# Course Worksheet for Neuroscience Concentration

## REQUIRED BASIC SCIENCE COURSES (6):

- CH 101 ____  
  (or CH 109)  
- MA 123 ____  
  (or MA 121)  
- PS 211 ____  
  (or MA 115/116 or MA 213/214)

## CAS REQUIREMENTS (10):

- WR 100 ____  
- Language 1 ____  
- Language 3 ____  

## NEUROSCIENCE CORE COURSES (4):

### Fall
- NE 201/BI 325 ____
- NE 445* ____
- NE 520 ____
- BI 599 ____

### Spring
- NE 202 ____
- NE 545 ____
- NE 554 ____
- NE 322* ____

## Divisional Courses

- HU 1 ____  
- SS 1 ____  
- SS 2 ____

## REQUIRED ELECTIVES (8):

### Group 1

#### Fall
- NE 230 ____
- NE 444 ____
- NE 445 ____
- NE 445* ____
- NE 481 ____
- NE 520 ____
- BI 599 ____

#### Spring
- NE 204 ____
- NE 322* ____
- NE 545 ____
- NE 554 ____

### Group 2

#### Fall
- PS 222* ____
- NE 338 ____
- NE 528 ____
- NE 529 ____
- NE 544 ____

#### Spring
- NE 234* ____
- NE 323* ____
- NE 333* ____
- NE 337 ____

### Group 3

#### Fall
- NE 360* ____
- MA 565* ____
- CS 565 ____
- MA 421** ____
- CN 500* ____
- NE 520 ____

#### Spring
- NE 340* ____
- NE 530 ____
- MA 578 ____
- CS 542 ____
- CN 510 ____
- CN 530-580 ____
- BI 502 ____

* Lab Course  
** Summer Term 1  
# Offered either semester

1. One of the eight Required Electives must contain a laboratory component.  
2. Breadth Requirement: One of the eight required electives must come from a second group.  
3. Up to three electives may come from the Restricted list (which will not satisfy Breadth Requirement).  
4. Up to two consecutive semesters of research (during Junior or Senior year) will satisfy upper lab course requirement; therefore only seven electives will be required.

## Restricted

- BI 203 ____  
- MA 226* ____  
- MA 242* ____  
- MA 416 ____  
- BI 315* ____  
- CS 111* ____  
- CS 112* ____  
- PY 105 ____  
- PY 106 ____  
- ENG EK 127 ____

*(or equivalent)  
**(or equivalent)

## RESEARCH:

- Directed Study (2 semesters)  
  - NE 391 ____  
  - NE 392 ____  
  - NE 491 ____  
  - NE 492 ____  
  - NE 401/402 ____

- Senior Work for Distinction (2 semesters)  
  - NE 401/402 ____

- Research Seminar (Fall semester only)  
  - NE 495 ____

3/2012
## PROPOSED COURSE OF STUDY

### Biology
- BI 203 Cell Biology
- BI 315 Systems Physiology
- NE 444 Neuroethology
- NE 445* Cellular and Molecular Neurophysiology
- NE 455 Developmental Neurobiology
- BI 502 Mathematical Structure in Biological Systems
- NE 545 Neurobiology of Motivated Behavior
- NE 481 Molecular Biology of the Neuron
- NE 520 Sensory Neurobiology
- NE 554 Neuroendocrinology
- BI 599 Neurobiology of Synapses

### Chemistry
- CH 101 General Chemistry I
- CH 102 General Chemistry II
- CH 203 Organic Chemistry I

### Computer Science
- CS 111 Intro to Computer Science I
- CS 112 Intro to Computer Science II
- CS 542 Machine Learning
- CS 565 Data Mining

### Cognitive and Neural Systems
- NE 330* Intro to Comp Models of Vision
- NE 340* Intro to Comp Models of Skilled Action
- NE 350* Intro to Comp Models of Perceptual Memory
- NE 360* Intro to Comp Models of Hearing
- CN 500* Techniques in Modeling CN 510/520 Principles & Methods of Cognition & Neural Models I/II
- CN 530-570 Comp Models of Vision/Movement/Memory/Speech
- CN 580 Introduction to Computational Modeling

### Mathematics and Statistics
- MA 115/116 Statistics I/II
- MA 213/214 Basic Stats and Probability / Applied Stats
- MA 242 Linear Algebra
- MA 226 Differential Equations
- MA 416 Intermediate Stats
- MA 421 Modern Stat Modeling and Data Analysis
- MA 565 Math Models in Life Sciences
- MA 578 Bayesian Stats

### Psychology
- PS 211 Statistics
- PS 222 Perception
- NE 234 Psychology of Learning
- NE 322* Experimental Psych: Physiology
- NE 323* Experimental Psych: Learning
- NE 333 Drugs and Behavior
- NE 337 Memory Systems
- NE 338 Neuropsychology
- NE 528 Brain Mapping
- NE 529 Neuroplasticity
- NE 530 Neural Models of Memory
- NE 544 Developmental Neuropsychology

### Physics Equivalents
- PY 105/106 Elementary Physics I/II
- or PY 211/212 General Physics I/II
- or PY 241/242 Principles of General Physics I/II
- or PY 251/252 Principles of Physics I/II

### PROPOSED COURSE OF STUDY

<table>
<thead>
<tr>
<th>Fall</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Year</td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>1.</td>
</tr>
<tr>
<td>2.</td>
<td>2.</td>
</tr>
<tr>
<td>3.</td>
<td>3.</td>
</tr>
<tr>
<td>4.</td>
<td>4.</td>
</tr>
</tbody>
</table>

| Second Year           |                             |
| 1.                    | 1.                          |
| 2.                    | 2.                          |
| 3.                    | 3.                          |
| 4.                    | 4.                          |

| Third Year            |                             |
| 1.                    | 1.                          |
| 2.                    | 2.                          |
| 3.                    | 3.                          |
| 4.                    | 4.                          |

| Fourth Year           |                             |
| 1.                    | 1.                          |
| 2.                    | 2.                          |
| 3.                    | 3.                          |
| 4.                    | 4.                          |

1. 32 Courses (128 credits) required to graduate.
2. 17 courses for the Neuroscience Major.
3. Five free electives.

* Laboratory Course

NB: A grade of ‘C’ or higher is required for all courses taken for credit toward Neuroscience major.

For more information see Dr. Paul Lipton, Associate Director, Rm 114, 2 Cummingston Street (palipton@bu.edu; 617-358-5150), or Lindsey Clarkson, Program Administrator, 109, 2 Cummingston Street (lclarkso@bu.edu)