

**UNDERGRADUATE COUNCIL  
Request for Change(s)**

Originating unit requesting change

Psychology

Type of Change requested:

- |   |   |  |
|---|---|--|
| <input type="checkbox"/> Course number(s)   | <input type="checkbox"/> Course prerequisite(s) | <input type="checkbox"/> Program description             |
| <input type="checkbox"/> Course title       | <input type="checkbox"/> Drop course(s)         | <input checked="" type="checkbox"/> Program requirements |
| <input type="checkbox"/> Course description | <input type="checkbox"/> Drop program(s)        |  |

Semester and year change(s) take effect:

Fall 2021

Appropriate computer abbreviation if course title is more than 30 spaces:

N/A

Briefly summarize the change requested:

Changes to B.S. in Neuroscience program requirements:

1. Change Chemistry requirement B to include two options: (a) BIOL 40513, or (b) CHEM 50133 and 50143, for a total of 3-6 hours instead of 6.
2. Reduce minimum number of hours in major from 81 to 78.
3. Permit substitution of PSYC 10213 and 6 hours of upper-level psychology for the PSYC 10513/10524 sequence, for students who have taken PSYC 10213 prior to transferring to TCU or declaring the neuroscience major.
4. Expand range of courses that count as Biology and Psychology electives.
5. Under Math/Computer Science requirements, change COSC option from COSC 10403 to COSC 10603.
6. Remove PSYC 50472 and PSYC 50482 from Psychology requirements.

**Programs Only**

Program Name: \_\_\_\_\_ Neuroscience, BS \_\_\_\_\_

Current Code: \_\_\_\_\_ Proposed New Code (list 2): \_\_\_\_\_ or \_\_\_\_\_  
(ex: INDE-BFA)

Can have second major: \_\_\_ Yes \_\_\_ No

Current CIP Code: \_\_\_\_\_

Does the change require a new or change in CIP code? \_\_\_ Yes \_\_\_ No

If yes, what is the proposed CIP code? \_\_\_\_\_

\*for reference, please visit: <https://nces.ed.gov/ipeds/cipcode/resources.aspx?y=56>

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## Catalog copy

Present catalog copy (paste-up from catalog is acceptable).

Proposed change(s). (Include exact catalog copy as desired. Underline changes)

### Neuroscience, BS

#### Requirements

The program of study requires a minimum of 81 hours, on a 124-hour degree, consisting of:

#### Biology (20 hours)

##### A. Required courses (8 hours):

<a href="#">BIOL 10501</a>	Introductory Biology Lab I
<a href="#">BIOL 10503</a>	Introductory Biology I
<a href="#">BIOL 10511</a>	Introductory Biology Lab II
<a href="#">BIOL 10513</a>	Introductory Biology II

##### B. Minimum of 12 hours selected from:

<a href="#">BIOL 30304</a>	Microbiology
<a href="#">BIOL 30404</a>	Comparative Vertebrate Anatomy
<a href="#">BIOL 30603</a>	Cellular, Molecular, and Developmental Biology
<a href="#">BIOL 40123</a>	Genetics
<a href="#">BIOL 40203</a>	Histology
<a href="#">BIOL 40403</a>	Mammalian Physiology

#### Chemistry (24 hours)

##### A. Required courses (18 hours):

<a href="#">CHEM 10113</a>	General Chemistry I
<a href="#">CHEM 10123</a>	General Chemistry II
<a href="#">CHEM 10122</a>	General Chemistry II Laboratory
	OR
<a href="#">CHEM 20123</a>	Quantitative Analysis
<a href="#">CHEM 30121</a>	Organic Chemistry I Laboratory
<a href="#">CHEM 30123</a>	Organic Chemistry I

### Neuroscience, BS

#### Requirements

The program of study requires a minimum of **78** hours, on a 124-hour degree, consisting of:

#### Biology (20 hours)

##### A. Required courses (8 hours):

<a href="#">BIOL 10501</a>	Introductory Biology Lab I
<a href="#">BIOL 10503</a>	Introductory Biology I
<a href="#">BIOL 10511</a>	Introductory Biology Lab II
<a href="#">BIOL 10513</a>	Introductory Biology II

##### B. Minimum of 12 hours selected from:

<a href="#">BIOL 30304</a>	Microbiology
<a href="#">BIOL 30404</a>	Comparative Vertebrate Anatomy
<a href="#">BIOL 30603</a>	Cellular, Molecular, and Developmental Biology
<a href="#">BIOL 30803</a>	<b>Human Parasitology</b>
<a href="#">BIOL 30843</a>	<b>Biomedical Imaging</b>
<a href="#">BIOL 40123</a>	Genetics
<a href="#">BIOL 40133</a>	<b>Molecular Basis of Human Disease</b>
<a href="#">BIOL 40203</a>	Histology
<a href="#">BIOL 40224</a>	<b>Developmental Biology</b>
<a href="#">BIOL 40254</a>	<b>Immunology</b>
<a href="#">BIOL 40403</a>	Mammalian Physiology
<a href="#">BIOL 40603</a>	<b>Virology</b>

#### Chemistry **and Biochemistry** (21-24 hours)

##### A. Required courses (18 hours):

<a href="#">CHEM 10113</a>	General Chemistry I
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<a href="#">CHEM 30133</a>	Organic Chemistry II	<a href="#">CHEM 10123</a>	General Chemistry II	3
<a href="#">CHEM 30143</a>	Organic Qualitative Analysis	<a href="#">CHEM 10122</a>	General Chemistry II Laboratory	

**B. Minimum of 6 hours selected from:**

<a href="#">CHEM 50133</a>	Biochemistry I
<a href="#">CHEM 50143</a>	Biochemistry II
<a href="#">CHEM 50502</a>	Biochemistry Laboratory
<a href="#">CHEM 50993</a>	Neurochemistry

[CHEM 20123](#) Quantitative Analysis

[CHEM 30121](#) Organic Chemistry I Laboratory

[CHEM 30123](#) Organic Chemistry I

[CHEM 30133](#) Organic Chemistry II

[CHEM 30143](#) Organic Qualitative Analysis

**Psychology (23 hours)**

**A. Required courses (8 hours):**

<a href="#">PSYC 10514</a>	Principles of Behavior I
<a href="#">PSYC 10524</a>	Principles of Behavior II

**B. Minimum of 6 hours selected from 3-6 hours, select one option:**

**Option 1 (3 hours):**

[BIOL 40513](#) Fundamentals of Biochemistry

**Option 2 (6 hours):**

[CHEM 50133](#) Biochemistry I

[CHEM 50143](#) Biochemistry II

[CHEM 50502](#) Biochemistry Laboratory

[CHEM 50993](#) Neurochemistry

**B. Minimum of 6 hours selected from:**

<a href="#">PSYC 30363</a>	Abnormal Psychology
<a href="#">PSYC 30414</a>	Experimental Psychology: Learning
<a href="#">PSYC 30423</a>	Experimental Psychology: Perception
<a href="#">PSYC 30433</a>	Experimental Psychology: Motivation
<a href="#">PSYC 30503</a>	Research Methods in Psychology

**C. Minimum of 9 hours selected from:**

<a href="#">PSYC 30463</a>	Introductory Neuroscience
<a href="#">PSYC 30483</a>	Human Neuropsychology
<a href="#">PSYC 50463</a>	Functional Neuroanatomy
<a href="#">PSYC 50472</a>	Laboratory in Physiological Psychology
<a href="#">PSYC 50482</a>	Laboratory in Physiological Psychology
<a href="#">PSYC 50513</a>	Psychopharmacology

**Psychology (23 hours)**

**A. Required courses (8 hours):**

[PSYC 10514](#) Principles of Behavior I

[PSYC 10524](#) Principles of Behavior II

Students who have completed PSYC 10213 prior to declaring a Neuroscience major or transferring to TCU may substitute PSYC 10213 and 6 hours of upper-level psychology for this requirement. The 6 upper-level hours are in addition to those listed under B and C.

**Physics (8 hours)**

<a href="#">PHYS 10154</a>	General Physics I with Laboratory
<a href="#">PHYS 10164</a>	General Physics II with Laboratory

**B. Minimum of 6 hours selected from:**

[PSYC 30363](#) Abnormal Psychology

[PSYC 30414](#) Experimental Psychology: Learning

[PSYC 30423](#) Experimental Psychology: Perception

[PSYC 30433](#) Experimental Psychology: Motivation

[PSYC 30473](#) Comparative Psychology

[PSYC 30503](#) Research Methods in Psychology

[PSYC 30523](#) Experimental Psychology: Cognition

**Mathematics and Computer Science (minimum of 6 hours):**

<a href="#">MATH 10043</a>	Elementary Statistics
<a href="#">MATH 10524</a>	Calculus I
<a href="#">COSC 10403</a>	Introduction to Programming

### C. Minimum of 9 hours selected from:

<a href="#">PSYC 30463</a>	Introductory Neuroscience
<a href="#">PSYC 30483</a>	Human Neuropsychology
<a href="#">PSYC 50463</a>	Functional Neuroanatomy
<a href="#">PSYC 50472</a>	Laboratory in Physiological Psychol
<a href="#">PSYC 50482</a>	Laboratory in Physiological Psychol
<a href="#">PSYC 50513</a>	Psychopharmacology

### Physics (8 hours)

<a href="#">PHYS 10154</a>	General Physics I with Laboratory
<a href="#">PHYS 10164</a>	General Physics II with Laboratory

### Mathematics and Computer Science (minimum of 6 hours):

<a href="#">MATH 10043</a>	Elementary Statistics
<a href="#">MATH 10524</a>	Calculus I
<a href="#">COSC 10403</a>	Introduction to Programming
<a href="#">COSC 10603</a>	Introduction to Python for Data Analytics

What is the justification for the change(s) requested?

1. BIOL 40513 is geared toward students on the pre-med track, which includes many Neuroscience majors, and is sufficient for meeting these students' professional school preparation needs. The CHEM biochemistry sequence will remain an option for students who want to explore biochemistry in greater depth. We envision that through advising, we will recommend the CHEM sequence to students who show strengths in Biology and Chemistry and make expected degree progress in freshman and sophomore year (i.e., finish Organic Chemistry I and II with good grades). However, offering both options will increase program flexibility, allow more Neuroscience majors to graduate in four years, and will be particularly helpful to transfer students majoring in Neuroscience.
  2. The change in minimum number of hours required for the major accommodates students taking advantage of the BIOL 40513 option (see #1).
  3. Students who take PSYC 10514/10524 lose credit for PSYC 10213 if they have taken this course previously, due to similarity in content. Because PSYC 10213 currently provides students with the same access to upper-level psychology courses as do PSYC 10514/10524, in spite of providing less depth, we have been approving this substitution (i.e., PSYC 10213 and two upper-level psychology courses of choice) regularly for students who earned credit for PSYC 10213 prior to enrolling in the neuroscience major.
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4. Expansion of the range of courses that count toward Biology and Psychology requirements reflects current course offerings in these departments that are of potential value to Neuroscience majors, increases program flexibility, and makes it easier for students to complete WEM within the major.
5. COSC 10603 teaches a programming language of major relevance for students majoring in Neuroscience who want to pursue graduate education in neuroscience or psychology.
6. PSYC 50472 and PSYC 50482 have not been offered in over 15 years and are being dropped from the catalog.

2. If applicable, explain how the change(s) will affect the current program outcomes and assessment mechanisms.

No effect on outcomes and assessment mechanisms.

3. **Faculty Resources:** How will the unit provide faculty support for this change and any other impact this change may have on other current departmental listings.

No changes in faculty support are needed in the Department of Psychology and there will be no effect on other psychology course listings or programs.

4. **Educational Resources:** Will this change require additional resources not currently available (e.g. space, equipment, library, other)?  YES  
If yes, list additional resources needed.  NO

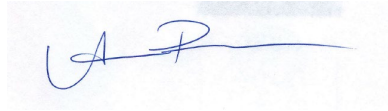
5. If this change affects other units of the University, include a statement signed by the chairperson(s) of the affected unit(s).

See attached emails from Giri Akkaraju, chair of Biology, and Donnell Payne, chair of Computer Science.

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

N/A

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A handwritten signature in blue ink, appearing to be 'A-P' followed by a long horizontal stroke.

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Approval signature of chairperson of originating unit

Revised 02/2020

2/3/2021

Re: Changes to Neuroscience curriculum - Petursdottir, Anna

## Re: Changes to Neuroscience curriculum

Akkaraju, Giridhar

Tue 2/2/2021 12:48 PM

To: Petursdottir, Anna <a.petursdottir@tcu.edu>;

Confirmed!

Thanks for checking.

Best,

Giri

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**From:** "Petursdottir, Anna" <a.petursdottir@tcu.edu>

**Date:** Tuesday, February 2, 2021 at 12:35 PM

**To:** "Akkaraju, Giridhar" <g.akkaraju@tcu.edu>

**Subject:** Re: Changes to Neuroscience curriculum

Hi Giri,

We corresponded about proposed changes to the Neuroscience curriculum back in November (see below). I subsequently received a suggestion from Mike Misamore to include Developmental Biology on our list of electives, and after consulting with the neuroscience faculty, we have decided to do so. I did not receive any other comments.

I just wanted to confirm with you that your department is able to approve the following changes, so I can submit documentation to the curriculum committee.

1. Allow Fundamentals of Biochemistry to count towards the Neuroscience major (as an alternative to the Big Biochem sequence). This may increase enrollment in Fun Biochem by a few students each year, but many of our students are already taking that course, so the impact probably will not be huge.
2. Add the following courses to the list of upper-level biology courses that count toward the major:

BIOL 30803 Human Parasitology

BIOL 30843 Biomedical Imaging

BIOL 40133 Molecular Basis of Human Disease

BIOL 40224 Developmental Biology

2/3/2021

Re: Changes to Neuroscience curriculum - Petursdottir, Anna

BIOL 40254 Immunology

BIOL 40603 Virology

The second change I don't think will have a major impact on your enrollment numbers in these courses, as I imagine all of our students will continue to take Cell Biology and I expect that a majority of at least the pre-health students will opt to prioritize courses like Genetics, Mam Phys, and CVA.

Thank you!

Anna

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Anna Ingeborg Petursdottir, Ph.D. (she/her/hers)  
Associate Professor and Chair  
TCU Department of Psychology  
Phone: 817-257-6412  
Email: a.petursdottir@tcu.edu





2/3/2021

Re: COSC in Neuroscience curriculum - Petursdottir, Anna

## Re: COSC in Neuroscience curriculum

Payne, Donnell

Tue 2/2/2021 1:11 PM

To: Petursdottir, Anna <a.petursdottir@tcu.edu>;

Hi Anna,  
Yes, that is fine and should not be a problem.  
dp

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**From:** Petursdottir, Anna  
**Sent:** Tuesday, February 2, 2021 12:40 PM  
**To:** Payne, Donnell  
**Subject:** Re: COSC in Neuroscience curriculum

Hi Donnell,

We corresponded back in November about changes we'd like to propose to the Neuroscience major, one of which would affect your department: Changing our COSC option from Intro to Programming to Python. I estimate this would decrease your enrollment in Programming by about 5 students (or less) per semester, with a corresponding increase in enrollment in Python.

I just wanted to confirm with you that this is a change your department is able to approve, so that I can go ahead and submit documents to the curriculum committee.

All the best,  
Anna

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Anna Ingeborg Petursdottir, Ph.D. (she/her/hers)  
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