Neuroscience (BS)  
(Cognitive Neuroscience Concentration)

Major Academic Director: Lori Holt (email: loriholt@cmu.edu); Undergraduate Coordinator: Emilie O’Leary (BH 343)

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 schedule for the 4 years for a Primary Major.

Suggested Plan for Neuroscience with Cognitive Neuroscience concentration:

<table>
<thead>
<tr>
<th>1st semester (50 units)</th>
<th>2nd semester (47 units)</th>
<th>3rd semester (48 units)</th>
<th>4th semester (49 units)</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  
• 36-247, Statistics for Lab Science  
• 21-122, Int., Diff., Equ., & Approx.  
• 09-106, Modern Chemistry II  
• GenEd** | • 85-211, Cognitive Psychology  
• 36-309, Exp. Des. for Beh. & S. S.  
• 33-111, Physics I for Sci Students  
• 03-121, Modern Biology  
• 85-219, Biological Fnds. of Beh. | • 15-110, Principles of Computing  
• 33-112, Physics II for Sci Students  
• 03-124, Modern Biology Lab  
• GenEd**  
• GenEd** |

*If required to start with 21-111, complete 21-112, then 21-122.  
**Elective: This space can be used for a pre-requisite course, another GenEd course, major course, or for a course you are interested in.  
***Suggested substitution for the GenEd requirement 36-201 is: 36-247, Statistics for Lab Sciences (prereq: 21-120).  
+It is essential to start with the chemistry course, 09-105, in the first semester

<table>
<thead>
<tr>
<th>5th semester (45 units)</th>
<th>6th semester (45 units)</th>
<th>7th semester (45 units)</th>
<th>8th semester (45 units)</th>
</tr>
</thead>
</table>
• 85-xxx, Cognitive Neurosci Elect.  
• 03-362, Cellular Neuroscience  
• GenEd**  
• xx-xxx, Elective** | • 85-419, Intro Parallel Dist. Process  
• 03-330, Genetics  
• 03-363, Systems Neuroscience  
• GenEd** | • 85-xxx, Cognitive Neurosci Elect  
• xx-xxx, Elective**  
• xx-xxx, Elective**  
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• xx-xxx, Elective**  
| • 85-xxx, Cognitive Neurosci Elect  
• xx-xxx, Elective**  
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• xx-xxx, Elective**  
• xx-xxx, Elective**  

See reverse side for listing of all requirements and double-counting allowed with the GenEd.

Academic Advisory Center (6/3/2015)
### General Education Program (GenEd) Requirements

<table>
<thead>
<tr>
<th>Communicating</th>
<th>Communicating</th>
<th>see Modeling: Natural Sciences 03-121</th>
</tr>
</thead>
<tbody>
<tr>
<td>76-101</td>
<td>Interpretation &amp; Argument</td>
<td>9 units</td>
</tr>
<tr>
<td>Reflecting</td>
<td>Reflecting</td>
<td>Modern Biology Lab 03-124</td>
</tr>
<tr>
<td>79-104</td>
<td>Global Histories</td>
<td>9 units</td>
</tr>
<tr>
<td>Modeling: Math. Sciences</td>
<td>Modeling: Natural Science 03-121</td>
<td>see Modeling: Mathematical Sciences 21-120</td>
</tr>
<tr>
<td>21-120</td>
<td>Differential and Integral Calculus</td>
<td>9 units</td>
</tr>
<tr>
<td>Deciding</td>
<td>Deciding</td>
<td>see Deciding 85-102</td>
</tr>
<tr>
<td>36-247</td>
<td>Statistical Reasoning</td>
<td>9 units</td>
</tr>
<tr>
<td>Creating</td>
<td>Creating</td>
<td>see Deciding 85-102</td>
</tr>
<tr>
<td>9 units</td>
<td>9 units</td>
<td>9 units</td>
</tr>
<tr>
<td>Addtnl GenEd</td>
<td>Addtnl GenEd</td>
<td>see Deciding 85-102</td>
</tr>
<tr>
<td>09-105</td>
<td>Introduction to Modern Chemistry I</td>
<td>9 units</td>
</tr>
<tr>
<td>Freshman Seminar</td>
<td>Computing @ Carnegie Mellon</td>
<td>see Deciding 85-102</td>
</tr>
<tr>
<td>99-101 or 99-102</td>
<td>3 units</td>
<td>9 units</td>
</tr>
</tbody>
</table>

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