

DOCUMENTS OF THE GENERAL FACULTY

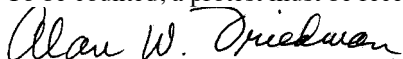
**PROPOSED CHANGES TO THE BACHELOR OF SCIENCE IN CHEMISTRY DEGREE PROGRAM
IN THE COLLEGE OF NATURAL SCIENCES CHAPTER IN THE *UNDERGRADUATE CATALOG*
2018-2020**

Dean Linda A. Hicke in the College of Natural Sciences has filed with the Secretary of the Faculty Council the following proposal to change the Bachelor of Science in Chemistry degree program in the College of Natural Sciences chapter in the *Undergraduate Catalog, 2018-2020*. On May 10, 2017, the Dean's Scholars Steering Committee approved the proposal; and on September 28, 2017, the Course and Curriculum Committee and Associate Dean David Vanden Bout, on behalf of Dean Hicke, approved it. The Secretary has classified this proposal as legislation of general interest to more than one college or school.

The Committee on Undergraduate Degree Program Review recommended approval of the proposal on February 2, 2018, and forwarded it to the Office of the General Faculty. The Faculty Council has the authority to approve this legislation on behalf of the General Faculty. The authority to grant final approval on this legislation resides with the Provost on behalf of the President.

If no objection is filed with the Office of the General Faculty by the date specified below, the legislation will be held to have been approved by the Faculty Council. If an objection is filed within the prescribed period, the legislation will be presented to the Faculty Council at its next meeting. The objection, with reasons, must be signed by a member of the Faculty Council.

To be counted, a protest must be received in the Office of the General Faculty by March 15, 2018.



Alan W. Friedman, Secretary of the General Faculty and Faculty Council
The University of Texas at Austin

Arthur J. Thaman and Wilhelmina Doré Thaman Professor of English and Comparative Literature

**PROPOSED CHANGES TO THE BACHELOR OF SCIENCE IN CHEMISTRY DEGREE PROGRAM
IN THE COLLEGE OF NATURAL SCIENCES CHAPTER 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 <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| • Is this program being deleted? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| • Does the program offer courses that will be taught off campus? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| • Will courses in this program be delivered electronically? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |

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 (two to three), but the department has only offered it as a three-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 three hours of honors coursework in BIO or CS to three 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 six hours from Fine Arts or Liberal Arts to six hours from Fine Arts and Liberal Arts.

Reason: In practice, the Dean's Scholars Program allows students to take six hours from a single college or a mixture of six 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)

- | | | |
|--|--|---|
| <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 six hours from either the College of Liberal Arts (COLA) or the College of Fine Arts (COFA). In practice, students are allowed to count six 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 ten 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

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	Dean's Scholars Steering Committee
UTeach Program:	September 22, 2017	David Allen, UTeach Program, director
College approval date:	September 9, 2017	Course and Curriculum Committee
	September 28, 2017	
Dean approval date:	September 9, 2017	David Vanden Bout, Associate Dean for
	September 28, 2017	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.
 - 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 twelve [~~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 thirty-four [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 thirty-four [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
 - 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-~~ iii. In place of requirements 4c through 4f of the prescribed work above, the following courses, for a total of at least thirty ~~[30]~~ semester hours in chemistry: Chemistry 353 and 153K, 455, and Biochemistry 369

11. Eighteen ~~[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}