DOCUMENTS OF THE GENERAL FACULTY

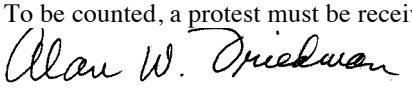
**PROPOSED CHANGES TO THE BACHELOR OF SCIENCE IN PHYSICS IN THE COLLEGE OF NATURAL SCIENCES CHAPTER IN THE *UNDERGRADUATE CATALOG 2018-2020***

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 Physics degree program in the College of Natural Sciences chapter in the *Undergraduate Catalog, 2018-2020*. The Dean's Scholars Steering Committee approved the proposal on May 10, 2017; it was approved by UTeach Program Director on September 22, 2017; and by the College Course and Curriculum Committee and Associate Dean David Vanden Bout, on behalf of Dean Hicke, on September 27, 2017. 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

Distributed through the Faculty Council Wiki site https://wikis.utexas.edu/display/facultycouncil/Wiki+Home on March 1, 2018.

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**PROPOSED CHANGES TO THE BACHELOR OF SCIENCE IN PHYSICS 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 ☐ 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 V: Teaching
Update engineering courses under the mathematics, physical science, and engineering certification.
**Reason:** Engineering and UTeach reviewed and approved the new courses for teaching certifications in the College of Natural Sciences.

Option VI: Physics Honors
Remove M 427K. It was replaced in the 2016-18 catalog with an honors section of M 427J.
**Reason:** The Department of Mathematics is no longer teaching an honors section of M 427K.

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)**

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

**4. SCOPE OF PROPOSED CHANGE**

a. Does this proposal impact other colleges/schools? Yes ☒ No ☐
If yes, then how would you do so?

Option V, 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 VI, Physics 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.**

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:
**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 date: | May 10, 2017 | Dean's Scholars Steering Committee |
| UTeach Program approval date: | September 22, 2017 | David Allen, UTeach Program, director |
| College approval date: | September 20, 2017<br>September 27, 2017 | Course and Curriculum Committee |
| Dean approval date: | September 27, 2017 | David Vanden Bout, Associate Dean for Undergraduate Education |

**PROPOSED NEW CATALOG TEXT:**

**BACHELOR OF SCIENCE IN PHYSICS**
{no change}

**Prescribed Work Common to All Options**
{no change}

**Prescribed Work Common to All Options for Each**

**Option I: Physics**
{no change}

**Option II: Computation**
{no change}

**Option III: Radiation Physics**
{no change}

**Option IV: Space Sciences**
{no change}

**Option V: 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 composite science certification with physics as the primary teaching field, physical sciences certification, physics/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 requirements, students should consult the UTeach-Natural Sciences academic adviser.

6. Physics 301, 101L, 316, 116L, 315, and 115L
7. Mathematics 408C and 408D or the equivalent, 427J or 427K, and 427L
8. At least <u>eighteen</u> [~~18~~] semester hours of upper-division coursework in physics, consisting of Physics 341 (Topic 7: *Research Methods: UTeach*), 353L, 355, and three of the following courses: Physics 329, 333, 336K, 338K, 352K, 373, Science 365; with the consent of the UTeach-Natural Sciences undergraduate adviser, an upper-division physics course that includes a substantial research component may be substituted for Physics 341
9. History 329U or Philosophy 329U
10. The requirements of one of the following certification areas:
    a. For composite science certification:
        i. Biology 311C and 311D
        ii. Chemistry 301 or 301H and 302 or 302H
        iii. Six hours of coursework in geological sciences; courses intended for non-science majors may not be counted toward this requirement
        iv. Enough additional approved coursework in biology, chemistry, or geological sciences to provide the required 12 hours in a second field
    b. For physical sciences certification:
        i. Chemistry 301 or 301H, 302 or 302H, 204 or 317, 353, 153K, 154K, 354L, and 455 or 456
        ii. Three additional hours of upper-division coursework in physics
    c. For physics/mathematics certification: Mathematics 315C, 325K, 333L, 341 or 340L, 358K, 362K, 360M or 375D
    d. For mathematics, physical science, and engineering certification:
        i. Mathematics 315C, 325K, 333L, 358K, and 362K
        ii. Chemistry 301 or 301H, 302 or 302H, and 204

iii. [~~Chemical Engineering 379 (Topic: *Fundamentals of Engineering and Design*), 379 (Topic: *Engineering Energy Systems*), and Mechanical Engineering 379M (Topic: *Design of Machines and Systems*)~~ ] Engineering Studies 301; and Mechanical Engineering 377K upon approval of the project by the UTeach Program.

11. Eighteen 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 to make a total of at least 126 semester hours

**Option VI: Physics Honors**

6. Breadth requirement: Biology 315H and 325H, Chemistry 301H and 302H, and Mathematics 427J [~~or 427K~~] and 427L; at least one of the math courses must be a designated honors section; credit earned by examination may not be counted toward this requirement
7. Mathematics 340L and 361
8. Physics 301, 101L, 316, 116L, 315, and 115L
9. Physics 336K, 352K, 353L, 355, 362K, 362L, 369, 373, and 474
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. Physics 379H and a three-semester-hour upper-division research course approved by the departmental honors adviser
13. Ten additional semester hours of coursework approved by the departmental honors adviser
14. Six semester hours of coursework [~~in~~] from the College of Liberal Arts [~~or~~] and/or the College of Fine Arts
15. Enough additional coursework to make a total of 120 semester hours

**Option VII: Biophysics**
{no change}

**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 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 9 and in each of the professional development courses listed in requirement 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 12. Information about the portfolio review and additional teacher certification requirements is available from the UTeach-Natural Sciences academic adviser.

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, [~~earn grades of at least *A*- in the departmental research and thesis courses described in requirement 8 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 is available at https://cns.utexas.edu.