PROPOSED CHANGES TO THE BS IN CHEMISTRY IN THE COLLEGE OF
NATURAL SCIENCES SECTION IN THE UNDERGRADUATE CATALOG 2018-2020

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 SACSCOC APPROVAL IS REQUIRED.

- Is this a new degree program? Yes ☐ No ☒
- Is this program being deleted? Yes ☐ No ☒
- Does the program offer courses that will be taught off campus? Yes ☐ No ☒
- Will courses in this program be delivered electronically? Yes ☐ No ☒

2. EXPLAIN CHANGE TO DEGREE PROGRAM AND GIVE A DETAILED RATIONALE FOR EACH INDIVIDUAL CHANGE:

Option II: Computation

Change CH 368 (Topic: Computational Chemistry) to CH 354M, Introduction to Computational Methods in Chemistry.

Reason: The computational chemistry course has been offered under a variety of titles over the years. The Department of Chemistry created a stand-alone course, CH 354M, to standardize the titles.

Change SDS 222 to SDS 322.

Reason: The Department of Statistics and Data Sciences created the course to vary in hours (2 to 3), but the department has only offered it as a 3 hour course.

Option III: Teaching

Update engineering courses under the mathematics, physical science, and engineering certification.

Reason: Engineering an UTeach Natural Sciences reviewed and approved the new courses for teaching certifications in the College of Natural Sciences.

Option IV: Chemistry Honors

Breadth requirement: Change 3 hours of honors coursework in BIO or CS to 3 hours of honors coursework from any department in CNS.

Reason: Computer Science honors courses are restricted, and requiring BIO honors was too restrictive on the students. Chemistry would like more freedom for their honors students to make choices in this requirement.

Change 6 hours from Fine Arts or Liberal Arts to 6 hours from Fine Arts and Liberal Arts.

Reason: In practice, the Dean's Scholars Program allows students to take 6 hours from a single college or a mixture of 6 hours from both colleges. The change will synch catalog copy to advising practice and eliminate the need for petitions.

Special Requirements

Standardize language regarding requirements to graduate with Dean's Scholars degree options.

Reason: Since the honors options were added at different times as new BS degrees were created, standard language began to differentiate between degrees. The Dean's Scholars steering committee voted to establish standard
language for all of its options.

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)
   - [ ] Flags
   - [ ] Courses that have to be added to the inventory
   - [ ] Requirements not explicit in the catalog language (e.g., lists of acceptable courses maintained by department office)

4. **SCOPE OF PROPOSED CHANGE**
   a. Does this proposal impact other colleges/schools?  
      Yes [X] No [ ]
   
      If yes, then how would you do so?

      **Option III, Teaching**
      Very few students seek the mathematics, physical science, and engineering certification. The UTeach Program did not provide an estimate of the number of students who might take E S 301 and M E 377K. However, the additions are approved by UTeach Engineering.

      **Option IV, Chemistry Honors**
      The original legislation stated that Dean's Scholars must choose 6 hours from either the College of Liberal Arts (COLA) or the College of Fine Arts (COFA). In practice, students are allowed to count 6 hours from one of the colleges, or a mixture from the colleges. This change will eliminate the need for petitions in situations where students choose to take a mixture of COLA and COFA coursework. In a constant state, the Dean's Scholars Program has approximately 200 majors.

      There is no way to predict how this change will impact the College of Fine Arts and the College of Liberal Arts. Specific courses are not prescribed and the change is to match catalog language to current advising practice. Making an estimate, perhaps 10 seats per year distributed across all courses in both colleges may be impacted. Because the number of seats across both colleges is estimated to be so small, the College of Fine Arts and the College of Liberal Arts were not formally consulted for permission to make this change.

   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 [ ] No [X]
      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.**

      **Option III, Teaching**
      How many students do you expect to be impacted? Not provided by UTeach Engineering or UTeach Natural Sciences; minimal number.
      Impacted schools must be contacted and their response(s) included: UTeach Engineering
Person communicated with: David Allen, director
Date of communication: September 22, 2017
Response: Suggested proposed changes.

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?
Note: THECB Semester Credit Hour Change Form required, download from URL: http://www.thecb.state.tx.us/reports/DocFetch.cfm?DocID=2419&format=doc
If yes, explain:

5. COLLEGE/SCHOOL APPROVAL PROCESS
Dean's Scholars approval: May 10, 2017 Approved by whom: Dean's Scholars Steering Committee
UTeach Program: September 22, 2017 Approved by whom: David Allen, UTeach Program, director
College approval date: Sept 9 and 28, 2017 Approved by whom: Course and Curriculum Committee
Dean approval date: Sept 9 and 28, 2017 Approved by whom: David Vanden Bout, Associate Dean for Undergraduate Education

PROPOSED NEW CATALOG TEXT:

Bachelor of Science in Chemistry
[no change]

Prescribed Work Common to All Options
[no change]

Additional Prescribed Work for Each Option

Option I: Chemistry
[no change]

Option II: Computation

Students who complete Option II may simultaneously fulfill some of the requirements of the Certificate in Scientific Computation.

7. Mathematics 408C and 408D, or 408N, 408S, and 408M; and Statistics and Data Sciences 329C or Mathematics 340L or 341
8. One of the following sequences:
   a. Physics 301, 101L, 316, and 116L
   b. Physics 303K, 103M, 303L, and 103N or
   c. Physics 317K, 117M, 317L, and 117N
9. Chemistry 354M 368 (Topic: Computational Chemistry)
10. At least three semester hours chosen from the following laboratory courses: Biochemistry 369T, Chemistry 341, 369K, and 371K
11. Statistics and Data Sciences 322 222 and three of the following courses; the student must complete coursework from at least two of the following areas.

Degree Program Impact Statement revised July 2016
a. Numerical methods: Chemical Engineering 348, Computer Science 323E, 323H, 367, Mathematics 348, Statistics and Data Sciences 335  
b. Statistical methods: Biomedical Engineering 335, Mathematics 358K, 378K  

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

Option III: Teaching

This Option is designed to fulfill the course requirements for certification as a middle grade or secondary school science teacher in Texas; the student chooses one of the following areas: composite science certification or physical sciences certification; or physical science, mathematics, and engineering certification. However, completion of the course requirements does not guarantee the student’s certification. Information about additional teacher certification requirements is available from the UTeach-Natural Sciences academic adviser.

7. Mathematics 408C and 408D, or 408N, 408S, and 408M

8. History 329U or Philosophy 329U

9. One of the following sequences:
   b. For students seeking either physical sciences certification or, mathematics, physical science, and engineering certification: Physics 301, 101L, 316, 116L, 315, and 115L; or 303K, 103M, 303L, 103N, 315, and 115L

10. The requirements of one of the following certification areas:
   a. For composite science certification:
      i. Biology 311C and 311D  
      ii. Six hours of coursework in geological sciences; courses intended for non-science majors may not be counted toward this requirement  
      iii. Enough additional approved coursework in biology, geological sciences, or physics to provide the required 12 hours in a second field  
      iv. Chemistry 368 (Topic 1: Research Methods: UTeach) or, with the consent of the UTeach-Natural Sciences academic adviser, an upper-division chemistry course that includes a substantial research component  
      v. In place of requirements 4c through 4f of the prescribed work above, the following courses, for a total of at least 34 semester hours of chemistry: Biochemistry 339F or 369; Chemistry 353; and 455 or 456
   b. For physical sciences certification:
      i. Mathematics 427J or 427K and 427L  
      ii. Chemistry 153K, 354L, and 154K  
      iii. Chemistry 354 and three hours of upper-division coursework in physics  
      iv. Chemistry 368 (Topic 1: Research Methods: UTeach) or, with the consent of the UTeach-Natural Sciences academic adviser, an upper-division chemistry course that includes a substantial research component  
      v. In place of requirements 4c through 4f of the prescribed work above, the following courses, for a total of at least 34 semester hours of chemistry: Biochemistry 339F or 369; Chemistry 353, and 455 or 456
   c. For mathematics, physical science, and engineering certification:
      i. Mathematics 315C, 360M or 375D (Topic: Discovery: Introduction to Advanced Study in Mathematics), 427J or 427K, and 333L

Degree Program Impact Statement revised July 2016

iii. Chemistry 368 (Topic 1: Research Methods: UTeach) or, with the consent of the UTeach Natural Sciences academic adviser, an upper division chemistry course that includes a substantial research component, Engineering Studies 301; and Mechanical Engineering 377K upon approval of the project by the UTeach Program.

iv. In place of requirements 4c through 4f of the prescribed work above, the following courses, for a total of at least 30 semester hours in chemistry: Chemistry 353 and 153K, 455, and Biochemistry 369

11. 18 semester hours of professional development coursework consisting of:
   a. Curriculum and Instruction 651S
   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. Enough additional coursework, if needed, to make a total of 126 semester hours

Option IV: Chemistry Honors

7. Breadth requirement: An honors mathematics course, Chemistry 301H and 302H, Physics 301, 101L, 316, and 116L, and an additional three-hour honors-designated course from a department in the College of Natural Sciences, a three semester hour honors course in biology or computer science. Credit earned by examination may not be counted toward this requirement

8. Chemistry 317

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 Dean’s Scholars

11. Chemistry 379H and a three-semester-hour upper-division research course approved by the departmental honors adviser, or six hours of Chemistry 379H

12. Twenty-two additional hours of coursework approved by the departmental honors adviser

13. Six semester hours of coursework in from the College of Liberal Arts or and the College of Fine Arts

14. 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 University grade point average in these courses of at least 2.00. More information about grades and the grade point average is given in the General Information Catalog.

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 7, and each of the professional development courses listed in requirement 10 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 11. For information about the portfolio review and additional teacher certification requirements, consult
the UTeach-Natural Sciences academic adviser.

To graduate under Option IV, students must remain in good standing in the Dean’s Scholars Honors Program, must submit an honors thesis approved by the departmental honors adviser, earn grades of at least A- in the departmental research and thesis courses described in requirement 10 above, 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 may be found on the College of Natural Sciences website, is available at https://cns.utexas.edu

Order and Choice of Work
[no change]

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1 See https://facultycouncil.utexas.edu/degree-program-changes for detailed explanations.
2 Submit required Texas Higher Education Coordinating Board forms to the provost’s office.
3 EXCLUSIVE: of exclusive application and of primary interest only to a single college or school ("no protest" period is seven calendar days); GENERAL: of general interest to more than one college or school (but not for submission to the General Faculty) ("no protest" period is fourteen calendar days); MAJOR: major legislation must be submitted to the General Faculty for adoption ("no protest" period is fourteen calendar days).
4 The proposed text should be based on the text of the current catalog available at http://catalog.utexas.edu/undergraduate/

Strike through and replace (with underlines) only the specific language to be changed. Do NOT use track changes, and do not include hyperlinks in the catalog copy. For questions on completing this section, please contact Victoria Cervantes, fc@austin.utexas.edu, 471-5936 or Brenda Schumann, brenda.schumann@austin.utexas.edu, 475-7654.