



## CNS BS IN CHEMISTRY

language for all of its options.

### 3. THIS PROPOSAL INVOLVES (Please check all that apply)

- |  |  |   |
|--|--|---|
| <input checked="" type="checkbox"/> Courses in other colleges                    | <input type="checkbox"/> Courses in proposer's college that are frequently taken by students in other colleges                                 | <input type="checkbox"/> Flags  |
| <input type="checkbox"/> Course in the core curriculum                           | <input checked="" type="checkbox"/> Change in course sequencing for an existing program  | <input type="checkbox"/> Courses that have to be added to the inventory |
| <input type="checkbox"/> Change in admission requirements (external or internal) | <input type="checkbox"/> Requirements not explicit in the catalog language (e.g., lists of acceptable courses maintained by department office) |   |

### 4. SCOPE OF PROPOSED CHANGE

- a. Does this proposal impact other colleges/schools? Yes  No   
If yes, then how 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   
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.**

#### 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

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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:<sup>4</sup>

#### 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.

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- 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
  - c. Other computing topics: Computer Science 324E, 327E, 329E (approved topics), 377, Mathematics 346, 362M, 368K, 372K, 376C, Mechanical Engineering 367S, Statistics and Data Sciences 329D, 374C, 374D, 374E
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 with chemistry as the primary teaching field; 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:
  - a. For students seeking composition science certification: Physics 301, 101L, 316, and 116L; or Physics 303K, 103M, 303L, and 103N; or Physics 317K, 117M, 317L, and 117N. Science 365 and Physics 108 (Topic: *Physics by Inquiry*) may substitute for Physics 316 and 116L, 317L and 117N, or 303L and 103N. Physics 108 is offered on the pass/fail basis.
  - 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

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- ii. Chemical Engineering 379 (Topic: *Fundamentals of Engineering and Design*), 379 (Topic: *Engineering Energy Systems*), and Mechanical Engineering 379M (Topic: *Design of Machines and Systems*)
  - 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/or 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

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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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<sup>1</sup> See <https://facultycouncil.utexas.edu/degree-program-changes> for detailed explanations.

<sup>2</sup> Submit required Texas Higher Education Coordinating Board forms to the provost's office.

<sup>3</sup> **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*).

<sup>4</sup> 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](mailto:fc@austin.utexas.edu), 471-5936 or Brenda Schumann, [brenda.schumann@austin.utexas.edu](mailto:brenda.schumann@austin.utexas.edu), 475-7654.