

DOCUMENTS OF THE GENERAL FACULTY

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

Dean Linda A. Hicke in the College of Natural Sciences has filed with the secretary of the Faculty Council the following changes to the degree and admission for the BS in Neuroscience in the College of Natural Sciences chapter in the *Undergraduate Catalog, 2016-2018*. On May 20, 2015, the faculty representatives from department approved the changes and on September 23, the college curriculum committee approved them. On September 28, 2015, Associate Dean David Vanden Bout approved it on behalf of the dean. The secretary has classified this proposal as legislation of *exclusive* interest to a single college or school.

The Committee on Undergraduate Degree Program Review recommended approval of the changes on October 18, 2015, and forwarded them to the Office of the General Faculty. The Faculty Council has the authority to approve this legislation on behalf of the General Faculty. The authority to grant final approval on this legislation resides with UT System.

If no objection is filed with the Office of the General Faculty by the date specified below, the legislation will be held to have been approved by the Faculty Council. If an objection is filed within the prescribed period, the legislation will be presented to the Faculty Council at its next meeting. The objection, with reasons, must be signed by a member of the Faculty Council.

To be counted, a protest must be received in the Office of the General Faculty by December 4, 2015.



Hillary Hart, Secretary
General Faculty and Faculty Council

**PROPOSED CHANGES TO THE DEGREE AND ADMISSION FOR THE BACHELOR OF SCIENCE
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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 <input type="checkbox"/> | No <input checked="" type="checkbox"/> |
| • Does the program offer courses that will be taught off campus? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> |
| • Will courses in this program be delivered electronically? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> |

2. EXPLAIN CHANGE TO DEGREE PROGRAM AND GIVE A DETAILED RATIONALE FOR EACH INDIVIDUAL CHANGE:

BS in Neuroscience, Option I

1. 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 four 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.

2. 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.

3. 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 three courses from a related discipline.

4. 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.

5. 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.

6. 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.

7. Update the requirement of three 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.

8. Update the twelve 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.

9. Increase additional upper-division NEU from six hours to nine 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 thirteen and fourteen 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)

- | | | |
|--|--|---|
| <input 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 checked="" type="checkbox"/> Change in course sequencing for an existing program | <input checked="" type="checkbox"/> Courses that have to be added to the inventory: NEU 367W (replace BIO 367W) ; NEU 371M (replace BIO 371M) |
| <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) | <input checked="" type="checkbox"/> Other: 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:

Date of communication:

Response:

- e. Does this proposal involve changes to the core curriculum or other basic education requirements (42-hour core, signature courses, flags)? If yes, explain: No

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? If yes, explain: **No**

5. COLLEGE/SCHOOL APPROVAL PROCESS

Department approval date: September 8, 2015

College approval date: September 9, 2015

Dean approval date: September 28, 2015, David Vanden Bout, Associate Dean

PROPOSED NEW CATALOG TEXT:

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 [~~324 or~~] 328M.
5. An eight[~~-semester-~~]hour physics sequence [~~of coursework in physics~~] chosen from the following:
 - a. Physics 317K, 117M, 317L, and 117N; [~~301, 101L, 316, and 116L;~~]
 - b. Physics 303K, 103M, 303L, and 103N; [~~or~~]
 - c. Physics 301, 101L, 316, and 116L [~~317K, 117M, 317L, and 117N.~~]
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.
 - b. Chemistry: Chemistry 328M and 128K, 328N and 128L, 353 or 353M, and Biochemistry 369.
 - 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.
 - e. Physics: Physics 345, 338K, 355.
 - f. Psychology: Psychology 301, 323, 353K, 355.
9. Neuroscience 330 [~~or 365R, and Neuroscience 335.~~]
 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.~~]
 12. [~~Six~~] Nine-semester-hours of upper-division neuroscience to be chosen from: Biology 325, 359K, 365N, Neuroscience 337 [~~(Topic: Sensory Neuroscience), 337 (Topic: Genetic Analysis of Behavior and Disease), Biology 365N, Neuroscience~~] 365T, 365W, 366C, 366D, 466G, 366N, 367F, 367V, and 371M. [~~additional approved Neuroscience 337 courses, and Biology 359K, and Neuroscience 365D.~~] Biology 325 or 325H may count toward either requirement 8a or requirement 12.
 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.
10. Biology 349 and 370.
11. Neuroscience [~~365R or~~] 330.
12. Neuroscience 335.
13. Nine hours of laboratory courses chosen from: Neuroscience 365L, 366E. [~~Neuroscience~~] 366L, 366N, [~~Neuroscience~~] 366P, and [Neuroscience] 366S, 367W, 466G, and 466M.
14. Six hours of upper-division neuroscience chosen from: Neuroscience 337 [~~(Topic: Sensory Neuroscience), 377 (Topic: Genetic Analysis of Behavior and Disease),~~] 365D, 365T, 365W, 366C, 366D, [366E, 466G, 366M, 366N,] 367F, 367V, 371M, and 377. [~~additional approved Neuroscience 337 courses, and Neuroscience 365D.~~]
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:
 - a. Physics 317K, 117M, 317L, and 117N;
 - 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.
9. Neuroscience 330 and 335.
10. Fifteen hours of upper-division neuroscience chosen from Biology 359K, 365N, Neuroscience 337, 365D, 365L, 365T, 365W, 366C, 366D, 366E, 366L, 366N, 366P, 366S, 367F, 367V, 367W, 371M, 377, 466G and 466M.
11. Six additional hours of upper-division laboratory course work chosen from the following: Biochemistry 369T, Biology 320L, 321L, 325L, 331L, 340L, 446L, 448L, 453L, 354L, 455L, 456L, 369L, 478L, Neuroscience 365L, 366E, 366L, 366N, 366P, 366S, 367W, 466G or 466M. Neuroscience 365L, 366E, 366L, 366N, 366P, 366S, and 367W may count toward requirement 10 or requirement 11.
12. Enough additional coursework to make a total of 120 semester hours.

Special Requirements

[no changes]