

GRADUATE COUNCIL: PROPOSAL FOR CHANGE IN EXISTING COURSE/PROGRAM

Originating Unit College of Education

Type of action: ☐ change in course ☒ change in program

Type of change requested:

- | | |
|---|--|
| <input type="checkbox"/> Number | <input type="checkbox"/> Course Title |
| <input checked="" type="checkbox"/> Description | <input type="checkbox"/> Prerequisite(s) Program |
| <input type="checkbox"/> Drop Course | <input type="checkbox"/> Requirements |
| <input type="checkbox"/> Drop Program* | <input type="checkbox"/> Other, please specify |

**A SACSCOC Drop Program Justification form will need to be completed*

Semester and year course/program will take effect: Fall 2021

Course instructional methodology:

course component types: [ugradcouncil.tcu.edu/forms/Course Component Types.pdf](http://ugradcouncil.tcu.edu/forms/Course%20Component%20Types.pdf)

Current name: Ph.D. in Science Education

Proposed name: Ph.D. in Science Education

Appropriate computer abbreviation (30 spaces or less):

Programs Only

Current program code: EDSC-PHD
(ex:EDCE-PHD)

Proposed code (list 2) or

Current CIP code: EDSC

Does the change require a new or change in CIP code: ☐ Yes ☒ No

If yes, what is the proposed new CIP code:

*for reference please visit: nces.ed.gov/ipeds/cipcode/resources.aspx?y=56

Is the program already considered TCU STEM: ☐ Yes ☒ No

Does the change include a request to be a TCU STEM program: ☐ Yes ☒ No

Description of change (omit if dropping a course or program):

The catalog description has been updated to reflect the change in program [63 hour to 56 hours] that strengthens the research and science education areas.

Present Catalog Copy

Educational Studies: Science Education

Ph.D.

The Ph.D. in Educational Studies: Science Education prepares students who are qualified to engage in high-quality original scholarship.

Recipients are prepared to assume faculty positions in science at the community college and university levels and take science leadership positions at district and state-level education agencies.

Admission

For admission into the program, applicants must have a master's degree in a science or education field. Applicants must present a strong academic record, acceptable GRE scores within the past five years, a writing sample (15-20 pages, exclusive of notes and works cited) that demonstrates appropriate academic writing skills needed for success in a graduate program and three letters of recommendation.

This program requires extensive knowledge from two academic units, including the College of Education and the College of Science & Engineering. Therefore, students may be admitted who lack the prerequisites for some of the courses required in the program. If such is the case, it is necessary for the student to complete the prerequisites in addition to the requirements of the Ph.D. degree.

Degree Requirements

A Ph.D. is a research degree. It is awarded for demonstrating competence in research by successfully defending a dissertation. The emphasis is on developing knowledge and skills in science education that result in the ability to conduct original research in science education. A general program of study is outlined below. Students are required to take a suitable number and variety of graduate courses and research apprenticeships to prepare them for the qualifying examination and for the writing of the dissertation. Depending on the graduate history of the student, the program would require 51-63 hours of coursework after acceptance into the program. The Ph.D. in Educational Studies: Science Education includes the following components.

I. Courses

Students take EDSC 70011 Colloquium in the Profession of Science Education, EDUC 70943 Apprenticeship in Teaching and other courses for the equivalent of 27 hours as approved by the adviser in the College of Education.

Research

Students take the equivalent of 12 hours of research coursework as approved by the adviser in the College of Education.

Science Content

Students take the equivalent of 18 hours of coursework that qualify for science content as approved by the adviser in the College of Education.

II. Apprenticeships

Proposed Catalog Copy:

Ph.D. in Science Education

The Ph.D. in Educational Studies: Science Education prepares students who are qualified to engage in high-quality original scholarship, and to teach at higher education. Recipients are prepared to assume faculty positions in science education or the sciences at various higher educational institutions. They will also be ready to leadership positions at district and state-level education agencies.

Admission

For admission into the program, applicants must have a master's degree in a science, education, or a related field. Admission criteria include: a strong academic record, a vita, a cover letter explaining the reason and goals of pursuing a Ph.D. in science education, a writing sample (15-20 pages, exclusive of notes and works cited) that demonstrates appropriate academic writing skills needed for success in a graduate program, three letters of recommendation, and an interview.

This program requires students to hold extensive knowledge from two academic units: knowledge about science content, and knowledge about science education. Students who do not have 9 credits of master level science courses will be required to complete those hours (or the equivalent) as part of their degree. After considering all application materials, the admission committee will meet and decide whether a student is admitted unconditionally, admitted provisionally, or not admitted.

Degree Requirements: The Ph.D in Science Education requires 56 credit hours. The following are degree requirements:

Science Education – Students will take EDSC 70011: Colloquia in Profession of Science Education for one hour in the first and second year (2 hours total), six science education courses (18 hours), and two other courses (6 hours) for the equivalent of 26 hours

EDSC 60333 Theory and Pedagogy

EDSC 60810 Seminar: Special Topics in Science Education

EDSC 60033 Academic Language Development in Science

EDSC 60053 Internship in Informal Setting

EDSC 70033 Scientific Inquiry and Nature of Science

EDSC 70043 Science in Global Community

EDSC 70053 History and Philosophy of Science

EDSC 70073 Learning Progressions in Science

Research – Students take the equivalent of 15 hours of research coursework as approved by the adviser in the College of Education. All students take EDUC 70960: Apprenticeship in Research and four other research courses.

EDUC 60043 Action Research

EDUC 60823 Education Evaluation

EDUC 70953 Research in Education

EDUC 70963 Qualitative Research I

EDUC 70964 Qualitative Research II

EDUC 70983 Intro to Quantitative Research

EDUC 70832 Inquiry Seminar

Science Content – Students, not having 9 hours of masters level science, take the equivalent of 9 hours of coursework that qualify for science content as approved by the adviser in the College of Education.

Supporting evidence or justification:

The ability of the College of Education to provide more science education courses and research courses made this change possible.

Explain how the change(s) will affect the current outcomes and assessment mechanisms?

This will not change the current outcomes and assessment mechanisms.

Additional resources required

Faculty: None

Space: None

Equipment: None

Library: None

Financial Aid: None

Other: None

Change in teaching load: None

Does this change affect any other units of the University? Yes ☐ No ☒

If yes, submit supporting statement signed by chair of affected unit.

If cross-listed, provide evidence of approval by all curriculum committees appropriate to both the originating and the cross-listed units.

Chair of Originating Unit:

Name: Jan Laciua

Unit: Education

Signature: Jan Laciua

Ph.D. in Science Education

The Ph.D. in Educational Studies: Science Education prepares students who are qualified to engage in high-quality original scholarship, and to teach at higher education. Recipients are prepared to assume faculty positions in science education or the sciences at various higher educational institutions. They will also be ready for leadership positions at district and state-level education agencies.

Admission

For admission into the program, applicants must have a master's degree in a science, education, or a related field. Admission criteria include: a strong academic record, a vitae, a cover letter explaining the reason and goals of pursuing a Ph.D in science education, a writing sample (15-20 pages, exclusive of notes and works cited) that demonstrates appropriate academic writing skills needed for success in a graduate program, three letters of recommendation, and an interview.

This program requires students to hold extensive knowledge from two academic units: knowledge about science content, and knowledge about science education. Students who do not have 9 credits of master level science courses will be required to complete those hours (or the equivalent) as part of their degree. After considering all application materials, the admission committee will meet and decide whether a student is admitted unconditionally, admitted provisionally, or not admitted.

Degree Requirements: The Ph.D in Science Education requires 56 credit hours. The following are degree requirements:

Science Education and Electives – Students will take EDSC 70011: Colloquia in Profession of Science Education for one hour in the first and second year (2 hours total), four to five science education courses (12 or 15 hours), and three to four other courses (9 or 12 hours) for the equivalent of 26 hours

- EDSC 60333 Theory and Pedagogy
- EDSC 60810 Seminar: Special Topics in Science Education
- EDSC 60033 Academic Language Development in Science
- EDSC 60053 Internship in Informal Setting
- EDSC 70033 Scientific Inquiry and Nature of Science
- EDSC 70043 Science in Global Community
- EDSC 70053 History and Philosophy of Science
- EDSC 70073 Learning Progressions in Science
- Electives: are taken with the approval of the advisor

Research – Students take the equivalent of 15 hours of research coursework as approved by the adviser in the College of Education. All students take EDUC 70960: Apprenticeship in Research and four other research courses.

- EDUC 60043 Action Research
- EDUC 60823 Education Evaluation

EDUC 70953 Research in Education
EDUC 70963 Qualitative Research I
EDUC 70964 Qualitative Research II
EDUC 70983 Intro to Quantitative Research
EDUC 70832 Inquiry Seminar

Science Content – Students, not having 9 hours of masters level science, take the equivalent of 9 hours of coursework that qualify for science content as approved by the adviser in the College of Education.

Qualifying Exam – The qualifying examination is taken when students have completed at least 32 total hours of coursework (of which 12 hours are science education courses) and prior to the dissertation. The purpose of the qualifying examination is to assess the student's readiness to begin dissertation research. Upon the successful completion of the qualifying examination, students are admitted to candidacy.

Dissertation – Students propose and conduct original research, write a dissertation, and defend the dissertation in a final oral examination. Students enroll in [EDUC 90980](#) until such time as the dissertation committee has approved the proposal, and [EDUC 90990](#) thereafter until a successful defense. Students may not begin dissertation data collection without the approval of their full advisory committee and, as appropriate, the TCU Institutional Review Board.

EDUC 90980 Dissertation

EDUC 90990 Dissertation

Sequence of Experiences

1. Completion of a minimum hours of coursework as approved by advisor
2. Completion of the qualifying examination (and remaining coursework)
3. Successful proposal of dissertation research
4. Completion of original research and successful defense of the resulting dissertation

Optional

Research community - Students will be encouraged to join a research community led by faculty as a way to engage in authentic research, professional presentation, and publication.

Teaching apprenticeship – For students with limited teaching experience, the apprenticeship provides an opportunity to focus on teaching.

- EDUC 60943: Apprenticeship in Teaching will be available for students whose career path includes university teaching.