# Bachelor of Science in Neuroscience

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<th>Year</th>
<th>Fall Semester</th>
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<td>1&lt;sup&gt;ST&lt;/sup&gt; YEAR</td>
<td>Fall Semester</td>
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### Core Courses
- Principles of Chemistry I (CHEM: 1110)
- Principles of Chemistry II (CHEM: 1120)

### Chemistry Courses
- Introduction to Behavioral Neuroscience (PSY: 2701)<sup>A</sup>
- Foundations of Biology (BIOL: 1411)
- Introduction to Cognitive Neuroscience (PSY: 2975)
- Research Methods and Data Analysis I (PSY: 2811)
- Research Methods and Data Analysis II (PSY: 2812)
- Animal Physiology (BIOL: 3343)
- Developmental Neurobiology (BIOL: 3753)

### Physics Courses
- College Physics I (PHYS: 1511)<sup>C</sup>
- College Physics II (PHYS: 1512)<sup>C</sup>

### Math/Statistics Courses
- Calculus (1 course, see options)<sup>B</sup>
- Biochemistry (1 or 2 courses, see options)<sup>D</sup>
- Neuroscience Electives (3 courses, see options)<sup>E</sup>

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<sup>A</sup> Introduction to Behavioral Neuroscience (PSY: 2701) can be taken in the 2<sup>ND</sup> or 3<sup>RD</sup> year, depending on the student's schedule.

<sup>B</sup> Calculus options vary and can be chosen based on the student's major.

<sup>C</sup> Physics courses are typically taken in the 3<sup>RD</sup> and 4<sup>TH</sup> years.

<sup>D</sup> Biochemistry course options are determined by the student's program requirements.

<sup>E</sup> Neuroscience elective options are provided by the neuroscience institute and can vary based on student interest and major.

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**IOWA NEUROSCIENCE INSTITUTE**
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Choose one of the following options:
- Calculus for the Biological Sciences (MATH:1460, 4 sh, Fall and Spring semesters; RECOMMENDED)
- Engineering Mathematics I: Single Variable Calculus (MATH:1550, 4 sh, Fall and Spring semesters)
- Calculus 1 (MATH:1850, 4 sh, Fall and Spring semesters)

Choose one of the following laboratory courses:
- Neurobiology Laboratory (BIOL:3656, 4 sh, Spring semester only)
- Animal Behavior with Laboratory (BIOL:3244, 5 sh for course + laboratory, Fall semester only; Note that you must enroll in both the lab and the lecture)

Choose one of the following options:
- 1 course option: Biochemistry (BIOC: 3110, 3 sh, Fall and Spring semesters; Note that BIOC:3110 is an in-person course each Fall and an online-only course each Spring)
- 2 course option: Biochemistry and Molecular Biology I and II (BIOC: 3120, 3 sh, Fall and Spring semesters; AND BIOC: 3130, 3 sh, Fall and Spring semesters; Note that BIOC:3120 is an in-person course each Fall and an online-only course each Spring, while BIOC:3130 is an online-only course each Fall and an in-person course each Spring)
- Note that Biochemistry could be taken at any point after Principles of Chemistry II, though it is recommended to take it in the 3rd or 4th year.

Choose three of the following elective courses. Note that these need not be taken in the 4th year; as long as prerequisites have been completed, students may take electives earlier.
- Fundamental Genetics (BIOL:2512)
- Genes and Development (BIOL:4333) [Note: BIOL: 2512 is a prerequisite]
- Cell Biology (BIOL:2723)
- Mechanisms of Aging (BIOL:2603)
- Endocrinology (BIOL:2254)
- Neurophysiology (BIOL:4353)
- Psychopharmacology (PSY:3230)
- Psychology of Learning (PSY:3040)
- Motivation, Addiction, and the Brain (PSY:3240)
- Neuroscience of Learning and Memory (PSY:3250)
- Neurobiology of Stress (PSY:3270)
- Aging Mind and Brain (PSY:3066)

For more information, please contact:

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Note: we strongly encourage Neuroscience Majors to choose PSY:1001, Elementary Psychology, to fulfill their Social Sciences General Education course requirement. This can be taken concurrently with PSY:2701 during the first semester, if possible. Credit for Advanced Placement Psychology taken as a high school student may fulfill this Social Sciences General Education requirement; please see your advisor.

Note that these two semesters of College Physics could be completed any time. However, it may be helpful if College Physics II is taken concurrently, or prior to, Neurobiology BIOL:3253, due to its discussion of electricity.

Note: we strongly encourage Neuroscience Majors to choose PSY:1001, Elementary Psychology, to fulfill their Social Sciences General Education course requirement. This can be taken concurrently with PSY:2701 during the first semester, if possible. Credit for Advanced Placement Psychology taken as a high school student may fulfill this Social Sciences General Education requirement; please see your advisor.