PROPOSED CHANGES TO THE DEGREE AND ADMISSION FOR THE BACHELOR OF SCIENCE
IN NEUROSCIENCE IN THE COLLEGE OF NATURAL SCIENCES
IN THE UNDERGRADUATE CATALOG 2016-2018

Type of Change
☑ Academic Change
☐ Degree Program Change (THECB\textsuperscript{2} 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 SACS-COC APPROVAL IS REQUIRED.

- Is this a new degree program?  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:

Admissions
Remove NEU 335 as an admission requirement. Consequently, reduce the courses required for admission from 6 to 5 courses.

Rationale: We would like to admit students after 330 since students will not be able to be given priority access allowing them to enrolling upper-division lab electives if the department waits to admit them after receiving the NEU 335 grades. The change will allow us to admit students to the Neuroscience Cajal Scholars option while they are taking 335.

Remove M 408D, 408M, 427K, and 427L as optional courses to take during admission process to Option I.

Rationale: A discussion among the NEU faculty revealed that an understanding of multivariable calculus was only really required for the quantitative methods course, NEU 466M and 366N, which are now both electives. With this change, the mathematics, physics, chemistry, and biology requirements for the BSA (major in Neuroscience) and the BS in Neuroscience (Options I and III) will be identical.

Remove M 408D and M 408M.

Rationale: A discussion among the NEU faculty revealed that an understanding of multivariable calculus was only really required for the quantitative methods course, NEU 466M and 366N, which are now both electives. With this change, the mathematics, physics, chemistry, and biology requirements for the BSA (major in Neuroscience) and the BS in Neuroscience (Options I and III) will be identical.

Remove M 362K and SDS 321 in the core mathematics requirement.

Rationale: SDS 328M, Biostatistics, is more specific to the field of neuroscience than M 362K, Probability, and SDS 321, Intro to Probability and Statistics. M 362K and SDS 321 may count toward the requirement of 3 courses from a related discipline.

Reorder the calculus-based physics sequences to list he PHY 317K sequence first.
**Rationale:** Students tend to take the first set of courses they see as an option, and we would prefer that they take the option that focuses more on biomedical applications.

Remove NEU 365R as an alternative to NEU 330.

Rationale: We would like all students seeking neuroscience to take NEU 330, the first of our two core introductory courses. NEU 365R is our service course. NEU 365R will no longer count as a prerequisite for NEU 335 or any NEU elective.

Remove NEU 366M.

Rationale: NEU 366M (now 466M) is a quantitative methods computer lab course and we simply do not have the bandwidth to require majors to take it. NEU 466M will become an alternative course in a list of approved laboratory courses.

Update the requirement of 3 additional courses chosen from one of several fields of science.

Update the 12 hours of upper-division neuroscience laboratory courses.

Rationale: The faculty agree that the additions and deletions are appropriate. Some new neuroscience courses have been or are being developed, and we wish to add them to the list of electives.

Increase additional upper-division NEU from 6 hours to 9 hours. Add a notation that either BIO 325

Rationale: Since NEU 366M is no longer required, students may choose an additional upper-division NEU course.

**BS in Neuroscience, Option II**

**BS in Neuroscience, Option III**

Addition of Neuroscience option.

Rationale: The BS in Biology, Neurobiology option, is being dropped by the department. We created a new option in the BS in Neuroscience that will serve students who do not want the BSA Neuroscience major and do not want to complete the lab-intensive Option I: Cajal Scholars.

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
- [x] Course in the core curriculum
- [x] Change in course sequencing for an existing program
- [ ] Change in admission requirements (external or internal)
- [ ] Requirements not explicit in the catalog language (e.g., lists of acceptable courses maintained by department office)
- [ ] Flags
- [ ] Courses that have to be added to the inventory
  - NEU 326 (Neurogenetics)
  - NEU 367W (to replace BIO 367W)
  - NEU 371M (to replace BIO 371M)

4. **SCOPE OF PROPOSED CHANGE**

a. Does this proposal impact other colleges/schools?  
   - Yes [x] No [ ]

   If yes, then how?

b. Do you anticipate a net change in the number of students in your college?  
   - Yes [x] 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 [x] 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 [x] 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?
- Impacted schools must be contacted and their response(s) included:
  - Person communicated with:
  - Date of communication:
  - Response:
- Does this proposal involve changes to the core curriculum or other basic education requirements (42-hour core, signature courses, flags)? **No.** 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:
- Will this proposal change the number of hours required for degree completion? **No.** If yes, explain:

5. **COLLEGE/SCHOOL APPROVAL PROCESS**

- Department approval date: May 20, 2015
- College approval date:
- Dean approval date:

**PROPOSED NEW CATALOG TEXT:**

[Note: the following text is located in the Admission and Registration section of the Natural Sciences chapter.]

### The Bachelor of Science in Neuroscience, Option I

Prior to applying for admission to the Bachelor of Science in Neuroscience, option I, degree program, the student must earn a grades of at least B- in Neuroscience 330 or 365R, and Neuroscience 335. Neuroscience 330 or 365R, and 335 must be taken in residence. The student must also complete any of the four following courses, with grades of at least C-: Biology 311C, 311D, 315H, 325H; Chemistry 301, 301H, 302, 302H, and 204; Mathematics 408C, 408D, 408N, 408S, 408M, 427K, and 427L; and Physics 301, 316, 303K, 303L, 317K, and 317L. To be competitive for admission, the student should have a combined grade point average of at least 3.00 in the six courses required for admission. Entry level majors are encouraged to take Neuroscience 330 in the fall of their first year, and Neuroscience 335 in the spring of their first year.

To apply, the student should consult advisers in the Center for First-Year Advising for information about the application process and deadlines. Applications are evaluated after the end of each fall and spring semester by the Department of Neuroscience. Students whose applications are denied may reapply twice through the supplemental admission process. Admission decisions are based on a number of factors including, but not limited to, the student's grade point average, course load difficulty, and written statement about their commitment to a future in the field of neuroscience.
Bachelor of Science in Neuroscience

The Bachelor of Science degree in Neuroscience provides a strong foundation in the core sciences and related mathematical disciplines, along with the opportunity for training in a three-course specialization in one of six areas: biology, chemistry, computer science, mathematics, physics, or psychology. Distinctive features of the program include an emphasis on developing the quantitative, statistical, mathematical, and computational skills required in neuroscience, and meaningful hands-on laboratory experience.

Prescribed Work Common to All Options

All students pursuing an undergraduate degree must complete the University’s Core Curriculum. In addition, students seeking the Bachelor of Science in Neuroscience must complete the following degree-level requirements. In some cases, courses that fulfill degree-level requirements also meet the requirements of the core.

1. Two courses with a writing flag. One of these courses must be upper-division.
2. One course with a quantitative reasoning flag.

Courses with flags are identified in the Course Schedule. They may be used simultaneously to fulfill other requirements, unless otherwise specified.

3. At least twenty-one semester hours of upper-division coursework, including eighteen semester hours in biology and neuroscience, must be completed in residence at the University. All students must complete at least thirty-six semester hours of upper-division coursework.

Option I: Neuroscience Cajal Scholars

4. Mathematics 408C and 408D, or 408N, and 408S, and 408M; Mathematics 362K or Statistics and Data Sciences 321 or 328M.
5. An eight-semester-hour physics sequence of coursework in physics chosen from the following:
   b. Physics 303K, 103M, 303L, and 103N; or
6. Chemistry 301 or 301H, 302 or 302H, and 204.
7. Biology 311C and 311D, or Biology 315H and 325H, and Biology 206L.
8. Three additional majors-level courses selected from one of the following lists supporting disciplines:
   a. Biology: Biology 325 or 325H or Neuroscience 326, 320, 344, and 349, and 370.
   c. Computer Science: Computer Science 312, 314, Statistics and Data Sciences 335, 374E.
   d. Mathematics: Mathematics 427K, 427L, 340L or 341, 358K, 362K or 378K, Statistics and Data Sciences 321 or 329C. Students who chose Statistics and Data Sciences 328M for requirement 4, may not also count Mathematics 358K. Mathematics 362K and Statistics and Data Sciences 321 may not both count.
10. Neuroscience 335, 366M.
11. Twelve-semester-hours of laboratory courses chosen from the following: Neuroscience 365L, 366E, 366L, 366N, 366P, 366S, 367W, 466G, and 466M, and 377; the same section of Neuroscience 377, Undergraduate Research, may not count toward requirement 13 if used to fulfill this requirement.
additional approved Neuroscience 337 courses, and Biology 359K, and Neuroscience 365D. Only one of the following may count: Biology 325, 325H, and Neuroscience 326. Biology 325, 325H, or Neuroscience 326 may count toward requirement 8a or requirement 12, but not both.

13. Three additional semester hours of either Neuroscience 377 (Undergraduate Research) or Neuroscience 379H (Honors Tutorial Course); the research topic in Neuroscience 377 or 379H must relate to neuroscience and be approved in advance by the faculty adviser.

Enough additional coursework to make a total of 120 semester hours.

**Option II: Neuroscience Honors**

4. Breadth requirement: An honors mathematics course; Biology 315H and 325H; Chemistry 301H and 302H; and one of the following: Physics 301 and 101L; or Physics 316 and 116L; credit earned by examination may not be counted toward this requirement.

5. Three hours of statistics chosen from the following: Statistics and Data Sciences 321, 325H, or 328M; other statistics courses may be approved by the departmental honors adviser.

6. One of the following: Physics 315 and 115L, Physics 316 and 116L, Physics 338K, 345, 355; courses counted toward requirement 4 may not also be counted toward requirement 6.

7. Chemistry 204.

8. Chemistry 128K, 128L, 328M, and 328N.

9. Biology 320 or 344.


15. A section of Undergraduate Studies 302 or 303 that is approved by the departmental honors adviser.

16. A section of Rhetoric and Writing 309S that is restricted to students in the Dean's Scholars Honors Program.

17. Two semesters of Neuroscience 379H.

18. Eight additional semester hours of coursework approved by the departmental honors adviser.

19. Six semester hours of coursework in the College of Liberal Arts or the College of Fine Arts.

20. Enough additional coursework to make a total of 120 semester hours.

**Option III: Neuroscience**

4. Mathematics 408C or 408N and 408S; and Statistics and Data Sciences 328M.

5. An eight hour physics sequence chosen from the following:
   b. Physics 303K, 103M, 303L, and 103N;
   c. Physics 301, 101L, 316, and 116L.

6. Chemistry 301 or 301H, 302 or 302H, and 204.

7. Biology 311C and 311D, or 315H and 325H; and 206L.


10. At least six-semester-hours of upper division laboratory course work chosen from the following: Biochemistry 369T, Neuroscience 365L, 366E, 366L, 366N, 366P, 366S, 367W, 466G or
466M. Neuroscience laboratory courses taken to fulfill the fifteen-semester-hour upper division neuroscience course requirement may not be counted twice.

11. Enough additional coursework to make a total of 120 semester hours.

Special Requirements

Students 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 under option II, students must remain in good standing in the Dean's Scholars Honors Program, must submit an honors thesis approved by the departmental honors adviser, and must present their research in an approved public forum, such as the college's annual Undergraduate Research Forum.

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1 See [http://www.utexas.edu/provost/planning/cat_change/UnderGrad.html](http://www.utexas.edu/provost/planning/cat_change/UnderGrad.html) for detailed explanations.
2 Texas Higher Education Coordinating Board.
3 Exclusive: of exclusive application and of primary interest only to a single college or school ("no protest" period is 5 working days); general: of general interest to more than one college or school (but not for submission to the General Faculty) ("no protest" period is 10 working days); major legislation must be submitted to the General Faculty for adoption ("no protest” period is 10 working days).
4 The proposed text should be based on the text of the current catalog available at [http://www.utexas.edu/faculty/council/pages/catalog_chgs/catcopy.html](http://www.utexas.edu/faculty/council/pages/catalog_chgs/catcopy.html).

Strike through and replace (with underlines) only the specific language to be changed. Do NOT use “track changes!” 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.