BACHELOR OF SCIENCE IN NEUROSCIENCE – DEGREE REQUIREMENT CHECKLIST

Based on 2015 – 2016 Undergraduate Catalog

DISCLAIMER: This checklist is provided solely as a tool to illustrate degree requirements and does not supersede or substitute information from the undergraduate catalog. While every effort has been made to ensure the accuracy of the information, it should be noted that changes may occur at any time in the policies, requirements, and course offerings. Please visit the Georgia State University undergraduate catalog website at http://enrollment.gsu.edu/catalogs/ for the most current information.

Area A: Essential Skills (9)
A grade of C or higher is required for ENGL 1101 and 1102

- [ ] ENGL 1101 English Composition I (3)
- [ ] ENGL 1102 English Composition II (3)
- [ ] MATH 1113 Precalculus (or any higher---level mathematics course) (3)

Area B: Institutional Options (4)
Select two courses from the list below:

- [ ] Choose One...
- [ ] Choose One...

  PHIL 1010 Critical Thinking (2)
  SPCH 1000 Human Communications (2)
  PERS 2001 Perspectives on Comparative Culture (2)
  PERS 2002 Scientific Perspectives on Global Problems (2)

Area C: Humanities & Fine Arts (6)
Select one Humanities course and one Fine Arts course from the list below:

- [ ] Humanities Course: (3) Choose One...
- [ ] Fine Arts Course: (3) Choose One...

<table>
<thead>
<tr>
<th>Humanities</th>
<th>Fine Arts</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 2110 World Literature (3)</td>
<td>AH 1700 Survey of Art I (3)</td>
</tr>
<tr>
<td>ENGL 2120 British Literature (3)</td>
<td>AH 1750 Survey of Art II (3)</td>
</tr>
<tr>
<td>ENGL 2130 American Literature (3)</td>
<td>FILM 2700 History of the Motion Picture (3)</td>
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<tr>
<td>PHIL 2010 Introduction to Philosophy (3)</td>
<td>MuA1500 Jazz: Its Origins, Styles, and Influence (3)</td>
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<tr>
<td>RELS 2001 Introduction to World Religions (3)</td>
<td>MuA1900 Dramatic Music from the Renaissance (3)</td>
</tr>
<tr>
<td>SPCH 2050 Media, Culture, and Society (3)</td>
<td>MuA1930 Music, Society, and Culture (3)</td>
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<td></td>
<td>THEA 2040 Introduction to Theatre (3)</td>
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</tbody>
</table>
**Area D: Natural and Computational Sciences (12)**

Select one two-course sequence:

- [ ] Choose One...
- [ ] Choose One...

- GEOL 1121K Introductory Geosciences I (4) and GEOL 1122K Introductory Geosciences II (4)
- PHYS 1111K Introductory Physics I (4) and PHYS 1112K Introductory Physics II (4)
- PHYS 2211K Principles of Physics I (4) and PHYS 2212K Principles of Physics II (4)

**Area D: Math Requirement:**

Any one math course not taken in Area A from the following choices:

- [ ] Choose One...

  **Mathematics**

  - MATH 2201 Calc for the Life Sciences I (4)
  - MATH 2202 Calc for the Life Sciences II (4)
  - MATH 2211 Calculus of One Variable I (4)
  - MATH 2212 Calculus of One Variable II (4)

**Area E: Social Sciences (12)**

A maximum of six hours from any one department

- [ ] HIST 2110 Survey of United States History (3)
- [ ] POLS 1101 American Government (3)
- [ ] Select one course from the list below: (3) Choose One...

  - ECON 2100 The Global Economy (3)
  - HIST 1111 Survey of World History to 1500 (3)
  - HIST 1112 Survey of World History since 1500 (3)
  - POLS 2401 Global Issues (3)

- [ ] Select one course from the list below: (3) Choose One...

  - AAS 2010 Introduction to African—American Studies (3)
  - ANTH 1102 Introduction to Anthropology (3)
  - CRJU 2200 Social Science and the American Crime Problem (3)
  - ECON 2105 Principles of Macroeconomics (3)
  - ECON 2106 Principles of Microeconomics (3)
  - GEOG 1101 Introduction to Human Geography (3)
  - AAS/HIST 1140 African and African—American History (3)
  - PSYC 1101 Introduction to General Psychology (3)
  - SOCI 1101 Introductory Sociology (3)
  - SOCI 1160 Introduction to Social Problems (3)
  - WST 2010 Introduction to Women's Studies (3)
Area F: Courses Appropriate to the Major Field (18)
Required Courses (16 hours)

☐ BIOL 2107K Principles of Biology (4)
☐ BIOL 2108K Principles of Biology (4)
☐ CHEM 1211K Principles of Chemistry I (4)
☐ CHEM 1212K Principles of Chemistry II (4)

Area F: Recommended Course to complete Area F

☐ Select one course from the list below: Choose One...

- ANTH 2010 Introduction to Biological Anthropology (3)
- BIOL 2240 Human Physiology (3)
- BIOL 2800 Introduction to Molecular Biology (2)
- CHEM 2010 Introduction to Quantitative Analysis (2)
- CHEM 2400 Organic Chemistry I (4)
- **NEUR 2000 Introduction to Neuroscience** (2)
- PHIL 2010 Introduction to Philosophy (3)
- PSYC 1100 Natural Aspects of Psychology (3)
- PSYC 2050 Introduction to Drugs and Behavior (3)
- PSYC 2080 Sex, Evolution, and Human Behavior (3)
**Area G: Major Courses (36)**

A grade of C or higher is required for all Area G courses

<table>
<thead>
<tr>
<th>Neuroscience Core Requirements (12 hours)</th>
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<tbody>
<tr>
<td>NEUR 3000 Principles of Neuroscience (4)</td>
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<tr>
<td>NEUR 3010 Neuroscience Laboratory (4)</td>
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<tr>
<td>NEUR 3020 The Scientific Method in Neuroscience (4) (CTW)</td>
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<table>
<thead>
<tr>
<th>Neuroscience Electives (at least 12 hours from the following list of courses)</th>
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<tbody>
<tr>
<td>Choose One...</td>
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<td>Choose One...</td>
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<td>Choose One...</td>
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<tr>
<td>NEUR 4010 – Cell &amp; Molecular Neuroscience (4)</td>
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<td>NEUR 4020 – Cognitive Neuroscience</td>
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<td>NEUR 4030 – Computational Neuroscience</td>
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<td>NEUR 4040 – Neuroethology</td>
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<td>NEUR 4050 – Statistics for Neuroscience</td>
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<td>NEUR 4100 – Developmental Neurobiology</td>
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<td>NEUR 4115 – Medical Neuroanatomy</td>
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<td>NEUR 4150 – Drugs &amp; the Nervous System</td>
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<td>NEUR 4200 – Neuroscience of Memory</td>
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<tr>
<td>NEUR 4340 – Neurophysics</td>
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<tr>
<td>NEUR 4350 – Numerical Methods for Neuroscience (3)</td>
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<tr>
<td>NEUR 4360 – Mathematical Biology</td>
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<tr>
<td>NEUR 4370 – Applied Dynamical Systems</td>
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<td>NEUR 4420 – Hormones &amp; Behavior</td>
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<td>NEUR 4576 – Neurovirology</td>
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<td>NEUR 4610 – Neurorobotics</td>
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<td>NEUR 4700 – Neural Plasticity</td>
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<td>NEUR 4770 – Moral Psychology</td>
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<td>NEUR 4780 – Neuroethics</td>
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<tr>
<td>NEUR 4910 – Topics in Neuroscience</td>
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<tr>
<td>NEUR 4960 – Careers in Neuroscience</td>
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<tr>
<td>BIOL 4130/PSYCH 4130 – Sensation &amp; Perception (3)</td>
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</table>
Neuroscience-related Electives (at least 12 hours from the following list of courses, or from the list of Neuroscience Electives above, if the course is not being used to fulfill the Neuroscience Electives requirement). Other Neuroscience-related courses not on this list may fulfill this election requirement with permission of the Director of Undergraduate Studies.

- Choose One...
- Choose One...
- Choose One...
- Choose One...

- ANTH 4300 Human Evolution (3)
- BIOL 3440 Fundamentals of Evolution (3)
- BIOL 3800 Molecular Cell Biology (3)
- BIOL 3810 Molecular Cell Biology Lab (3)
- BIOL 3840 Animal Biology (3)
- BIOL 3850 Animal Biology Lab (1)
- BIOL 3900 Genetics (3)
- BIOL 3910 Genetics Lab (1)
- BIOL 4014K Invertebrate Biology (4)
- BIOL 4015K Vertebrate Biology (4)
- BIOL 4045K General Ecology (4)
- BIOL 4074 Developmental Biology (4)
- BIOL 4240 Endocrinology (4)
- BIOL 4242 Circadian Rhythms (4)
- BIOL 4246 Advanced Human Physiology (4)
- BIOL 4248 Cell Physiology (4)
- BIOL 4630 Enzymology (3)
- BIOL 4744 Biostatistics (3)
- BIOL 4800 Principles of Cell Biology (4)
- MATH 3260 Differential Equations (3)
- MATH 4275 Applied Dynamical Systems (3)
- MATH 4435 Linear Algebra (3)
- NEUR 4870 Honor Thesis: Research (3 to 6)
- NEUR 4880 Honors Thesis: Writing (3)
- NEUR 4980 Undergraduate Research in Neuroscience (Up to 5 hours may be applied to graduation requirement)
- PHIL 4130 Philosophy of Science (3)
- PHIL 4330 Philosophy of Mind (3)
- PHIL 4340 Philosophy of Cognitive Science (3)
- PHYS 3500 Electronics (3)
- PHYS 4710 Functional Neuroimaging (3)
- PSYC 3140 Abnormal Psychology (3)
- PSYC 4100 Cognitive Psychology (3)
- PSYC 4116 Primate Behavior (3)
- PSYC 4120 Learning (3)
- PSYC 4140 Introduction to Psychophysiology (4)
- PSYC 4560 Psychology of Animal Behavior (3)
- PSYC 4660 Applied Animal Behavior (3)
Pre-Medicine Concentration
A Pre-Medicine concentration is available for B.S. in Neuroscience majors

Pre-Medicine Students are also required to take:

- CHEM 2400 Organic Chemistry I (4)
- CHEM 3410 Organic Chemistry II (4)
- CHEM 3100 Organic Chemistry Laboratory I (2)
- CHEM 3110 Organic Chemistry Laboratory II (2)
- CHEM 4600 Biochemistry (5)

Minor in Neuroscience
Students who wish to minor in Neuroscience must take NEUR 3000 – Principles in Neuroscience and at least 12 additional hours in Neuroscience courses (any course with the NEUR prefix). A grade of C or higher is required in all courses counting towards the minor.

Area H: Minor and Additional Courses (2)
Students are encouraged, but not required to take a minor. However, students majoring in Neuroscience must take additional courses as electives to complete 120 hours. All Neuroscience majors are encouraged to choose electives from the lists above.

Academic Residence Requirement

In order to graduate, students must complete the 39 credit hour Academic Residency Requirement.

- The student must earn 39 semester hours at Georgia State in courses numbered 3000 or above with an average grade of at least a C (2.00 GPA); and
- At least one-half of the hours comprising the major must be taken at Georgia State University.