# Bachelor of Science Degree Requirements

## Writing (4 credits)

**ONE (1) of the following courses:**
1. WRA 101 (4) Writing, Rhetoric, and American Cultures *(Prior to Fall 2016: WRA 110–150 (4) Writing, Rhetoric, and American Cultures)*
2. WRA 195H (4)

## Integrative Studies***

- IAH 201–210 (4) Arts and Humanities
- IAH 211–241 (4) Arts and Humanities
- ISS 200 level (4) Social Science
- ISS 300 level (4) Social Science

***Students MUST include at least one National (N) course and one International / Multicultural (I) course in their Integrative Studies programs. A National / International / Multicultural (D) course may meet either an (N) or (I) requirement, but not both. See course descriptions for details.

NOTE: ISB & ISP requirements are fulfilled by the required Biology and Chemistry courses as part of the "Alternative Track" to Completion of the Integrated Science Requirements.

## General Neuroscience Degree Requirements

**ONE (1) of the following pairs of courses (5 or 6 credits):**

1. **CEM 141:** General Chemistry (4)
   
   **CEM 161:** Chemistry Laboratory I (1)

2. **CEM 151:** General and Descriptive Chemistry (4)
   
   **CEM 161:** Chemistry Laboratory I (1)

3. **CEM 181H:** Honors Chemistry I (4)
   
   **CEM 185H:** Honors Chemistry Laboratory (2)

4. **LB 171:** Principles of Chemistry I (4)
   
   **LB 171L:** Introductory Chemistry Laboratory I (1)

**ONE (1) of the following pairs of courses (6 or 8 credits):**

1. **PHY 231:** Introductory Physics I (3)
   
   **PHY 232:** Introductory Physics II (3)

2. **PHY 241:** Physics for Cellular and Molecular Biologists I (4)
   
   **PHY 242:** Physics for Cellular and Molecular Biologists II (4)

3. **PHY 183:** Physics for Scientists and Engineers I (4)
   
   **PHY 184:** Physics for Scientists and Engineers II (4)

4. **PHY 193H:** Honors Physics I – Mechanics (4)
   
   **PHY 294H:** Honors Physics II – Electromagnetism (4)

5. **LB 273:** Physics I (4)
   
   **LB 274:** Physics II (4)

**ONE (1) of the following courses (3 or 4 credits):**

1. **STT 201:** Statistical Methods (4)

2. **STT 231:** Statistics for Scientists (3)

3. **STT 421:** Statistics I (3)

**ONE (1) of the following groups of courses (8 or 9 credits):**

1. **BS 161:** Cell and Molecular Biology (3)
   
   **BS 162:** Organismal and Population Biology (3)

2. **BS 171:** Cell and Molecular Biology Laboratory (2)

3. **BS 181H:** Honors Cell and Molecular Biology (3)
   
   **BS 182H:** Honors Organismal and Population Biology (3)

4. **BS 191H:** Honors Cell and Molecular Biology Laboratory (2)

5. **LB 144:** Biology I – Organismal Biology (4)
   
   **LB 145:** Biology II – Cellular and Molecular Biology (5)

**ONE (1) of the following pairs of courses (6 credits):**

1. **CEM 251:** Organic Chemistry I (3)
   
   **CEM 252:** Organic Chemistry II (3)

2. **CEM 351:** Organic Chemistry I (3)
   
   **CEM 352:** Organic Chemistry II (3)

**ONE (1) of the following courses (3 or 4 credits):**

1. **MTH 124:** Survey of Calculus I (3)

2. **MTH 132:** Calculus I (3)

3. **MTH 152H:** Honors Calculus I (3)

4. **LB 118:** Calculus I (4)

**ONE (1) of the following courses (8 credits):**

1. **BMB 401:** Comprehensive Biochemistry (4)

2. **PSY 101:** Introductory Psychology (4)

**ONE (1) of the following (4 or 8 credits):**

1. **PSL 310:** Physiology for Pre-Health Professionals (4)

2. **PSL 431:** Human Physiology I (4), and **PSL 432:** Human Physiology II (4)

**ONE (1) course from EACH of the following groups of courses (6 or 7 credits):**

1. **PHM 350:** Introductory Human Pharmacology (3)
   
   **PHM 431:** Pharmacology of Drug Addiction (3)

2. **PHM 480:** Special Problems (3)*

3. **MMG 409:** Eukaryotic Cell Biology (3)
   
   **IBIO 341:** Fundamental Genetics (4)

*Prior Approval from Neuroscience Academic Advisor is REQUIRED!
**NEUROSCIENCE CORE COURSES – REQUIRED FOR ALL CONCENTRATIONS**

All of the following courses (8 credits):

- NEU 301: Introduction to Neuroscience I (3)
- NEU 302: Introduction to Neuroscience II (3)
- NEU 311L: Neuroscience Laboratory (W) (2)

**NEUROSCIENCE CORE – CONCENTRATIONS**

15 credits in courses from ONE (1) of the following concentrations:

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<thead>
<tr>
<th>Cellular and Developmental Neuroscience</th>
<th>Behavioral and Systems Neuroscience</th>
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<tbody>
<tr>
<td>IBIO 341: Fundamental Genetics (4)</td>
<td>IBIO 313: Animal Behavior (3)</td>
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<td>IBIO 343: Genetics Laboratory (3)</td>
<td>IBIO 403: Integrative Neurobiology (3)</td>
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<td>IBIO 425: Cells and Development (W) (4)</td>
<td>IBIO 405: Neural Basis of Animal Behavior (3)</td>
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<td>MMG 404: Human Genetics (3)</td>
<td>NEU 310: Psychobiology of Human Sexuality (3)</td>
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<td>NEU 415: Neuroinformatics and Quantitative Reasoning (3)</td>
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<td>NEU 417: Instrumental Methods of Analysis in Neuroscience (3)</td>
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<td>NEU 420: Neurobiology of Disease (3)</td>
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<td>NEU 445: Analysis of Functional Neuroscience Data (3)</td>
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<td>NEU 435: Ion Channels of Excitable Membranes (3)</td>
<td>NEU 490: Special Problems in Neuroscience*</td>
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<td>NEU 440: Synthetic Transmission (3)</td>
<td>NEU 492: Special Topics in Neuroscience*</td>
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<tr>
<td>NEU 445: Analysis of Functional Neuroscience Data (3)</td>
<td>PHM 422: Fundamentals of Neuropharmacology (2-3)</td>
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<td>NEU 490: Special Problems in Neuroscience*</td>
<td>PHM 431: Pharmacology of Drug Addiction (3)</td>
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<tr>
<td>NEU 492: Special Topics in Neuroscience*</td>
<td>PHM 480: Special Problems (1-3)*</td>
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<tr>
<td>PHM 422: Fundamentals of Neuropharmacology (2-3)</td>
<td>PSY 209: Brain and Behavior (3)</td>
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<td>PHM 431: Pharmacology of Drug Addiction (3)</td>
<td>PSY 333: Neurobiology of Food Intake (3)</td>
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<td>PHM 480: Special Problems (3)*</td>
<td>PSY 402: Sensation and Perception (W) (3)</td>
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<tr>
<td>PLB 400: Introduction to Bioinformatics (3)</td>
<td>PSY 409: Psychology of Behavioral Development (W) (3)</td>
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</table>

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**NOTE:** No more than 3 credits each of NEU 490 and NEU 492 may count towards the Neuroscience degree concentration requirements.

**NOTE:** MMG 409 and IBIO 341 may NOT be used for both the General Neuroscience Degree requirement and this concentration.

**NOTE:** PHM 431 and PHM 480 may NOT be used for both the General Neuroscience Degree requirement and this concentration.

**Cognitive and Computational Neuroscience**

| LIN 455: | Neurolinguistics (3) |
| LIN 463: | Introduction to Cognitive Science (3) |
| NEU 415: | Neuroinformatics and Quantitative Reasoning (3) |
| NEU 417: | Instrumental Methods of Analysis in Neuroscience (3) |
| NEU 425: | Computational Modeling in Neuroscience (3) |
| NEU 430: | Genomics of Brain and Behavior (3) |
| NEU 445: | Analysis of Functional Neuroscience Data (3) |
| PHL 101/200: | Introduction to Philosophy (3) |
| PHL 462: | Philosophy of Mind (3) |
| PSL 429: | Biomedical Imaging Methods (3) |
| PSY 200: | Cognitive Psychology (3) |
| PSY 209: | Brain and Behavior (3) |
| PSY 301: | Cognitive Neuroscience (3) |
| PSY 401: | Expertise and Skill (W) (3) |
| PSY 402: | Sensation and Perception (W) (3) |
| PSY 410: | Neurobiology of Learning and Memory (W) (3) |
| PSY 493: | Issues in Psychology (W) (3)* |
| NEU 490: | Special Problems in Neuroscience* |
| NEU 492: | Special Topics in Neuroscience* |

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**We’re Here to Serve You!**

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