Faculty and Faculty Council

Posted on the Faculty Council website (http://www.utexas.edu/faculty/council/) on February 11, 2016.
PROPOSED CHANGES TO THE INTERNAL AND EXTERNAL TRANSFER POLICIES IN THE ADMISSION AND REGISTRATION SECTION OF THE COLLEGE OF NATURAL SCIENCES
CHAPTER IN THE UNDERGRADUATE CATALOG 2016-2018

Type of Change ☒ Academic Change
☐ Degree Program Change (THECB form required)

Proposed classification ☒ Exclusive ☒ General ☐ Major

1. IF THE ANSWER TO ANY OF THE FOLLOWING QUESTIONS IS YES, THE COLLEGE MUST CONSULT LINDA DICKENS, DIRECTOR OF ACCREDITATION AND ASSESSMENT, TO DETERMINE IF SACS-COC APPROVAL IS REQUIRED.
   • Is this a new degree program? 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:

   Internal Transfer
   The internal transfer process was used for the first time for the internal transfer class entering the college in Fall 2015. From that process, the college fine-tuned admission policies that now need to be codified in the catalog.
   a. Remove prompt that students may submit evidence of scientific achievement.
      Rationale: Students are encouraged to weave their scientific experiences into their essays as a means of supporting their declared interest in studying science.
   b. Require admitted internal transfers to go through the internal transfer admission process if they wish to change from one major to another.
      Rationale: The target number of admits to each major was developed based upon capacity. There is also a concern that students would identify a less-populated major during the application and then change to a highly populated major after admission. Students were informed during the application process that changing their minds after admission would require going through the internal transfer process again.

   External Transfer
   The changes to the external transfer admission process are made to reflect the internal process used by the Office of Admissions while being less prescriptive about the courses a transfer student may take. There are still internal admission processes that take into account the divergent academic backgrounds of specific populations, such as the computer science major versus the textile and apparel fashion design major.
   a. Insert paragraph to introduce competitive criteria.
      Rationale: Completion of the criteria to be competitive is no guarantee of admission, nor is lack of completing all of the criteria a barrier to admission. The goal is to create a welcoming tone to encourage students to submit their applications.
   b. Update the requirement of 30 hours completed or in progress.
      Rationale: Per procedure in the Office of Admissions, students may apply while in progress toward completing 30 hours.
   c. Increase the minimum gpa listed to be competitive to 3.25.
      Rationale: The average gpa’s are higher than 3.0. Increasing the gpa gives students a more accurate picture of the qualifications they need to present to be competitive.
   d. Update the mathematics and science courses to state the fields of study in which courses should be taken, rather than specific courses. State that grades of A and B are expected to be competitive.
**Rationale:** The Office of Admissions reviews performance in mathematics, biology, chemistry, and physics courses without requiring specific courses within these fields of study.

The Entry-level Major

a. Relocate section in front of Internal Transfer and External Transfer.
   **Rationale:** Both the Internal and External Transfer sections refer to entry-level major status. Moving the description of the entry-level major improves the descriptions of the transfer processes.

b. Remove the paragraph regarding admission to the entry-level major in Computer Science. Add a paragraph stating that students admitted through the freshman admission and external transfer may change from one entry-level major to another, except for computer science and neuroscience.
   **Rationale:** In the past, students admitted to the College of Natural Sciences were permitted to change from one entry-level major to another. This has become untenable in computer science and neuroscience due to the growth of interest in these fields of study. The departments of Computer Science and Neuroscience are working closely with the college and the Office of Admissions to meet target enrollments into the entry-level major.

Adding a Simultaneous Major or Changing Majors

a. Add a statement that students admitted through internal transfer may not add a simultaneous major in the college unless admitted through internal transfer.
   **Rationale:** Upon instituting the internal transfer policy, the college received questions from students about the possibility of transferring to other entry-level majors after admission. The college is closing a potential loophole that students who want admission into majors that are high in demand might employ – first, to be admitted to a major that is not high in demand, and second, to add the high demand major as a simultaneous major.

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
   - Course in the core curriculum
   - Change in admission requirements (external or internal)
   - Change in course sequencing for an existing program
   - Requirements not explicit in the catalog language (e.g., lists of acceptable courses maintained by department office)
   - Courses that have to be added to the inventory

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:

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? If yes, explain: **No**

5. COLLEGE/SCHOOL APPROVAL PROCESS
   Dean approval date: November 12, 2015; David Vanden Bout, Associate Dean

PROPOSED NEW CATALOG TEXT:

Admission Policies of the College
[no changes]

Freshman Admission
[no changes]

The Entry-Level Major

All new freshman and transfer students are admitted into the College of Natural Sciences in an entry-level major. After completing a specified set of entry-level mathematics and science courses required for the degree with a grade of at least C- in each course, students are admitted to the major and option they plan to pursue unless the major or option has special admission-to-major requirements.

   Students who wish to pursue computer science but who were not admitted to the entry-level major by the Office of Admissions must have a minimum overall grade point average of 2.50 in residence at the University to transfer into the entry-level major. If a student completes transfer courses approved as substitutes for the entry-level courses, he or she may also count the grades of the approved substitutes toward the minimum overall grade point average of 2.50 for admission into the entry-level major. A student who is not admitted may submit an appeal to the department for consideration.

   Students admitted into the College of Natural Sciences through freshman admission or external transfer may change from one entry-level major into the other, with the exception of the computer science and neuroscience entry-level majors. The computer science and neuroscience entry-level majors are restricted to students who are admitted by the Office of Admissions or through internal transfer.

Internal Transfer

Students enrolled in other colleges or schools at the University may apply by April 15 to be considered for admission into an entry-level major in the following fall semester. If April 15 falls on a weekend or an official university holiday, the application is due on the next business day.

   Admission to the college is limited and competitive. To be competitive, students should:
   1. Complete a minimum of twenty-four semester hours in residence
   2. Achieve a grade point average of at least 3.00 in residence
   3. Complete one of the following courses in residence with a grade of at least B-: Mathematics 408C, 408D, 408K, 408L, 408M, 408N, 408S, or Statistics and Data Sciences 302.
   4. Complete two of the following courses in residence with grades of at least B-: Biology 311C, Chemistry 301, 302, Physics 303K, and 303L, or majors level equivalents.
5. Submit an essay describing how the intended major would impact achievement of the educational and career goals.

Students may also submit evidence of scientific achievements in the form of a resume or other document, if desired.

Students admitted through internal transfer who wish to change to a different major in the college must apply through internal transfer and be accepted in order to change majors.

External Transfer

Students enrolled at other universities who wish to enter the College of Natural Sciences must apply for transfer admission through the Office of Admissions. Students must meet transfer admission deadlines and requirements.

Admission to the college is limited and competitive. To be competitive, students should:

The college seeks applicants with excellent past performance in mathematics and science courses. Admission to the college is limited and competitive, and varies each year based on the applicant pool. Meeting all of the following criteria does not guarantee admission, and failing to meet all criteria does not eliminate applicants from consideration. All students are welcome to apply.

To be competitive, it is recommended that students:

1. Complete or be in progress to complete a minimum of thirty transferable semester hours when submitting the application.
2. Achieve a grade point average of at least 3.00.
3. Complete a calculus course with a grade of at least B-. Complete one of the following courses with a grade of at least B: Mathematics 408C, 408D, 408K, 408L, 408M, 408N, 408S, and Statistics and Data Sciences 302.
4. Complete a minimum of nine semester hours in first year mathematics and science coursework with grades of A and B, including, for example, any combination of biology, chemistry, mathematics, and physics. Complete two of the following courses with grades of at least B: Biology 311C, Chemistry 301, CH 302, Computer Science 311, 312, Physics 303K, and 303L, or majors level equivalents.
5. Utilize all aspects of the admissions application, including essays, resume, and optional letters of recommendation to express interest in the intended academic and career path in the sciences. Submit an essay describing how the intended major would impact achievement of the educational and career goals.

Students who apply to the College of Natural Sciences with fewer than thirty transferable hours completed will be considered on a space-available basis after the thirty hours are complete.

The University of Texas prioritizes transfer students who have completed fewer than seventy semester hours and who are able to remain on track to complete a degree in four years, including time spent at previous institutions. Meeting all of the criteria does not guarantee admission. Students who do not meet all of the criteria are welcome to apply. Students may also submit evidence of scientific achievements in the form of a resume or other document, if desired.

Statistics regarding past admissions cycles are available at cns.utexas.edu/students/future/external-transfer#transfer-statistics.

The Entry-Level Major

All new freshman and transfer students are admitted into the College of Natural Sciences in an entry-level major. After completing a specified set of entry-level mathematics and science courses required for the degree with a grade of at least C- in each course, students are admitted to the major and option they plan to pursue unless the major or option has special admission to major requirements.

Students who wish to pursue computer science but who were not admitted to the entry-level major by the Office of Admissions must have a minimum overall grade point average of 2.50 in residence at the University to
transfer into the entry-level major. If a student completes transfer courses approved as substitutes for the entry-level courses, he or she may also count the grades of the approved substitutes toward the minimum overall grade point average of 2.50 for admission into the entry-level major. A student who is not admitted may submit an appeal to the department for consideration.

Adding a Simultaneous Major or Changing Majors

Students interested in declaring a simultaneous major must first discuss the impact of the simultaneous major on their progress toward degree and develop a timely graduation plan with their academic advisers. Students approved to declare eligible to pursue a simultaneous major must follow the application procedure and meet admission requirements that have been established for the simultaneous major. At minimum, students must complete thirty semester hours of coursework in residence at the University. Students interested in changing majors must meet the entry-level or admission requirements of the major they wish to enter. Students admitted through internal transfer may not add a simultaneous major in the College of Natural Sciences unless they are admitted into the simultaneous major through internal transfer.
Dean Linda Hicke in the College of Natural Sciences 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 general interest to more than one college or school.

The Committee on Undergraduate Degree Program Review recommended approval of the changes on February 4, 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 February 24, 2016.

Hillary Hart, Secretary
General Faculty and Faculty Council

Posted on the Faculty Council website (http://www.utexas.edu/faculty/council/) on February 11, 2016.
PROPOSED CHANGES TO THE BACHELOR OF SCIENCE IN BIOLOGY DEGREE PROGRAM IN THE COLLEGE OF NATURAL SCIENCES CHAPTER IN THE UNDERGRADUATE CATALOG 2016-2018

Type of Change  ☒ Academic Change
☐ Degree Program Change (THECB form required)

Proposed classification  ☐ Exclusive  ☒ General  ☐ Major

1. IF THE ANSWER TO ANY OF THE FOLLOWING QUESTIONS IS YES, THE COLLEGE MUST CONSULT LINDA DICKENS, DIRECTOR OF ACCREDITATION AND ASSESSMENT, TO DETERMINE IF SACS-COC APPROVAL IS REQUIRED.
   • Is this a new degree program? 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:
   Bachelor of Science in Biology
   Remove warning to students that degree has little flexibility.
   **Rationale:** The newly created common biology core and standardization of course lists across degree options provides flexibility that students did not have in previous catalogs. In several options, specified requirements have been trimmed.

   Prescribed Work Common to All Options
   1) Removal of the minimum hours of upper-division biology and minimum of one biology course from three areas (breadth).
      **Rationale:** The removal of the breadth requirement in general for all degree options (it still exists as it was in some of the options) affords students that have decided on a particular area of biology to have the flexibility to satisfy breadth through a minor in another field of science, certificate, or to select a broad range of upper division courses as electives. In short - removing the list of specific courses required to satisfy “breadth” enables students to choose their own meaning of “breadth” while staying within 120 hours.
   2) Relocate and standardize the introductory courses in biology, chemistry, mathematics, physics, and statistics and data sciences. Reduce calculus requirement in most options to 1 semester; add M 408R as an alternative to M 408C or 408N.
      **Rationale:** There was never a common introductory science core in existence before. In some ways this is more of a presentation change than an actual change as most of the Biology Options already contained most of these courses. The changes were made to standardize the specific Mathematics, Physics, and Chemistry courses required so that students could more easily change their minds about which option to pursue without retaking different introductory courses specific to that option. The biology-related departments determined that 1 semester of calculus is sufficient for most options.
   3) Addition of BIO 370, Evolution, to the Prescribed Work Common to All Options.
      **Rationale:** Like BIO 325, Genetics, every biology degree holder should have a thorough understanding of evolution, as such knowledge is necessary for every upper other division course.
   4) Remove foreign language/foreign culture requirement from the following options: Ecology, Evolution, and Behavior; Marine and Freshwater Science; Microbiology and Infectious Diseases; Cell and Molecular Biology; Plant Biology; and Computational Biology.
**Rationale:** As most scientific literature is in English, this is no longer relevant for biology majors. Students can still take foreign languages as electives as most of the requirements in the options are under 120 hours.

**Option I: Ecology, Evolution, and Behavior**
1) Addition of 1 course chosen from list in cellular, developmental, genetics, microbiology, molecular, or neurobiology coursework.
   **Rationale:** This replaces the standard breadth requirement in a manner more targeted to the specific option.
2) Specifying list from which students will choose 1 additional laboratory course (requirement 8). Previously, students chose a lab from a diverse list containing options from across the sub-disciplines in biology.
   **Rationale:** The labs on the new list are the ones most relevant to the option.
3) Rearrange already required coursework and identify lab choices in requirement #8.
   **Rationale:** The remainder of the changes in this option are a rearrangement of already existing required coursework, and specification of lab choices for an additional laboratory course in requirement 8.

**Option II: Human Biology**
1) Deletion of the concentration requirements in Group A and Group B.
   **Rationale:** Removed for simplification.
2) Adoption of the use of 3 lists of approved courses: 1) genetics, genomics, and computational biology; 2) cellular, developmental, and molecular biology; and 3) ecology, environment, and health.
   **Rationale:** A list of 4 biology disciplines was adopted to make the breadth requirements in the different options consistent where possible, and also updated to reflect 21st century categorizations of sub-disciplines.
3) Specify list from which students will choose 1 additional laboratory course (requirement 8).
   Previously, students chose a lab from a diverse list containing options from across the sub-disciplines in biology.
   **Rationale:** The listed labs are those most relevant to the option.

**Option III: Marine and Freshwater Science**
1) Addition of BIO 373 as a specific requirement.
   **Rationale:** Upper-division courses in Marine Science assume a foundation in ecology. BIO 373, Ecology, was removed from the required coursework for all BS BIO options, so it was included in required courses for the Marine and Freshwater Science option, to ensure that all students had appropriate preparation for Marine Science coursework.
2) Reduction of organic chemistry sequence to CH 320M.
   **Rationale:** Upon further faculty review, it was determined that only the first semester of organic chemistry is necessary as a foundation for other coursework.
3) Removal of 3 hours of geological sciences chosen from courses that may count toward a major in geological sciences. Addition of GEO 341G as an option for one of the sequences in requirement 9.
   **Rationale:** Not all GEO courses that count towards a Geology degree are relevant to Marine Science. After review of current GEO offerings, applicable courses were included under the two-course sequence in requirement 9.
4) Addition of requirement to complete 1 two-course sequence chosen from variety composed of BIO pairs and GRG pairs of courses.
Rationale: Several departments offer courses whose topics are very related to Marine Science. The two-course sequence directs students to pursue a “focus” area that is offered to augment and broaden their background in areas relevant to marine science.

5) Removal of additional upper-division laboratory requirement.
   Rationale: Almost all upper-division Marine Science courses include a significant lab or field component. After reviewing the list of upper-division courses, it became apparent that the two requirements were redundant. It is not possible to complete 12 hours of upper-division coursework in Marine Science without simultaneously completing the laboratory requirement.

6) Update of BIO 101C (Topic 1: Marine Science Seminar) to MNS 101.
   Rationale: Course description for BIO X101C now states “may not be counted toward a degree in the College of Natural Sciences.” This change was made without recalling how it would impact this requirement. Since the Marine Science Seminar is required for all MNS majors, Marine Science is establishing its own course number.

7) Reduce to 12 upper-division hours from approved list in BIO, GEO, and MNS.
   Rationale: The hours from an approved list of BIO, GEO, and MNS courses was reduced from 21 to 12 hours due to the inclusion of other requirements such as the two-course sequence and BIO 373.

Option IV: Microbiology and Infectious Diseases
1) Laboratory requirement changes: Requiring both lab courses to be chosen from a list of 3 courses.
   Previously, only 1 of the 2 labs had to be chosen from a specific list. Deletion of BIO 206L as a specific lab requirement.
   Rationale: BIO 206L was deleted because it does not really prepare students for the upper-division microbiology labs as well as BIO 226L does. Requiring two upper-division labs gives the students a more rigorous training in Microbiology.

Option V: Cell and Molecular Biology
1) Specifying 2 labs from list of 5 upper-division courses. Previously, students chose labs from a diverse list containing options from across the sub-disciplines in biology.
   Rationale: Listed labs are more targeted to this option. Many of these labs did not exist when the original degree plan was written.

2) Addition of 18 hours in upper-division biochemistry, biology, and chemistry.
   Rationale: This replaces the previous standard breadth requirement and targets the hours to courses most relevant to the option.

Option VI: Neurobiology (deletion of option)
1) Delete Neurobiology degree option.
   Rationale: Replaced by BS in Neuroscience, Option III: Neuroscience (proposed for 2016 catalog). The Department of Neuroscience will continue to offer coursework to allow neurobiology students under the 2014-16 catalog to complete the degree prior to the catalog expiration in August 2022.

Option VII: Plant Biology
1) Specifying particular biology courses instead of requiring 21 hours from a list of 19 courses/pairs of courses.
   Rationale: The specification is to ensure that students in this option are taking a sufficient number of plant biology courses.

2) Creation of two sequences from which students choose 1: 1) plant molecular biology, and 2) plant environmental biology.
Rationale: Students interested in environmental studies do not require some of the more molecularly-oriented background courses, such as organic chemistry.

2) Addition of 18 upper-division hours in biochemistry, biology, chemistry, and marine science.
Rationale: This requirement replaces the previous standard breadth requirement and targets it to courses most relevant to the option, while still giving students a lot of choice.

Option VIII: Teaching
1) Reduction in choice of biology courses from which to choose.
   Rationale: This was not a reduction of biology courses in total. Some were pulled into the common biology core.
2) Elimination of a course containing a significant field component.
   Rationale: It is difficult for students to get seats in field courses. Therefore, the faculty broadened the requirement to include a choice of courses with a field component and other courses that emphasized organism-level biology, which is considered the most helpful for secondary level teachers.

Option IX, Biology Honors
1) Adoption of 4 approved lists from which students choose 24 hours: 1) cellular, developmental, and molecular biology; 2) genetics and genomics; 3) physiology, neurobiology, and behavior; and 4) ecology, evolution, and biodiversity.
   Rationale: A list of 4 biology disciplines was adopted to make the breadth requirements in the different options consistent where possible, and also updated to reflect 21st century categorizations of sub-disciplines.

Option X: Computational Biology
1) Adoption of 3 approved lists from which students choose 6 hours: 1) cellular, developmental, and molecular biology; 2) physiology, neurobiology, and behavior; and 3) ecology, evolution, and biodiversity.
   Rationale: Three of the 4 biology disciplines was adopted to make the breadth requirements in the different options consistent where possible, and also updated to reflect 21st century categorization of subdisciplines.
2) Specification of lab requirements (1 lab from core biology coursework; 1 additional lab from requirement 9, chosen from specific list).
   Rationale: The labs on the new list are the ones most relevant to this option.

Option XI: Biology (proposed option)
1) Add option titled Biology.
   Rationale: The Biology option is for students who want a broad education in all aspects of Biology. This degree option will enable the students to explore all areas of biology, and also to explore a particular area in more depth, or to take a minor in another field of science, or a certificate. A student can continue to explore areas of biology the entire time that they are undergraduates and focus on a specialty as juniors or seniors when they find one, or not, and still have a solid biology degree within the constraints of 120 hours. This option prepares students for graduate school, medical school, or an entry-level biotechnology job. It is also highly flexible for students who need time to find what interests them the most, or for students who want the broadest possible biology education.

Option XII: Genetics and Genomics (proposed option)
1) Add option titled Genetics and Genomics
**Rationale:** Genetics and Genomics are among the most important disciplines in biology in the 21st century. This option allows interested students to focus in depth on this important and rapidly changing field that is surely to touch on every aspect of their lives. The option is for pre-medical students, pre-vet students, pre-graduate school students, and for students wanting a career in biotechnology with or without post-baccalaureate education.

3. **THIS PROPOSAL INVOLVES (Please check all that apply)**
   - [X] Courses in other colleges
   - [ ] Courses in proposer’s college that are frequently taken by students in other colleges
   - [ ] Course in the core curriculum
   - [ ] Change in course sequencing for an existing program
   - [ ] Change in admission requirements (external or internal)
   - [ ] Requirements not explicit in the catalog language (e.g., lists of acceptable courses maintained by department office)
   - [X] Courses that have to be added to the inventory
   - [X] Deletion of 1 degree option.
   - [X] Addition of 2 degree options.

4. **SCOPE OF PROPOSED CHANGE**
   a. Does this proposal impact other colleges/schools?  
      Yes [X] No [ ]
      If yes, then how?
      1) Students seeking the BS in Biology will no longer be required to take foreign language and/or foreign culture courses.
      2) Option VII, Marine and Freshwater Science: Courses in the Department of Geography and the Environment are included as options. This may result in a very small increase in the number of Marine and Freshwater Science majors in these courses.
   b. Do you anticipate a net change in the number of students in your college?  
      Yes [ ] No [X]
      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 courses in your college?  
      Yes [ ] No [X]
      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 [X] No [ ]
      If yes, please indicate the number of students and/or class seats involved.
      1) We anticipate a decrease in the number of students who take coursework in Liberal Arts. Most students seeking this degree either have foreign language via placement (no impact on Liberal Arts from these students) or take six hours of foreign culture. It is this second group that will impact seats in Liberal Arts, though the seats are spread across a wide range of fields of study. The fourteen areas of foreign culture are organized thematically in language/culture/geographic areas, such as Japan, Central and South America, and Middle East. Each list may be composed of 20 to 80 courses, in a wide range of fields of study (anthropology, classical civilization, geography, history, philosophy, sociology, e.g.). Thus, students who completed foreign culture for this requirement were not concentrated in any particular set of courses or fields of study.
      2) We anticipate at most a very small increase (3-4 students per year) in seats for the Geography and Geology courses added to Option VII, Marine and Freshwater Science.

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: College of Liberal Arts
Person communicated with: Richard Flores, Senior Associate Dean
Date of communication: February 4, 2016
Response: No objection to removal of foreign language/foreign culture requirement during CUDPR meeting.

How many students do you expect to be impacted? 3 to 4 seats per year
Impacted schools must be contacted and their response(s) included: Jackson School of Geosciences (addition of GEO 341G in Option VII)
Person communicated with: Richard Ketcham, Associate Dean for Academic Affairs
Date of communication: August 22, 2015
Response: I have finally managed to verify with the instructor that including this course in your plan would be fine.

How many students do you expect to be impacted? 3 to 4 seats per year
Impacted schools must be contacted and their response(s) included: Department of Geography and the Environment (GRG courses in Option VII)
Person communicated with: Sheryl Beach (chair) via response from Craig Gilden, senior academic advisor
Date of communication: April 14, 2015
Response: I just want to confirm with you that the department is happy to have some of its classes on the MNS course lists.

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:

Will this proposal change the number of hours required for degree completion? If yes, explain: Yes. If yes, explain: All options other than Option VIII, Teaching, will reduce the overall hours from 126 to 120. This will reduce the need for students to take an overload or enroll in a summer session or additional long semester.

5. COLLEGE/SCHOOL APPROVAL PROCESS
Department approval date: April 6, 2015; August 24, 2015 (MNS only); September 15, 2015
College approval date: May 27, 2015; September 2, 2015 (MNS only); September 28, 2015
Dean approval date: September 28, 2015, David Vanden Bout, Associate Dean

PROPOSED NEW CATALOG TEXT:

BACHELOR OF SCIENCE IN BIOLOGY

The Bachelor of Science in Biology degree program offers ten options. The options have certain prescribed work in common, and each option has additional requirements. Many fields in the study of biological systems require broadly based training that transcends the classical boundaries of biology. In planning a program of work to meet his or her degree requirements, a student interested in specializing in these interdisciplinary areas should choose courses both in biology and in sciences that complement biology. Students who plan to complete the program within four years will have little flexibility in course selection unless they plan a schedule in advance. More information is given in order and choice of work below. Students who plan to follow option IX, biology honors, must be admitted to the Dean’s Scholars Honors Program.
Prescribed Work Common to All Options

All students pursuing an undergraduate degree must complete the University’s Core Curriculum. In addition, students seeking the Bachelor of Science in Biology must complete the following degree-level requirements. In some cases, courses that fulfill degree-level requirements also meet the requirements of the core.

1. Two courses with a writing flag. One of these courses must be upper-division.
2. One course with a quantitative reasoning flag.

Courses with flags are identified in the Course Schedule. They may be used simultaneously to fulfill other requirements, unless otherwise specified.

3. Options I, III–VII and X: One of the following foreign language/culture choices. Students in options II, VIII, and IX are exempt from this requirement.
   a. Second semester level proficiency, or the equivalent, in a foreign language.
   b. First semester level proficiency, or the equivalent, in a foreign language and a three semester-hour course in the culture of the same language area.
   c. Two three semester-hour courses in one foreign culture area chosen from an approved list available in the dean’s office and the college advising centers.

4. At least twenty-four semester hours of upper-division coursework beyond Biology 325 in biology and approved related fields, including at least one course from each of the following areas. In most options, the student must use specific courses to meet this requirement; these courses are listed in Additional Prescribed Work for Each Option.

3. Courses common to all Bachelor of Science in Biology degree options except for option IX.
   a. Cellular, developmental, and molecular biology: Biology 320, 326R, 344, 349, Mathematics 408C, 408R, or 408N and 408S. Students who intend to take additional calculus coursework should begin the sequence with 408C or 408N.
   b. Physiology and neuroscience: Biology 328, 361T, 365S, Neuroscience 365R, Statistics and Data Sciences 328M.
   c. Ecology, evolution, and behavior: Biology 357, 359K, 370, 373, Chemistry 301 or 301H, 302 or 302H, and 204.
   d. One of the following sequences:
      i. Physics 317K, 117M, 317L, and 117N (recommended)
      ii. Physics 301, 101L, 316, and 116L
      iii. Physics 303K, 103M, 303L, and 103N
      iv. Physics 302K, 102M, 302L, and 102N
   Option VIII Teaching majors may substitute Science 365 and Physics 108 for Physics 316 and 116L, 317L and 117N, 303L and 103N, or 302L and 102N; Physics 108 is offered on the pass/fail basis.
   e. Biology, including:
      i. Biology 311C, 311D, and 325, or 315H and 325H.
      ii. Biology 206L, 208L, or 226L. This requirement must be completed prior to progressing to additional laboratory requirements in the degree options. Students pursuing option III, Marine and Freshwater Science, and option IV, Microbiology and Infectious Diseases, must complete Biology 226L. Students pursuing option VIII, Teaching, must complete either Biology 206L or 208L.
      iii. Biology 370.

4. All students must complete at least thirty-six semester hours of upper-division coursework; at least twenty-one semester hours of upper-division coursework in biology must be completed in residence at the University.

Additional Prescribed Work for Each Option

Option I: Ecology, Evolution, and Behavior

5. Mathematics 408C and 408D, or 408N and 408S. One course or pair of courses in each of the following areas:
6. An eight-semester-hour sequence of coursework in physics chosen from the following: Three additional courses or pair of courses chosen from coursework in 5a through 5c and from Biology 438L, 471G, 456L, 359R, 364, 364E, 472L, 373L, 374 and 174L, 375, 478L, Marine Science 352C and 354Q.
   a. Physics 301L, 101L, 316, and 116L;
   c. Physics 303K, 103M, 303L, and 103N; or
   d. Physics 302K, 102M, 302L, and 102N


8. Either Biology 311C, 311D, and 325 or Biology 315H and 325H, these courses must be completed before the student progresses to other upper division biology courses. One laboratory course or pair of courses containing a substantial field component: Biology 321L, 340L, 353F, 453L, 354L, 455L, 456L, 369L, 373L, Marine Science 320 and 120L, 352C, 352D, 354, 354C, 354E. A laboratory course or pair of courses may also count toward requirements 5 through 7.

9. At least four laboratory courses in biology: three of these courses must be upper-division. One of the four courses must have a field component; the following courses may be used to meet this requirement: Biology 321L, 340L, 453L, 455L, 456L, 369L, 373L, Marine Science 352D, 354, 354C. One additional laboratory course: Biology 320L, 321L, 124L, 127L, 340L, 352, 353F, 354L, 455L, 456L, 369L, 373L, Marine Science 320 and 120L, 352C, 352D, 354, 354C, 354E. One-hour laboratory courses may require credit for or registration in a complementary lecture course. A laboratory course may also count toward requirements 5 through 7. A course counted toward requirement 8 may not also count toward requirement 9.

10. Statistics and Data Sciences 328M and three hours of coursework One course chosen from the following: Statistics and Data Sciences 328M, Computer Science 303E or 313E or the equivalent. Geological Sciences 401 or 303, or an upper division mathematics courses Statistics and Data Sciences 332 or 348.

11. Additional coursework to make a total of 120 semester hours. In fulfilling requirement 4 of the Prescribed Work Common to All Options above, the student must complete the following courses; no single course may be used to meet more than one of these requirements:
   b. Evolution: Biology 370.
   c. Behavior and comparative physiology: Biology 322 and 122L, 350K, or 361T.
   e. Six additional hours chosen from the following:
      i. Evolution: Biology 372L, 374 and 174L, 478L.
      iii. Behavior: Biology 438L, 350L, 359R.

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

**Option II: Human Biology**

5. Mathematics 408C or 408N, and Statistics and Data Sciences 328M. Chemistry 320M, 320N, 220C.

6. One of the following courses: Mathematics 408D, 408S, or Statistics and Data Sciences 348, Biochemistry 369 or 339F.

7. An eight-semester-hour sequence of coursework in physics chosen from the following: Biology 346.
   a. Physics 301L, 101L, 316, and 116L;


10. At least four laboratory courses in biology and related fields, including Biology 206L or 208L. Three of these courses must be upper division, including one course in biology. Courses that may count toward the laboratory requirement are marked with an asterisk. Three hours from ecology, environment, and health: Biology 326R, 327D, 329, 330, 361, 364, Nutrition 306 or 312.

11. Chemistry 220C, 320M, and 320N. Four hours from physiology and anatomy: Biology 446L, 365S and 165U, 478L.


f. Physiology: Biology 361T, 365S, Neuroscience 365R.

h. Evolution and ecology: Biology 357, 361, 370, 373.

13. In fulfilling requirement 4 of the Prescribed Work Common to All Options above, the student must complete at least fifteen semester hours of coursework, including at least nine hours of upper division work, from one of the two following groups of concentrations. A course counted toward requirement 13 may not also be counted toward requirement 14—Enough additional coursework to make a total of 120 semester hours.

Group A: Biochemistry 369 and twelve additional hours chosen from the following concentrations.


Group B: Fifteen hours from the following concentrations; only one of the following courses may be counted: Anthropology 432L*, Biology 446L*, 478L*, or Kinesiology 324K*. Sociology 319 and 369K may not both be counted.


d. Human variation and evolution: Biochemistry 369 and twelve hours chosen from the following courses: Anthropology 432L*, 446L*, 478L*, Kinesiology 324K*.
15. Enough additional coursework to make a total of 120 semester hours.

**Option III: Marine and Freshwater Science**

5. Mathematics 408C and 408D, or 408N and 408S. Chemistry 320M.
6. An eight-semester-hour sequence of coursework in physics chosen from the following: Biology 326R, 226L, and 373.
   a. Physics 301L, 101L, 316, and 116L;
   c. Physics 303K, 103M, 303L, and 103N;
   d. Physics 302K, 102M, 302L, and 102N
7. Mathematics 408C and 408D, or 408N and 408S. Chemistry 320M.
8. An eight-semester-hour sequence of coursework in physics chosen from the following: Biology 326R, 226L, 316, and 116L.
   a. Physics 301L, 101L, 316, and 116L;
   c. Physics 303K, 103M, 303L, and 103N;
   d. Physics 302K, 102M, 302L, and 102N
9. Either Biology 311C, 311D, and 325 or Biology 315H and 325H; these courses must be completed before the student progresses to other upper-division biology courses.
11. Marine Science 101, 310, and 320L. Biology 226L and 326R.
13. In fulfilling requirement 4 of the Prescribed Work Common to All Options above, the student must complete the following courses:
   i. Biology 226L and 326R.
   ii. Marine Science 320 and 120L.
   k. At least twenty-one semester hours of coursework chosen from the following: Biology 321L, 327, 127L, 328, 128L, 354L, 361T, 370, 375, Geological Sciences 422K, Marine Science 440, 352C, 352D, 353 (Topic 17: Marine Fish Physiology), 354C, 354Q, 354T, 354U, 356, 357, 367K, 170, 270, 370, Biology 418L or Marine Science 384, Biology 364 or Marine Science 354E; six hours of this coursework must be completed at the Marine Science Institute at Port Aransas.
14. Enough additional coursework to make a total of 126 semester hours.

**Option IV: Microbiology and Infectious Diseases**

5. Mathematics 408C or 408N and Statistics and Data Sciences 328M. Biochemistry 369 or 339F, and Chemistry 320M.
   a. Physics 301L, 101L, 316, and 116L;
   c. Physics 303K, 103M, 303L, and 103N;
   d. Physics 302K, 102M, 302L, and 102N
Chemistry 301 or 301H, 302 or 302H, 201, and Chemistry 220C, 320M, 320N, and Biochemistry 369.
Two upper-division biology laboratory courses chosen from: Biology 230L, 160L, and 361L. Biology 377-FRI/377/379H may be used for one of the laboratory courses if approved in advance by the microbiology faculty adviser.

9. Biology 311C, 311D, and 325 or Biology 315H and 325H; these courses must be completed before the student progresses to other upper-division biology courses. Fifteen additional hours in upper-division biochemistry, biology, and chemistry.

10. Biology 206L. Enough additional coursework to make a total of 126 semester hours.
11. Two upper-division biology laboratory courses, one of which must be chosen from Biology 230L, 160L, and 361L. Biology 377-FRI/377/379H may be used for the second course if approved in advance by the microbiology faculty adviser. Biology 226L may not be used to fulfill this requirement.
12. In fulfilling requirement 4 of the Prescribed Work Common to All Options above, the student must complete the following courses: Biology 326L, 326R, 320, 330, 360K, 366, 370, and 320 or 344.
13. Enough additional coursework to make a total of 126 semester hours.

Option V: Cell and Molecular Biology
5. Mathematics 408C or 408N and Statistics and Data Sciences 328M, Biochemistry 369 or 339F, and Chemistry 320M.
6. An eight-semester-hour sequence of coursework in physics chosen from the following: Biology 320, 326R, 349, and 344 or 350M.
   a. Physics 301, 101L, 316, and 116L;
   c. Physics 303K, 103M, 303L, and 103N.
7. Chemistry 301 or 301H, 302 or 302H, 204, 220C, 320M, 320N, and Biochemistry 369. Two laboratory courses chosen from: Biology 320L, 230L, 323L, 325L, 331L, 349L.
8. Either Biology 311C, 311D, and 325 or Biology 315H and 325H; these courses must be completed before the student progresses to other upper division biology courses. One additional upper-division laboratory course in biology. Biology 377-FRI/377/379H may be used if approved in advance by the cell and molecular biology faculty adviser.
9. At least four laboratory courses in biology, of which three must be upper division; Biology 377-FRI/377/379H may be used for the second course if approved in advance by the cell and molecular biology faculty adviser. Eighteen additional hours in upper-division biochemistry, biology, and chemistry.
10. In fulfilling requirement 4 of the Prescribed Work Common to All Options above, the student must complete the following courses: Enough additional coursework to make a total of 120 semester hours.
   d. Biology 320 and 344.
   e. Biology 226L, 326R, 349, 370, and one of the following: 320L, 331L, 349L.
   f. Biology 328, 365S, Neuroscience 365R.
12. Enough additional coursework to make a total of 126 semester hours.

Option VI: Neurobiology
6. Mathematics 408C and 408D, or 408N and 408S.
7. An eight-semester-hour sequence of coursework in physics chosen from the following:
   a. Physics 301, 101L, 316, and 116L;
   c. Physics 303K, 103M, 303L, and 103N;
   d. Physics 302K, 102M, 302L, and 102N.
8. Chemistry 301 or 301H, 302 or 302H, 204, 220C, 320M, and 320N.
9. Either Biology 311C, 311D, and 325 or Biology 315H and 325H; these courses must be completed before the student progresses to other upper division biology courses.
10. At least four laboratory courses in biology. The student must complete Biology 206L, and at least nine semester hours chosen from the following courses: Biology 320L, 325L, 331L, 371L, 478L, Electrical Engineering 374L, Neuroscience 365L, 366L, 478L, 366P, 366S.

11. In fulfilling requirement 4 of the Prescribed Work Common to All Options above, the student must complete the following courses:
   a. Biology 320, 344, 349, 370, and Neuroscience 365R.
   b. Six semester hours chosen from the following courses: Biology 359K, 365N, Neuroscience 365D, 365T, 365W, 366C, 366D, 466G, Psychology 353K.
   c. Six semester hours chosen from the following courses: Biology 328M or Statistics and Data Sciences 328M, Biology 321G, 337I, Chemistry 353 or 353M, 354, Biochemistry 369, 370, Computer Science 313E, 323E, 324E, 326E, 327E, Electrical Engineering 411, 313, 325, 438, 438K, 351K, 371K.
   d. Three additional semester hours chosen from the following courses: Computer Science 303E, Psychology 308, 332, or 353K.

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

Option VII: Plant Biology

5. Mathematics 408C or 408N and Statistics and Data Sciences 328M, Biology 328, 373, and 322 and 122L, 324 and 124L, or 463L.

6. An eight-semester-hour sequence of coursework in physics chosen from the following: Two additional upper-division laboratory courses: Biology 377-FRI/377/379H may be used for one of the laboratory courses if approved in advance by the plant biology faculty adviser.
   a. Physics 301, 101L, 316, and 116L;
   c. Physics 303K, 103M, 303L, and 103N;
   d. Physics 302K, 102M, 302L, and 102N.

7. Chemistry 301 or 301H, 302 or 302H, 204, 220C, 320M, and 320N. One of the following sequences:

8. Either Biology 311C, 311D, and 325 or Biology 315H and 325H; these courses must be completed before the student progresses to other upper-division biology courses. Eighteen additional hours in upper-division biochemistry, biology, chemistry, and marine science.

9. Four biology laboratory courses, of which three must be upper-division; one of which must be chosen from Biology 206L or 208L; Biology 377-FRI/377/379H may be used for the second course if approved in advance by the plant biology faculty adviser. Enough additional coursework to make a total of 120 semester hours.

11. In fulfilling requirement 4 of the Prescribed Work Common to All Options above, the student must complete at least twenty-four hours of coursework chosen from the following: Biology 320, 320L, 322 and 122L, 323L, 324 and 124L, 327 and 127L, 328, 328D, 331L, 350M, 351, 352, 370, 472L, 373, 373L, 374 and 474L, 375, and Biochemistry 369.

12. Eleven additional semester hours of upper-division coursework in the College of Natural Sciences or the Jackson School of Geosciences; a course may not be counted toward this requirement if it does not fulfill major requirements in the department that offers it.

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

Option VIII: Teaching

This option is designed to fulfill the course requirements for certification as a middle grades or secondary school science teacher in Texas; the student chooses either composite science certification with biology as the primary teaching field or life science certification. However, completion of the course requirements does not guarantee the student’s certification. Information about additional certification requirements is available from the UTeach-Natural Sciences academic adviser.

5. Mathematics 408C and 408D, or 408N and 408S.

6. An eight-semester-hour sequence of coursework in physics chosen from the following:
   a. Physics 301, 101L, 316, and 116L;
Science 360 (Topic 4: Physics by Inquiry) and Physics 108 may substitute for Physics 316 and 116L, 317L, and 117N, 303L and 103N, or 302L and 102N. Physics 108 is offered on the pass/fail basis.

5. Chemistry 301 or 301H, 302 or 302H, 204, and either Chemistry 320M, 320N, and 220C or 320M and Biochemistry 369.

6. 8. Either Biology 314C, 311D, and 325 or 315H and 325H. These courses must be completed before the student progresses to other upper-division biology courses.

9. At least four laboratory courses in biology. Three of these courses must be upper-division. The student must complete Biology 206L or 208L.

7. 10. In fulfilling requirement 4 of the Prescribed Work Common to All Options above, the student must complete the following courses: Biology courses:
   a. Biology 320, 226L, 326R, 370, and either 324 and 124L, or 322 and 122L, or 328 and 128L.

8. One of the following research methods courses: Biology 328D, 337 (Topic 2: Research Methods: UTeach), Chemistry 368 (Topic 1: Research Methods: UTeach), Physics 341 (Topic 7: Research Methods: UTeach).

9. 4a. History 329U or Philosophy 329U.

10. 4b. One of the following:
   a. For composite science certification: Biochemistry 369 (to be counted as upper-division biology hours) and six semester hours of coursework in geological sciences. Courses intended for nonscience majors may not be counted toward this requirement. The remaining composite certification content requirements are met by the chemistry, physics, and science courses used to fulfill requirements 7 and 8 3c, 3d, 3e, and 5.
   b. For life science certification: Biology 373, and three additional semester hours of biology chosen from the courses listed in requirements 7b and 7c 11b.

11. Eighteen semester hours of professional development coursework consisting of:
   a. Curriculum and Instruction 650S.
   b. Curriculum and Instruction 365C or UTeach-Natural Sciences 350.
   c. Curriculum and Instruction 365D or UTeach-Natural Sciences 355.
   d. Curriculum and Instruction 365E or UTeach-Natural Sciences 360.
   e. UTeach-Natural Sciences 101, 110, and 170.

12. Students seeking middle grades certification must complete the following courses: Educational Psychology 363M (Topic 3: Adolescent Development), or Psychology 301 and 304; and Curriculum and Instruction 339E.

13. 4c. Enough additional coursework to make a total of 126 semester hours.

Option IX: Biology Honors

5. Breadth requirement: An honors mathematics course; Biology 315H and 325H; Chemistry 301H and 302H; and one of the following: an additional three-hour honors-designated course from a department in the College of Natural Sciences, computer science course; a three-hour honors-designated statistics course; Physics 301 and 101L; Physics 315 and 115L; or Physics 316 and 116L. Credit earned by examination may not be counted toward this requirement.

6. An eight-semester-hour sequence of coursework in physics chosen from the following:
   a. Physics 301, 101L, 316, and 116L;
   b. Physics 317K, 117M, 317L, and 117N; or
   c. Physics 303K, 103M, 303L, and 103N

Courses used to satisfy this requirement may also be counted toward requirement 6.
7. Biology 206L or 208L and Chemistry 204, 128K, 128L, 328M, and 328N.
8. In fulfilling requirement 1 of the Prescribed Work Common to All Options above, the student must complete Biology 320 or 344, 349, 370, Neuroscience 365R, and at least twelve additional semester hours of upper-division coursework in biology chosen from a list available in the student’s advising office. Six semester hours of thesis coursework may be counted toward the twelve semester hours of upper-division biology. Complete twenty-four hours chosen freely from the following lists:
   a. Biology 370.
9. Three upper-division laboratory courses in biology; Biology 377 or 379H may be used as only one of the three required upper-division laboratory courses. Courses used to fulfill this requirement may also be counted toward requirement 8.
10. A section of Undergraduate Studies 302 or 303 that is approved by the departmental honors adviser.
11. A section of Rhetoric and Writing 309S that is restricted to students in the Dean’s Scholars Honors Program.
12. Two semesters of Biology 379H.
13. Fifteen additional semester hours of coursework approved by the departmental honors adviser.
14. Six semester hours of coursework in the College of Liberal Arts or the College of Fine Arts.
15. Enough additional coursework to make a total of 120 semester hours.

Option X: Computational Biology
5. Mathematics 108C and 108D, or 408N, 408S, and 408M; Statistics and Data Sciences 329C or Mathematics 340L or 341; Mathematics 362K or Statistics and Data Sciences 321; and Mathematics 358K or 378K or Statistics and Data Sciences 348, 321, or 324H or 328M.
   a. Physics 301, 101L, 316, and 116L;
   b. Physics 317K, 117M, 317L, and 117N; or
   c. Physics 303K, 103M, 303L, and 103N.
8. Chemistry 301 or 301H, 302 or 302H, and 304. Six hours chosen freely from the following lists:
9. Either Biology 311C, 311D, and 325 or Biology 315H and 325H; these courses must be completed before the student progresses to other upper-division biology courses. One additional laboratory course chosen from: Biology 320L, 122L, 323L, 124L, 128L, 129L, 325L, 328D, 230L, 331L, 340L, 446L.
10. In fulfilling requirement 4 of the Prescribed Work Common to All Options above, the student must complete Biology 321G, 370, and six additional hours of upper-division coursework in biology. Nine hours of additional upper-division biochemistry, biology, chemistry, marine science, mathematics, physics, and statistics and data sciences.

11. Four biology laboratory courses, of which three must be upper-division; Biology 321G and Statistics and Data Sciences 328M may fulfill two of these upper-division requirements. Enough additional coursework to make a total of 120 semester hours.

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

Option XI: Biology
10. Twelve additional hours in upper-division biochemistry, biology, chemistry, marine science, mathematics, statistics and data sciences, and physics.
11. Enough additional coursework to make a total of 120 semester hours.

Option XII: Genetics and Genomics
5. Biochemistry 369 or 339F.
6. Biology 325T, 349, 344, and 325L.
7. Chemistry 320M.
10. Biology 320L or 349L.
11. Twelve additional hours in upper-division biochemistry, biology, chemistry, mathematics, and statistics and data sciences.
12. Enough additional coursework to make a total of 120 semester hours.

Special Requirements

Students in all options must fulfill both the University’s General Requirements for graduation and the college requirements. They must also earn a grade of at least C- in each mathematics and science course required for the degree, and a grade point average in these courses of at least 2.00. More information about grades and the grade point average is given in General Information.

To graduate and be recommended for certification, students who follow the teaching option must have a University grade point average of at least 2.50. They must earn a grade of at least C- in the supporting course in requirement 12, 9, and in each of the professional development courses listed in requirement 14, 11 and must pass the final teaching portfolio review; those seeking middle grades certification must also earn a grade of at least C- in each of the courses listed in requirement 14, 12. For information about the portfolio review and additional teacher certification requirements, students should consult the UTeach-Natural Sciences academic adviser.
To graduate under the honors option, students must remain in good standing in the Dean’s Scholars Honors Program, must submit an honors thesis approved by the departmental honors adviser, and must present their research in an approved public forum, such as the college’s annual Undergraduate Research Forum. More information about the Undergraduate Research Forum is available at https://cns.utexas.edu/.

**Order and Choice of Work**

Students begin the Bachelor of Science in Biology degree program with six hours of introductory biology for science majors (Biology 311C and 311D), as well as Chemistry 301 or 301H and 302 or 302H and Mathematics 408C, 408N, or 408R or 408N. The genetics course, Biology 325, is prerequisite to other upper-division biology courses. Students should consult with academic advisers about specific concentrations within biology, about appropriate courses in mathematics and physical sciences, and about course load and the balance between laboratory and nonlaboratory work. Most students select an option by the end of the second year and take at least twenty-one hours of upper-division coursework in the major in the third and fourth years.
PROPOSED CHANGES TO THE BACHELOR OF SCIENCE IN COMPUTER SCIENCE DEGREE PROGRAM IN THE COLLEGE OF NATURAL SCIENCES CHAPTER IN THE UNDERGRADUATE CATALOG 2016-2018

Dean Linda Hicke in the College of Natural Sciences 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 general interest to more than one college or school.

The Committee on Undergraduate Degree Program Review recommended approval of the changes on February 4, 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 February 24, 2016.

Hillary Hart, Secretary
General Faculty and Faculty Council

Posted on the Faculty Council website (http://www.utexas.edu/faculty/council/) on February 11, 2016.
PROPOSED CHANGES TO THE BACHELOR OF SCIENCE IN COMPUTER SCIENCE DEGREE PROGRAM IN THE COLLEGE OF NATURAL SCIENCES CHAPTER IN THE UNDERGRADUATE CATALOG 2016-2018

Type of Change  ☒ Academic Change  
☐ Degree Program Change (THECB form required)

Proposed classification  ☒ Exclusive  ☒ General  ☒ Major

1. IF THE ANSWER TO ANY OF THE FOLLOWING QUESTIONS IS YES, THE COLLEGE MUST CONSULT LINDA DICKENS, DIRECTOR OF ACCREDITATION AND ASSESSMENT, TO DETERMINE IF SACS-COC APPROVAL IS REQUIRED.

• Is this a new degree program?  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:

1. Streamline the first science sequence requirements in Options I, II, and IV by removing the biology and chemistry labs and the two-course geological sciences sequence. Create more flexibility for students who want to study physics by allowing any calculus-based physics sequence, including mixed sequences, to count without need of petitions.

   Rationale: Experience with lab work in biology and chemistry is not necessary for computer scientists working in biology and chemistry as computational specialists. The physics laboratory courses are co-requisites for the physics lecture courses; hence these labs cannot be removed. Computer science students often take the engineering physics sequence but any calculus-based physics sequence is suitable. Writing the requirement as the first half of the three sequences and the second half of the three sequences allows students who switch sequences midstream without the need to file petitions. These changes are a formalization of a long-standing departmental policy of counting other calculus-based physics sequences, including mixed sequences.

   The Jackson School of Geosciences restricts enrollment in its major-level coursework to majors, making it extremely difficulty for students to complete this sequence. The only geological science courses readily available are GEO 401 or courses designed for non-science majors that are not suitable for computer science majors.

2. Reduce the second science sequence requirement in Options I, II, and IV from a full-year sequence to a one semester experience. Allow requirement to be completed with a course from one of the sequences previously listed in requirement #7, geological sciences, or upper-division course in mathematics as an alternative.

   Rationale: The computer science faculty determined that exposure to science outside of computer science is beneficial but that another year of science is unnecessary. In addition, the science courses are not prerequisites for other requirements on the BS in Computer Science. Computer science is closely related to mathematics and is a good choice for students who wish to explore the theoretical foundations of computer science.

3. Increase by 1 the number of upper-division computer science honors courses required; exclude CS 429H from applying toward this requirement, in Option II.

   Rationale: Prior to the computer science curriculum overhaul in the 2014-16 catalog, Option II majors were required to complete 5 upper-division computer science honors courses when choosing courses to fulfill requirements 9a through 9e. The number was reduced to 4 in the 2014-16 catalog, in error.

   Regarding the exclusion of CS 429H, the course is primarily made up of content previously offered as CS 310H and EE 316. An introductory course in systems was not applicable toward the 5 required
honors courses.
Taken together, these changes re-establish the honors requirement as intended by the Department of Computer Science.

4. Remove CS 353, Theory of Computation, in Option IV, 9d; consequently, delete 9e and move its requirements up to 9d.
   **Rationale:** CS 353 was listed as a required course in error in the 2014-16 catalog. Its removal corrects this error.

5. Reduce the total hours to 120 in Options I and II.
   **Rationale:** Reducing science requirements outside of computer science creates the opportunity to reduce the overall hours of the degree to 120 hours. The faculty would prefer that students graduate earlier or have more free time in their schedules to explore extracurricular activities that may assist them in personal and professional growth. Options III and IV are already at 120 hours. Option V, Teaching, cannot be reduced due to extensive certification requirements of the state of Texas.

6. Remove CS 312H from list of classes that may be taken by students who are not yet admitted to the Computer Science major. Clarify that enrollment in CS 312, 311 or 311H, and 314 or 314H is restricted to students admitted to the CS entry-level major.
   **Rationale:** CS 312 is removed because the course has never been developed and consequently will never be offered. The statement that CS 312, 311 or 311H, and 314 or 314H are open only to CS entry-level majors is added to reflect ongoing enrollment restrictions.

3. **THIS PROPOSAL INVOLVES (Please check all that apply)**
   - [x] Courses in other colleges
   - [ ] Courses in proposer’s college that are frequently taken by students in other colleges
   - [ ] Course in the core curriculum
   - [ ] Change in admission requirements (external or internal)
   - [ ] Change in course sequencing for an existing program
   - [ ] Requirements not explicit in the catalog language (e.g., lists of acceptable courses maintained by department office)
   - [ ] Courses that have to be added to the inventory
   - [ ] Flags

4. **SCOPE OF PROPOSED CHANGE**
   a. Does this proposal impact other colleges/schools?
      - Yes [x] No [ ]
      If yes, then how? Removing one geology course and the electrical engineering sequences will slightly reduce enrollments in the impacted courses for these two departments. See details below.
   b. Do you anticipate a net change in the number of students in your college?
      - Yes [ ] No [x]
      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 [x]
      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 [x] 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? At most, 18 seats in GEO 401 across the academic year; and eighteen seats in other lower-division GEO courses across the academic year.

   Impacted schools must be contacted and their response(s) included:
   - Person communicated with: Rich Ketchum, Associate Dean, Jackson School of Geosciences
   - Date of communication: February 10, 2016
Response: approved compromise proposed by Natural Sciences (reduction of GEO from two courses to one)

How many students do you expect to be impacted? At most, eighteen seats in EE 313 across the academic year; and 18 seats in EE 331 across the academic year.

Impacted schools must be contacted and their response(s) included:
Person communicated with: Dr. Ahmed Tewfik, Department of Electrical and Computer Engineering
Date of communication: April 10, 2015
Response: “Hi Doug, Our curriculum committee is fine with this change. Regards, Ahmed”

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? If yes, explain: **Yes.**

   Options I and II will be reduced to 120 hours (from 127 hours). If yes, explain:

   Due to the reduction in science coursework apart from computer science and mathematics, students may fulfill the degree requirements within 120 hours, including room for electives.

5. **COLLEGE/SCHOOL APPROVAL PROCESS**

   Department approval date: March 4, 2015
   College approval date: May 20, 2015
   Dean approval date: September 28, 2015, David Vanden Bout, Associate Dean

PROPOSED NEW CATALOG TEXT:

**BACHELOR OF SCIENCE IN COMPUTER SCIENCE**

[no changes]

**Prescribed Work Common to All Options**

[no changes]

**Additional Prescribed Work for Each Option**

**Option I: Computer Science**

6. Mathematics 408C and 408D, or 408N, 408S, and 408M; either 340L or 341 or Statistics and Data Sciences 329C; and Mathematics 362K or Statistics and Data Sciences 321.

7. One of the following sequences of coursework:
   a. Either Biology 311C and 311D, or Biology 315H and 325H, and Biology 206L or 208L.
   b. Chemistry 301 or 301H, and 302 or 302H, and 204.
   c. Geological Sciences 401 and either 404C or 405. Physics 303K and 103M, 301 and 101L, or 317K and 117M; and 303L and 103N, 316 and 116L, or 317L and 117N.
   d. Physics 303K, 303L, 103M, and 103N.

8. Three additional hours of majors-level coursework chosen from:
   a. a different sequence listed in requirement 7.
   b. **geological sciences**.
c. upper-division mathematics, excluding 325K, 340L, 341, and 362K. An additional sequence chosen from those in requirement 7 above, or one of the following:
   a. At least six hours of upper-division coursework in biology approved by the undergraduate adviser.
   b. Chemistry 128K, 128L, 328M, and 328N, or Chemistry 220C, 320M, and 320N, or at least six hours of upper-division coursework in chemistry approved by the undergraduate adviser.
   c. Geological Sciences 416K and 426P, or at least six hours of upper-division coursework in geological sciences approved by the undergraduate adviser.
   d. Physics 315 and at least three hours of upper-division coursework in physics approved by the undergraduate adviser.
   e. At least six hours of upper-division coursework in mathematics approved by the undergraduate adviser; a course may not be counted toward both requirement 6 and requirement 8.
   f. Electrical Engineering 313 and 331.

9. The following courses in computer science:
   a. Theory: Computer Science 311 or 311H, 331 or 331H, and three additional hours from an approved list available in the department.
   b. Programming: Computer Science 312 or 312H, 314 or 314H, and three additional hours from an approved list in the department.
   c. Systems: Computer Science 429 or 429H, 439 or 439H, and three additional hours from an approved list available in the department.
   d. Fifteen additional hours of upper-division courses in computer science.

10. Enough additional coursework to make a total of 127 semester hours.

Option II: Turing Scholars Honors

6. Mathematics 408C and 408D, or 408N, 408S, and 408M; either 340L or 341 or Statistics and Data Sciences 329C; and Mathematics 362K or Statistics and Data Sciences 321.

7. One of the following sequences of coursework:
   a. Either Biology 311C and 311D, or Biology 315H and 325H; and Biology 206L or 208L.
   b. Chemistry 301 or 301H, and 302 or 302H, and 204.
   c. Geological Sciences 401 and either 404C or 405. Physics 303K and 103M, 301 and 101L, or 317K and 117M; and 303L and 103N, 316 and 116L, or 317L and 117N.
   d. Physics 303K, 303L, 103M, and 103N.

8. Three additional hours of majors-level coursework chosen from:
   a. a different sequence listed in requirement 7.
   b. geological sciences.
   c. upper-division mathematics, excluding 325K, 340L, 341, and 362K.

An additional sequence chosen from those in requirement 7 above, or one of the following:
   a. At least six hours of upper-division coursework in biology approved by the undergraduate adviser.
   b. Chemistry 128K, 128L, 328M, and 328N, or Chemistry 220C, 320M, and 320N, or at least six hours of upper-division coursework in chemistry approved by the undergraduate adviser.
   c. Geological Sciences 416K and 426P, or at least six hours of upper-division coursework in geological sciences approved by the undergraduate adviser.
   d. Physics 315 and at least three hours of upper-division coursework in physics approved by the undergraduate adviser.
   e. At least six hours of upper-division coursework in mathematics approved by the undergraduate adviser; a course may not be counted toward both requirement 6 and requirement 8.
   f. Electrical Engineering 313 and 331.

9. The following courses in computer science:
   a. Theory: Computer Science 311 or 311H, 331 or 331H, and three additional hours from an approved list available in the department.
b. Programming: Computer Science 314 or 314H, and three additional hours from an approved list available in the department.
c. Systems: Computer Science 429 or 429H, 439 or 439H, and three additional hours from an approved list available in the department.
d. Computer Science 178H and 379H.
e. Twelve additional hours of upper-division courses in computer science.

The courses the student chooses to fulfill requirements a through c must be approved by the Turing Scholars program director. In addition to Computer Science 429H, 178H and 379H, at least four five upper-division courses chosen to fulfill requirements a through e must be honors courses. The honors thesis the student completes in Computer Science 379H must be approved by the program director.

10. Enough additional coursework to make a total of 127 120 semester hours.

Option III: Computer Science Honors

6. Breadth requirement: An honors mathematics course; Computer Science 311H and 314H; one of the following two-semester sequences: Biology 315H and 325H, Chemistry 301H and 302H, Physics 301, 101L, 316, and 116L; and either an additional three hours chosen from these courses or Physics 315 and 115L. Credit earned by examination may not be counted toward this requirement.
7. At least six semester hours of upper-division coursework in mathematics.
8. Computer Science 429H, 331H, 439H, and twelve additional hours of upper-division coursework in computer science.
9. A section of Undergraduate Studies 302 or 303 that is approved by the departmental honors adviser.
10. A section of Rhetoric and Writing 309S that is restricted to students in the Dean's Scholars Honors Program.
11. Computer Science 379H and a three-semester-hour upper-division research course approved by the departmental honors adviser.
12. Twenty-five additional semester hours of coursework approved by the departmental honors adviser.
13. Six semester hours of coursework in the College of Liberal Arts or the College of Fine Arts.
14. Enough additional coursework to make a total of 120 semester hours.

Option IV: Integrated Program

6. Mathematics 408C and 408D, or 408N, 408S, and 408M; either 340L or 341 or Statistics and Data Sciences 329C; and Mathematics 362K or Statistics and Data Sciences 321.
7. One of the following sequences of coursework:
   a. Either Biology 311C and 311D, or Biology 315H and 325H; and Biology 206L or 206N.
   b. Chemistry 301 or 301H, and 302 or 302H, and 204.
   c. Geological Sciences 401 and either 404C or 405. Physics 303K and 103M, 301 and 101L, or 317K and 117M; and 303L and 103N, 316 and 116L, or 317L and 117N.
   d. Physics 303K, 303L, 103M, and 103N.
8. Three additional hours of majors-level coursework chosen from:
   a. a different sequence listed in requirement 7.
   b. geological sciences.
   c. upper-division mathematics, excluding 325K, 340L, 341L and 362K.

An additional sequence chosen from those in requirement 6 above, or one of the following:
   a. At least six hours of upper-division coursework in biology approved by the undergraduate adviser.
   b. Chemistry 128K, 128L, 328M, and 328N, or Chemistry 220C, 320M, and 320N, or at least six hours of upper-division coursework in chemistry approved by the undergraduate adviser.
   c. Geological Sciences 416K and 426P, or at least six hours of upper-division coursework in geological sciences approved by the undergraduate adviser.
   d. Physics 315 and at least three hours of upper-division coursework in physics approved by the undergraduate adviser.
1. At least six hours of upper division coursework in mathematics approved by the undergraduate adviser; a course may not be counted toward both requirement 6 and requirement 8.

2. Electrical Engineering 313 and 331.

9. The following courses in computer science:
   a. Theory: Computer Science 311 or 311H, 331, or 331H, and three additional hours from an approved list available in the department.
   b. Programming: Computer Science 312 or 312H, 314 or 314H, and three additional hours from an approved list available in the department.
   c. Systems: Computer Science 429 or 429H, 439 or 439H, and three additional hours from an approved list available in the department.
   d. Computer Science 353 or 331 or 331H Nine additional hours of upper-division courses in computer science.
   e. Nine additional hours of upper-division courses in computer science.

10. Enough additional coursework to make a total of 120 semester hours.

Option V: Teaching (Senior grades)

6. History 329U or Philosophy 329U.

7. Mathematics 408C and 408D, or 408N, 408S, and 408M; either 340L or 341 or Statistics and Data Sciences 329C.

8. One of the following sequences of coursework:
   a. Biology 311C and 311D, 311H, and Biology 306L or 308L.
   b. Chemistry 301 or 301H, and 302 or 302H, and 204.
   c. Geological Sciences 401 and either 404C or 405, Physics 303K and 103M, 301 and 101L, or 317K and 117M; and 303L and 103N, 316 and 116L, or 317L and 117N.
   d. Physics 303K, 303L, 103M, and 103N.

9. The following courses in computer science:
   a. Theory: Computer Science 311 or 311H, 331 or 331H, and three additional hours from an approved list available in the department.
   b. Programming: Computer Science 312 or 312H, 314 or 314H, and three additional hours from an approved list available in the department.
   c. Systems: Computer Science 429 or 429H, 439 or 439H, and three additional hours from an approved list available in the department.

10. The requirements of one of the following certification areas:
   a. For computer science certification:
      i. Mathematics 362K and Statistics and Data Sciences 321.
      ii. An additional sequence chosen from the following:
          2. At least three hours of upper-division coursework in chemistry approved by the undergraduate adviser; and Chemistry 368 (Topic 1: Research Methods: UTeach).
      iii. Fifteen additional hours of approved computer science upper-division coursework.
   b. For computer science and mathematics certification:
      ii. Twelve additional hours of approved computer science upper-division coursework.
      iii. Biology 337 (Topic 2: Research Methods: UTeach), or Chemistry 368 (Topic 1: Research Methods: UTeach), or Physics 341 (Topic 7: Research Methods: UTeach).

11. Eighteen semester hours of professional development coursework consisting of:
   a. Curriculum and Instruction 650S.
   b. Curriculum and Instruction 365C or UTeach-Natural Sciences 350.
   c. Curriculum and Instruction 365D or UTeach-Natural Sciences 355.
   d. Curriculum and Instruction 365E or UTeach-Natural Sciences 360.
   e. UTeach-Natural Sciences 101, 110, and 170.
12. Enough additional coursework to make a total of 127 semester hours.

**Special Requirements**

Students in all options must fulfill both the University's general requirements for graduation and the college requirements. They must also earn a grade of at least C- in each mathematics and science course required for the degree, and a grade point average in these courses of at least 2.00. More information about grades and the grade point average is given in *General Information*.

To graduate and be recommended for certification students who follow the teaching option must have a University grade point average of at least 2.50. They must earn a grade of at least C- in the supporting course in requirement 6, and in each of the professional development courses listed in requirement 11 and must pass the final teaching portfolio review. For information about the portfolio review and additional teacher certification requirements, students should consult the UTeach-Natural Sciences academic adviser.

With the exception of Enrollment in Computer Science 312 or 312H, 311 or 311H, and 314 or 314H, is restricted to computer science entry-level majors. All other computer science courses that may be counted toward a degree in computer science are restricted to students who have been admitted to the computer science major or have the consent of the undergraduate faculty adviser.

An undergraduate may not enroll in any computer science course more than once without written consent of an undergraduate adviser in computer science. No student may enroll in any computer science course more than twice. No student may take more than three upper-division computer science courses in a semester without written consent of an undergraduate adviser in computer science.

**Additional Requirements for Option II**

[no changes]

**Additional Requirements for Option III**

[no changes]

**Additional Requirements for Option IV**

**Satisfactory Progress**

[no changes]

**Probation**

[no changes]

**Dismissal**

[no changes]

**Graduation**

[no changes]

**Order and Choice of Work**

[no changes]
DOCUMENTS OF THE GENERAL FACULTY

PROPOSED CHANGES TO THE BACHELOR OF SCIENCE IN MATHEMATICS DEGREE
PROGRAM IN THE COLLEGE OF NATURAL SCIENCES CHAPTER IN THE UNDERGRADUATE
CATALOG 2016-2018

Dean Linda Hicke in the College of Natural Sciences 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 general interest to more than one college or school.

The Committee on Undergraduate Degree Program Review recommended approval of the changes on February 4, 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 February 24, 2016.

Hillary Hart, Secretary
General Faculty and Faculty Council

Posted on the Faculty Council website (http://www.utexas.edu/faculty/council/) on February 11, 2016.
PROPOSED CHANGES TO THE BACHELOR OF SCIENCE IN MATHEMATICS DEGREE PROGRAM IN THE COLLEGE OF NATURAL SCIENCES CHAPTER IN THE UNDERGRADUATE CATALOG 2016-2018

Type of Change ☒ Academic Change
☐ Degree Program Change (THECB form required)

Proposed classification ☐ Exclusive ☒ General ☐ Major

1. IF THE ANSWER TO ANY OF THE FOLLOWING QUESTIONS IS YES, THE COLLEGE MUST CONSULT LINDA DICKENS, DIRECTOR OF ACCREDITATION AND ASSESSMENT, TO DETERMINE IF SACS-COC APPROVAL IS REQUIRED.
   • Is this a new degree program? 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:
   1. Deletion of the foreign language/foreign culture requirement.
      Rationale: When reviewing requirements to remove to reach 120 hours total, the faculty determined that the foreign language/foreign culture requirement is the one that has the least impact on meeting the needs of mathematics graduates.
   2. Deletion of Options II (Applied Mathematics), III (Mathematical Sciences), IV (Pure Mathematics); addition of Option VII (Mathematics).
      Rationale: The Department of Mathematics has not updated the Bachelor of Science degree in a number of years. Taking on this task was spurred by the advent of the BSA degree and a desire to reduce the degree to a total of 120 hours. The updates are made in the general spirit of providing fewer but more flexible options for students. Other than the Teaching and Honors options, the former options are being folded into one. Currently, many mathematics majors gravitate toward the easiest options and easiest courses, leading students to take courses that do not prepare them to for their future goals. Mathematics majors pursuing the revised options will be guided by advising tracks that provide a better assort of course choices to meet their needs.
      Rationale: Inquiry-based Learning has a long tradition in the Department of Mathematics. This requirement also dovetails with the Independent Inquiry Flag. Most IBL courses also meet the II flag.
      Rationale: Most mathematics alumni do not pursue graduate studies in mathematics. For the majority of alumni, it is useful for them to have experience applying mathematics to other fields of study. The approved list will have options chosen from chemistry, computer science, electrical engineering, mathematics, and physics. For students who do not want to pursue this experience outside of mathematics, the department will accept M 374M, a mathematical modeling course.
   5. Replace M 427K with M 427J in Option III, Teaching.
   6. Restricting middle grade certification in Option III, Teaching, to mathematics certification.
      Rationale: Uteach confirms that students seeking mathematics, physical science, and engineering certification donot seek middle grade certification. By removing this option, the department is able to reduce the option total to120 hours.
3. **THIS PROPOSAL INVOLVES (Please check all that apply)**
   - [x] Courses in other colleges
   - [ ] Courses in proposer’s college that are frequently taken by students in other colleges
   - [ ] Course in the core curriculum
   - [x] Change in course sequencing for an existing program
   - [ ] Change in admission requirements (external or internal)
   - [x] Requirements not explicit in the catalog language (e.g., lists of acceptable courses maintained by department office)
   - [ ] Courses that have to be added to the inventory

4. **SCOPE OF PROPOSED CHANGE**
   a. Does this proposal impact other colleges/schools?  
      - Yes [x]  No [ ]
      If yes, then how? The Mathematics in Context approved list is comprised of courses outside of the College of Natural Sciences, in addition to M 374M. We anticipate a slight decrease in the number of seats spread across a variety of geological sciences courses.
   b. Do you anticipate a net change in the number of students in your college?  
      - Yes [ ]  No [x]
      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 [x]
      If yes, please indicate the number of students and/or class seats involved.
   d. Do you anticipate a net increase in the number of students from your college taking courses in other colleges?  
      - Yes [x]  No [ ]
      If yes, please indicate the number of students and/or class seats involved. We anticipate the number of seats needed in the following courses:
      - Over an academic year, we anticipate the following increases: M 374M (45), CH 353 (8), 354 (8); CS 341 (4), 342 (4), 345 (4), 346 (4), 353 (4), 367 (4); EE 411 (4), 325 (4), 360C (4), 362K (4); PHY 329 (8), 336K (8), 352K (8).
      We anticipate a slight decrease in the number of seats spread across a variety of geological sciences courses.

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: Department of Electrical and Computer Engineering
   - Person communicated with: Brian Evans
   - Date of communication: April 21, 2015
   - Response: approval to include EE courses

How many students do you expect to be impacted?
Impacted schools must be contacted and their response(s) included: Department of Chemistry
   - Person communicated with: Graeme Henkelman
   - Date of communication: April 20, 2015
   - Response: approval to include CH courses

How many students do you expect to be impacted?
Impacted schools must be contacted and their response(s) included: Department of Computer Science
   - Person communicated with: Bruce Porter via Mohamed Gouda
Date of communication: April 24, 2015
Response: approval to include CS courses

How many students do you expect to be impacted?
Impacted schools must be contacted and their response(s) included: Department of Physics
Person communicated with: Greg Sitz
Date of communication: April 20, 2015
Response: approval to include PHY courses

Impacted schools must be contacted and their response(s) included: College of Liberal Arts
Person communicated with: Richard Flores, Associate Dean
Date of communication: February 4, 2016
Response: no objection to removal of foreign language/foreign culture during CUDPR meeting

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? If yes, explain: Yes. With the option deletions, addition, and changes, all of the BS in Mathematics degree options will be 120 semester hours.

5. COLLEGE/SCHOOL APPROVAL PROCESS
Department approval date: April 10, 2015
College approval date: May 27, 2015
Dean approval date: September 28, 2015, David Vanden Bout, Associate Dean

PROPOSED NEW CATALOG TEXT:

BACHELOR OF SCIENCE IN MATHEMATICS

As an alternative to the Bachelor of Science and Arts and the Bachelor of Arts degrees, the Bachelor of Science in Mathematics is designed with a twofold purpose: to offer students a more extensive scientific program that may better prepare them for graduate study or employment, and to recognize students who choose to pursue a more demanding program. Students are given the opportunity to develop greater breadth and depth in their mathematical programs as well as to combine mathematics with a concentration in another scientific discipline. To accomplish these goals, the minimum number of semester hours is increased and the maximum limit is removed. Specialization in one additional scientific area is encouraged, and the foreign language requirement is shortened by one semester.

Students seeking the Bachelor of Science in Mathematics must select one of six options: actuarial science, applied mathematics, mathematical sciences, pure mathematics, mathematics for secondary teaching, and mathematics honors, or mathematics. Students who choose the option in mathematical sciences must also select a specialization in either scientific computation or statistics, probability, and data analysis. Students who plan to follow option VI, mathematics honors, must be admitted to the Dean’s Scholars Honors Program.

Prescribed Work Common to All Options


In addition, students seeking the Bachelor of Science in Mathematics must complete the following degree-level requirements. In some cases, courses that fulfill degree-level requirements also meet the requirements of the core.

1. Two courses with a writing flag. One of these courses must be upper-division.
2. One course with a quantitative reasoning flag.

Courses with flags are identified in the Course Schedule. They may be used simultaneously to fulfill other requirements, unless otherwise specified.

3. Options I–IV: One of the following foreign language/culture choices:
   a. Second-semester-level proficiency in a foreign language course.
   b. First-semester-level proficiency in a foreign language and a three-semester-hour course in the culture of the same language area.
   c. Two three-semester-hour culture courses chosen from one foreign culture category from an approved list in the dean's office and college advising centers. Students in options V and VI are exempt from this requirement.

4. Forty-two semester hours of upper-division coursework. At least twenty-one semester hours of upper-division coursework must be completed in residence at the University.

5. Eighteen semester hours in mathematics must be completed in residence at the University.

Additional Prescribed Work for Each Option

Option I: Actuarial Science

5. Eight semester hours of majors-level coursework in one of the following areas: astronomy, biology, chemistry, geological sciences, and physics.

6. Mathematics 408C and 408D, or 408N, 408S, and 408M. Complete one of the following:
   a. Mathematics 408C, 408D, and 427L.
   b. Mathematics 408N, 408S, and 408M.
   c. Mathematics 408K, 408L, and 408M. Mathematics 408N and 408S, or 408K and 408L, may substitute for 408C.

7. Actuarial Foundations 329, Economics 304K and 304L.

8. Economics 304K and 304L, Accounting 310F or both 311 and 312.

9. Accounting 310F or both 311 and 312, Finance 357.

10. Finance 357, Computer Science 303E.

11. At least thirty-two semester hours of upper-division coursework in mathematics and supporting areas, consisting of:
   One of the following courses: Mathematics 328K, 343K, 361, 361K, 365C, 367K, 373K, Mathematics 340L or 341.
   Mathematics 362K and either 358K or 378K.
   Four courses chosen from the following: Mathematics 339J, 339U, 339V, 339D, 339W, 349P, and 349R.

   Enough additional coursework to provide a total of at least thirty-two hours. In addition to upper-division mathematics courses, the following courses in supporting areas may be counted toward this requirement: Economics 420K, Finance 354, 367, 377 (Topic 2: Financial Risk Management), Legal Environment of Business 320F, 323, Management Information Systems 325, Risk Management 357E, 369K, 377. Courses used to satisfy this requirement may not be counted toward requirement 13.

Upper-division mathematics courses, including:
   a. Mathematics 325K or 328K. Mathematics 328K is recommended for students with substantial experience in writing proofs.
   b. Mathematics 341. Mathematics 340L may be substituted for 341 if the course was completed prior to entry into the mathematics entry-level major.
   c. Mathematics 362K and either 358K or 378K.
12. At least six semester hours of upper-division coursework must be outside both mathematics and the fields of study listed in requirement 5-6. Philosophy courses in logic, computer science courses in discrete mathematics, engineering courses, and actuarial foundation courses counted toward requirement 12e may not be used to fulfill this requirement.

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

**Option II: Applied Mathematics**

6. Eight semester hours in one of the following areas: astronomy, biology, chemistry, geological sciences, and physics.
7. Mathematics 408C and 408D, or 408N, 408S, and 408M.
8. Computer Science 303E or the equivalent.
9. Thirty-two semester hours of upper-division coursework in mathematics, consisting of the following courses; the student should consult the applied mathematics adviser for information on other courses that may be counted toward this requirement.
   a. Mathematics 340L or 341.
   b. Mathematics 427K, 348, 362K, and 374M.
   c. Mathematics 361 and 365C.
   d. Mathematics 343K or 373K.
   e. Enough of the following coursework to provide a total of at least thirty-two hours:
      Mathematics 346, 365D, 368K, 372K, 376C.
10. At least six semester hours of upper-division coursework must be outside both mathematics and the fields of study listed in requirement 6. Philosophy courses in logic, computer science courses in discrete mathematics, and engineering courses may not be used to fulfill this requirement.
11. Enough additional coursework to make a total of 126 semester hours.

**Option III: Mathematical Sciences**

**Specialization in Statistics, Probability, and Data Analysis**

6. Eight semester hours in one of the following areas: astronomy, biology, chemistry, geological sciences, and physics.
7. Mathematics 408C and 408D, or 408N, 408S, and 408M.
8. Computer Science 303E or the equivalent.
9. At least thirty-two semester hours of upper-division coursework in mathematics and related areas, consisting of
   a. Mathematics 325K.
   b. Mathematics 427K and 362K.
   c. Mathematics 340L or 341.
   d. Mathematics 361K or 365C.
   e. Mathematics 358K and 378K.
   f. Mathematics 328K, 343K, 346, or 373K.
Management 357E. Courses used to satisfy this requirement may not be counted toward requirement 10.
Most of these courses have substantial prerequisites, sometimes including courses in other departments. Some have restricted enrollment. The student is responsible for meeting prerequisites and other requirements for enrollment in the courses selected to fulfill this requirement. Courses should be chosen in consultation with the specialization adviser to form a coherent program consistent with the student's background and goals.

Educational Psychology 371 may not be counted toward this degree if it is taken after Mathematics 358K or 378K.

10. At least six semester hours of upper division coursework must be outside both mathematics and the fields of study listed in requirement 6. Philosophy courses in logic, computer science courses in discrete mathematics, engineering courses, and courses counted toward requirement 9g may not be used to fulfill this requirement.

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

Specialization in Scientific Computation

Students who complete this specialization may simultaneously fulfill some of the requirements of the Elements of Computing Certificate or the Certificate in Scientific Computation. These certificate programs are described in Transcript-Recognized Certificate Programs.

6. Eight semester hours in one of the following areas: astronomy, biology, chemistry, geological sciences, and physics.
7. Mathematics 408C and 408D, or 408N, 408S, and 408M.
8. One of the following sequences: Statistics and Data Sciences 318 and 322; Computer Science 312 and 314; or Computer Science 303E and 313E.
9. At least thirty-two semester hours of upper division coursework in mathematics and related areas, consisting of
   a. Mathematics 340L or 341.
   b. Mathematics 427K, 348, 362K, and 368K.
   c. Mathematics 361K or 365C.
   d. Students who fulfill the requirements of the Elements of Computing Certificate or the Certificate in Scientific Computation may count up to six hours of upper division certificate coursework toward this requirement. Computer Science 323E may not be counted toward this requirement. Courses used to satisfy this requirement may not be counted toward requirement 10.
   e. Additional coursework chosen from the following: Mathematics 325K or 328K (but not both), 427L, 343K or 373K (but not both), 343L, 346, 358K, 361, 365D, 372K, 374M, 376C, 378K.
10. At least six semester hours of upper division coursework must be outside both mathematics and the fields of study listed in requirement 6. Philosophy courses in logic, computer science courses in discrete mathematics, engineering courses, and courses counted toward requirement 9e may not be used to fulfill this requirement.
11. Enough additional coursework to make a total of 126 semester hours.

Option IV: Pure Mathematics

6. Eight semester hours in one of the following areas: astronomy, biology, chemistry, geological sciences, and physics.
7. Mathematics 408C and 408D, or 408N, 408S, and 408M.
8. At least thirty-two semester hours of upper division coursework in mathematics, consisting of
   a. Mathematics 340L or 341.
d. Additional hours of upper division coursework in mathematics chosen with the approval of the mathematics adviser. Either Mathematics 343K or 361K may be counted toward this requirement but not both.

9. At least six semester hours of upper-division coursework must be outside both mathematics and the fields of study listed in requirement 6. Philosophy courses in logic, computer science courses in discrete mathematics, and engineering courses may not be used to fulfill this requirement.

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

Option V: Teaching

This option is designed to fulfill the course requirements for certification as a middle grades or secondary school mathematics teacher in Texas; the student chooses mathematics certification or mathematics, physical science, and engineering certification. However, completion of the course requirements does not guarantee the student’s certification. For information about additional certification requirements, students should consult the UTeach-Natural Sciences academic adviser.

Students are encouraged to become familiar with a variety of mathematical software relevant to middle grades or secondary teaching, such as computer geometry systems, spreadsheets, and statistical software. Whenever possible, the student should take courses and sections of courses that use these types of software.

5. History 329U or Philosophy 329U.

6. Mathematics 408C and 408D, or 408N, 408S, and 408M. One of the following sequences:
   a. Mathematics 408C and 408D.
   b. Mathematics 408N and 408S.
   c. Mathematics 408K and 408L.

7. Mathematics 408N and 408S, or 408K and 408L, may substitute for 408C.

8. At least six semester hours of upper-division coursework must be outside mathematics. Philosophy courses in logic, computer science courses in discrete mathematics, and engineering courses may not be used to fulfill this requirement.

9. Mathematics 315C.

10. Biology 337 (Topic 2: Research Methods: UTeach), Chemistry 368 (Topic 1: Research Methods: UTeach) or Physics 341 (Topic 7: Research Methods: UTeach).

11. The requirements of one of the following certification areas:
   a. For mathematics certification: At least thirty-two semester hours of upper-division coursework in mathematics consisting of:
      i. Mathematics 340L or 341.
      ii. Mathematics 325K or 328K, 333L, 358K, and 362K. Mathematics 328K is recommended for students with substantial experience in writing proofs.
      iii. Mathematics 360M or 375D (Topic: Discovery: Introduction to Advanced Study in Mathematics).
      iv. Mathematics 361K or 365C.
      v. Mathematics 343K or 373K.
      vi. Mathematics 427J, 427K or 378K.
      vii. Enough of the following coursework to provide a total of at least thirty-two semester hours: Two courses chosen from: Mathematics 427K, 328K, 339J, 339U, 343K, 343L, 348, 360M, 361, 365C, 365D, 368K, 373K, 373L, 428T (Topic: Seminar for Prospective Teachers), 375D (Topic: Discovery: Introduction to Advanced Study in Mathematics), 378K. A course used to fulfill requirements 11i 9ai through 11i 9avi may not also be counted toward requirement 11i 9avi.
10. Eighteen semester hours of professional development coursework consisting of:
   a. Curriculum and Instruction 650S.
   b. Curriculum and Instruction 365C or UTeach-Natural Sciences 350.
   c. Curriculum and Instruction 365D or UTeach-Natural Sciences 355.
   d. Curriculum and Instruction 365E or UTeach-Natural Sciences 360.
   e. UTeach-Natural Sciences 101, 110, and 170.

11. Students seeking middle grades certification must complete the following courses: Educational Psychology 363M (Topic: Adolescent Development), or Psychology 301 and 304; and Curriculum and Instruction 339E. Students seeking mathematics, physical science, and engineering certification may not seek middle grade certification.

12. Enough additional coursework to make a total of at least 120 semester hours.

Option VI: Mathematics Honors

5. Breadth requirement: An honors mathematics course; one of the following two-semester sequences:
   Biology 315H and 325H, Chemistry 301H and 302H, or Physics 301, 101L, 316; and 116L; and nine additional semester hours chosen from the preceding courses, Physics 315 and 115L. Credit earned by examination may not be counted toward this requirement

6. An honors section of Mathematics 427K, and six semester hours of coursework chosen from Mathematics 365C, 367K, and 373K

7. Twenty additional semester hours of upper-division coursework in mathematics approved by the departmental faculty adviser

8. A section of Undergraduate Studies 302 or 303 that is approved by the departmental honors adviser.

9. A section of Rhetoric and Writing 309S that is restricted to students in the Dean Scholars Honors Program.

10. Mathematics 379H.

11. Thirty additional semester hours of coursework approved by the departmental honors adviser.

12. Six semester hours of coursework in the College of Liberal Arts or the College of Fine Arts.

13. Enough additional coursework to make a total of 120 semester hours.

Option VII: Mathematics

5. Eight semester hours of majors-level coursework in one of the following areas: astronomy, biology, chemistry, geological sciences, and physics.

6. Computer Science 303E.

7. One of the following sequences:
   a. Mathematics 408C and 408D.
   b. Mathematics 408N and 408S.
   c. Mathematics 408K and 408L.

   Mathematics 408N and 408S, or 408K and 408L, may substitute for 408C.

8. Additional mathematics, including:
a. Three of the following: Mathematics 408M or 427L, 427J, 341, 362K. Mathematics 340L may be substituted for 341 if the course was taken prior to entry into the mathematics entry-level major.
b. Mathematics 325K or 328K. Mathematics 328K is recommended for students with substantial experience in writing proofs.
c. One of the following: Mathematics 343K, 361K, 365C, 367K, 373K.
e. One course identified as taught in the inquiry based learning (IBL) format. IBL courses are identified each semester through a notation under the unique number in the course schedule and through a list maintained in the mathematics advising office in Robert Lee Moore Hall, room 4.101.

Mathematics courses listed in requirements 8a through 8d may only be applied toward one requirement.

9. Mathematics in context. One course chosen from:
   a. Mathematics 374M
   b. Chemistry 353, 354
   c. Computer Science 341, 342, 345, 346, 353, 367
   d. Electrical and Computer Engineering 411, 325, 360C, 362K
   e. Physics 329, 336K, 352K

Courses in requirements 9b through 9d may require additional prerequisites. Mathematics 374M may not count toward both requirement 8 and 9.

10. At least six semester hours of upper-division coursework must be outside both mathematics and the fields of study listed in requirement 5. Philosophy courses in logic, computer science courses in discrete mathematics, engineering, and actuarial foundation courses may not be used to fulfill this requirement.

11. Enough additional coursework to make a total of 120 semester hours.

Special Requirements

Students in all options must fulfill both the University's General Requirements for graduation and the college requirements. They must also earn a grade of at least C- in each mathematics and science course required for the degree, and a grade point average in these courses of at least 2.00. More information about grades and the grade point average is given in General Information.

To graduate and be recommended for certification, students who follow the teaching option must have a University grade point average of at least 2.50. They must earn a grade of at least C- in the supporting course in requirements 5 and 8 and in each of the professional development courses listed in requirement 110 and must pass the final teaching portfolio review; those seeking middle grades certification must also earn a grade of at least C- in each of the courses listed in requirement 111. For information about the portfolio review and additional teacher certification requirements, students should consult the UTeach-Natural Sciences academic advisor.

To graduate under option VI, students must remain in good standing in the Dean’s Scholars Honors Program, must submit an honors thesis approved by the departmental honors adviser, and must present their research in an approved public forum, such as the college’s annual Undergraduate Research Forum.