

# NEUROSCIENCE, B.S.

## Requirements

| Code   | Title   | Hours        |
|--|---|--------------|
| <b>Required Courses from BIO/PSY/NEU</b>         |   |              |
| <b>24-26</b>                                     |   |              |
| <i>Biology:</i>                                  |   |              |
| BIO 150 & 150L                                   | Biology I and Biology I Lab   | 4            |
| BIO 160 & 160L                                   | Biology II and Biology II Lab   | 4            |
| <i>Psychology:</i>                               |   |              |
| PSY 151  | Introductory Psychology   | 3            |
| <i>Neuroscience:</i>                             |   |              |
| NEU 200  | Introduction to Neuroscience  | 3            |
| NEU 220  | Survey of Neuroscience and the Humanities   | 3            |
| NEU 354 & 354L<br>or BIO 354 & 354L              | Neuroscience Methods and Neuroscience Methods Lab<br>and Neuroscience Methods Lab | 4            |
| NEU 389  | Neuroscience Seminars   | 3            |
| <i>Research</i>                                  |   |              |
| NEU 391  | Research in Neuroscience  | 2            |
| <b>Elective Courses</b>                          |   | <b>12-14</b> |
| <i>Biology Electives</i>                         |   | 6-8          |
| Two courses must be selected from the following: |   |              |
| BIO 301  | Topics in Biology (if the course is related to neuroscience)                      | 3-4          |
| BIO 302  | Topics in Biology (if the course is related to neuroscience)                      | 3-4          |
| BIO 303  | Topics in Biology (if the course is related to neuroscience)                      | 3-4          |
| BIO 304  | Topics in Biology (if the course is related to neuroscience)                      | 3-4          |
| BIO 305  | Topics in Biology (if the course is related to neuroscience)                      | 3-4          |
| BIO 306  | Topics in Biology (if the course is related to neuroscience)                      | 3-4          |
| BIO 323 & 323L                                   | Animal Behavior and Animal Behavior Lab *   | 3-4          |
| BIO 324  | Hormones and Behavior   | 3            |
| BIO 339  | Animal Cognition  | 3            |
| BIO 343  | Molecular Neuroscience  | 3            |
| BIO 346 & 346L                                   | Neurobiology and Neurobiology Lab   | 3-4          |
| BIO 352  | Developmental Neuroscience  | 4            |
| BIO 353  | Functional Neuroanatomy   | 3            |
| BIO 361  | Principles of Biological Microscopy   | 4            |
| BIO 363 & 363L                                   | Sensory Biology and Sensory Biology Lab   | 3-4          |
| BIO 374  | Neuropharmacology **  | 3            |
| <i>Psychology Electives</i>                      |   |              |
| One course must be chosen from the following:    |   |              |

|   |   |   |
|---|---|---|
| PSY 220                                       | Biopsychology                                   | 3 |
| PSY 221                                       | Cognitive Psychology                            | 3 |
| PSY 222                                       | Psychopharmacology **                           | 3 |
| PSY 223                                       | Social Affective Neuroscience                   | 3 |
| PSY 241                                       | Developmental Psychology                        | 3 |
| PSY 263                                       | Stress and Coping                               | 3 |
| PSY 264                                       | Abnormal Psychology                             | 3 |
| One course must be chosen from the following: |   |   |
| PSY 321                                       | Seminar in Cognitive Psychology                 | 3 |
| PSY 325                                       | Seminar in Perception                           | 3 |
| PSY 327                                       | Seminar in Physiological Psychology             | 3 |
| PSY 334                                       | Seminar in Animal Behavior *                    | 3 |
| PSY 352                                       | Research in Learning Theory                     | 3 |
| <i>Co-requirements</i>                        |   |   |
| CHM 111 & 111L                                | College Chemistry I and College Chemistry I Lab | 4 |
| STA 111                                       | Elementary Probability and Statistics           | 3 |
| CSC 111                                       | Introduction to Computer Science                | 4 |
| Choose two of the following:                  |   |   |

\* Either BIO 323 or PSY 334 may count towards the major, but not both.

\*\* Either BIO 374 or PSY 222 may count towards the major, but not both.

For the B.S. major, the schedule of courses is flexible. After completing PSY 151, BIO 150, BIO 150L, BIO 160, and BIO 160L, students should begin taking NEU core courses. It is recommended that all prospective majors take CHM 111 and CHM 111L in the fall of the first year and complete BIO 150 and BIO 150L and STA 111 or an equivalent course during either the fall or spring of the first year. Students pursuing the B.S. in neuroscience with an interest in a health profession career are additionally advised to take CHM 122 and CHM 122L in the spring of the first year. These students should select additional co-requirements after consulting with a health professions adviser.

A maximum of two hours of 390-sequence courses may be counted as hours in the major, but an additional six hours may be taken and applied toward graduation as elective hours.

| Code  | Title   | Hours |
|---|---|-------|
| Any CHM course at the 100- level or above, except CHM 108, 301, 381, 390, 391, or CHM 395 |   |       |
| CSC 112   | Fundamentals of Computer Science              | 4     |
| CSC 201   | Data Structures and Algorithms                | 3     |
| CSC 231   | Programming Languages                         | 3     |
| ECN 319   | Behavioral Economics                          | 3     |
| MTH 111   | Calculus with Analytic Geometry I             | 4     |
| MTH 112   | Calculus with Analytic Geometry II            | 4     |
| MTH 113   | Multivariable Calculus                        | 4     |
| MTH 117   | Discrete Mathematics                          | 4     |
| PHY 113 & 113L  | General Physics I and General Physics Lab     | 4     |
| PHY 114 & 114L  | General Physics II and General Physics II Lab | 4     |
| PHY 115   | The Physics of Music                          | 4     |

|                   |  |   |
|-------------------|--|---|
| PHY 123<br>& 123L | General Physics I - Studio Format<br>and General Physics I - Studio Format Lab   | 4 |
| PHY 124<br>& 124L | General Physics II - Studio Format<br>and General Physics II - Studio Format Lab | 4 |
| STA 112           | Introduction to Regression and Data<br>Science                                   | 3 |

## Honors

Highly qualified majors are invited by the program to apply for admission to the honors program in neuroscience. To be graduated with the distinction "Honors in Neuroscience," a graduating student must have a minimum GPA of 3.0 in all courses and a 3.3 in elective BIO, NEU and PSY courses. In addition, the student must submit an honors paper describing his or her independent research project, written in the form of a scientific paper. Students interested in pursuing an honors degree must obtain preapproval from the Honors Program Coordinator during the fall of the senior year. Upon completion of all requirements, a recommendation of honors at graduation will be made by the department based upon the student's overall academic record and the quality of the final project.

Specific details regarding the requirements for the honors program, deadlines, and writing of the honors thesis, may be obtained from the Director or Associate Director of the Neuroscience Program and can be found on the program website.