**Neuroscience (BS)**  
**(Cognitive Neuroscience Concentration)**

**Major** Academic Director:  [Lori Holt](mailto:loriholt@cmu.edu); Undergraduate Coordinator:  [Emilie O'Leary](mailto:emilieoleary@cmu.edu) (BH 339)

Neuroscience is an interdisciplinary field in which scientists from many backgrounds apply the tools of biology, cognitive science, psychology, chemistry, mathematics, statistics, computer science, and engineering to develop a comprehensive understanding of brain function at the level of molecules, neurons, brain circuits, cognitive brain modules, and behavior.

The goal of this interdisciplinary program between the Dietrich College and the Mellon College of Science is to provide an intensive interdisciplinary education to enable outstanding students to become leaders in identifying and solving tomorrow's Neuroscience problems using a variety of methods. There are three concentration areas: Neurobiology; Cognitive Neuroscience; Computation Neuroscience. Students may complete only one concentration.

This is a suggested 4-year schedule for a Primary Major.

### Suggested Plan for Neuroscience with Cognitive Neuroscience concentration:

<table>
<thead>
<tr>
<th>1st semester</th>
<th>2nd semester</th>
<th>3rd semester</th>
<th>4th semester</th>
</tr>
</thead>
</table>
| • Complete 2: 76-101, Interpretation & Argument  
79-104, Global Histories  
Freshman Seminar  
99-101 or 99-102, C@CM  
85-102, Introduction to Psychology  
21-120, Diff. & Integral Calculus*  
09-105, Intro to Modern Chem. I** | • Complete 1: 76-101, Interpretation & Argument  
79-104, Global Histories  
Freshman Seminar  
36-201 or 36-200 - Statistics***  
21-122, Int., Diff., Equ., & Approx.  
09-106, Modern Chemistry II  
03-121 Modern Biology | • 36-309, Exp. Des. for Beh. & S. S.  
33-111, Physics I for Sci Students  
03-220, Genetics  
85-219, Biological Fnds. of Beh.  
GenEd+ | • 33-122, Physics II for Bio. & Chem  
85-XXX, Cog. Neuro. Elective++  
85-211, Cognitive Psychology  
GenEd+ |

*If required to start with 21-111, complete 21-112, then 21-122.  
**It is essential to start with the chemistry course, 09-105, in the first semester  
***Suggested alternative statistics course for this major: 36-247, Statistics for Lab Sciences (prereq: 21-120).  
+Elective: This space can be used for a pre-requisite course, another **GenEd** course, major course, or for a course you are interested in.  
++Samples of Cognitive Neuroscience Electives  
+++Recommended Neuroscience Electives

<table>
<thead>
<tr>
<th>5th semester</th>
<th>6th semester</th>
<th>7th semester</th>
<th>8th semester</th>
</tr>
</thead>
</table>
03-124, Modern Bio Lab.  
03-362, Cellular Neuroscience  
15-110 Principles of Computing  
GenEd** | • 85-419, Intro Parallel Dist. Process  
03-363, Systems Neuroscience  
Neuroscience Elective +++  
GenEd** | • xx-3xx, Neurosci Elective +++  
xx-xxx, Elective**  
xx-xxx, Elective**  
xx-xxx, Elective**  
xx-xxx, Elective** | • 85-3xx, Cog. Neurosci Elective++  
xx-xxx, Elective**  
xx-xxx, Elective**  
xx-xxx, Elective**  
xx-xxx, Elective** |

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Carnegie Mellon University  
Dietrich College of Humanities and Social Sciences
### BS in Neuroscience with Cognitive Neuroscience concentration Requirements

<table>
<thead>
<tr>
<th>General Education Program (GenEd)</th>
<th>Biological Science Courses for the Major</th>
<th>Calculus, Statistics, &amp; Computer Science Courses for the Major</th>
<th>Chemistry &amp; Physics Courses for the Major</th>
<th>Psychology Courses for the Major</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communicating 76-101 Interpretation &amp; Argument</td>
<td>see Modeling: Natural Sciences 03-121</td>
<td>see Modeling: Mathematical Sciences 21-120</td>
<td>see Addtnl GenEd 09-105</td>
<td>see Deciding 85-102</td>
</tr>
<tr>
<td>Reflecting 79-104 Global Histories</td>
<td>Modern Biology Lab 03-124</td>
<td>see Modeling: Other 21-122</td>
<td>see Addtnl GenEd 09-106</td>
<td>Introduction to Parallel Distributed Processing 85-419</td>
</tr>
<tr>
<td>Deciding 36-201 or 36-200 Statistics</td>
<td>Deciding 85-102 Introduction to Psychology</td>
<td>Genetics 03-330</td>
<td>Physics I for Science Students 33-111</td>
<td>Cognitive Psychology 85-211</td>
</tr>
<tr>
<td>Creating 9 units</td>
<td>Creating 9 units</td>
<td>Experimental Design for Behavioral and Social Sciences 36-309</td>
<td>Physics II for Science Students 33-112</td>
<td>Research Methods in Cognitive Psychology 85-310</td>
</tr>
<tr>
<td>Freshman Seminar 9 units</td>
<td>Computing @ Carnegie Mellon 99-101 or 99-102 3 units</td>
<td></td>
<td></td>
<td>Cognitive Neuroscience Elective 85-xxx 9 units</td>
</tr>
</tbody>
</table>

General Education Program requirements (GenEd) in the Major are **highlighted**.