

CNS BS IN PHYSICS

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

Type of Change¹ Academic Change
 Degree Program Change (THECB² form required)

Proposed classification³ 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

Replace an honors section of M 427K with an honors section of M 427J.

Reason: The Department of Mathematics is no longer teaching an honors section of M 427K.

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)

- | | | |
|--|--|---|
| <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 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) | |

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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 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.

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:

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5. COLLEGE/SCHOOL APPROVAL PROCESS

Dean's Scholars approval date: May 10, 2017 Approved by whom: Dean's Scholars Steering Committee

UTeach Program approval date: Sept. 22, 2017 Approved by whom: David Allen, UTeach Program, director

College approval date: Sept. 20, 2017 Approved by whom: Course and Curriculum Committee

Sept. 27, 2017

Dean approval date: Sept. 27, 2017 Approved by whom: David Vanden Bout, Associate Dean for Undergraduate Education

PROPOSED NEW CATALOG TEXT:⁴

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 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

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- 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 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*.

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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>.

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.