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 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:

BS in Neuroscience, Option I

Option 1: Rename the option as Neuroscience Cajal Scholars.
Rationale: The department is renaming the lab-intensive option to differentiate it from the newly added Option III. In this option, students are required to complete 4 neuroscience laboratory courses and conduct undergraduate research with neuroscience faculty under the NEU 377 and 379H course numbers. Santiago Ramon y Cajal is considered one of the fathers of modern neuroscience so naming the option after him was considered appropriate.

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 the 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. Add M 427J as an alternative to M 427K.
Rationale: The faculty decided M 362K is the appropriate probability course to support research in the field of neuroscience. The additions were made with approvals from the departments offering the courses in biology, chemistry, and mathematics.

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.

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

BS in Neuroscience, Option II
Update requirement 13 and 14 with additional neuroscience course choices.

Rationale: The neuroscience faculty and the Dean’s Scholars director agree that the additions are appropriate.

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
- 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)
- NEU 367W (replace BIO 367W)
- NEU 371M (replace BIO 371M)
- X addition of Option III

4. SCOPE OF PROPOSED CHANGE

a. Does this proposal impact other colleges/schools? Yes □ No □
   If yes, then how?

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?
   Impacted schools must be contacted and their response(s) included:

   Person communicated with:
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

[no changes]

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, 320, 344, and 349, and 370.
   c. Computer Science: Computer Science 312, 314, Statistics and Data Sciences 335, 374E.
   d. Mathematics: Mathematics 427J or 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.


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.

14. 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, 311D, and 325 or 315H and 325H.

8. BIO 206L.


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

Special Requirements
[no changes]

---

1 See 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. 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.