# Course Worksheet for Neuroscience Concentration

## REQUIRED BASIC SCIENCE COURSES (7):
- CH 101 _____
- CH 102 _____
- (or CH 109)
- PY 105 _____
- PY 106 _____
- (or equivalent)
- MA 123 _____
- (or equivalent)
- MA 124 _____
- (or MA 121)
- PS 211 _____
- (or MA 115/116)
- or MA 213/214

## CAS REQUIREMENTS (10):
- WR 100 ______
- WR 150 ______
- Language 1 ____
- Language 2 ____
- Language 3 ____
- Language 4 ____

## NEUROSCIENCE CORE COURSES (5):

<table>
<thead>
<tr>
<th>Fall</th>
<th>Spring</th>
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<tbody>
<tr>
<td>NE 101</td>
<td>NE 102*</td>
</tr>
<tr>
<td>NE 203*</td>
<td>NE 202</td>
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<td>NE 204</td>
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## REQUIRED ELECTIVES (5):

### Group 1

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<thead>
<tr>
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<tbody>
<tr>
<td>NE 230</td>
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<tr>
<td>NE 444</td>
<td>NE 322*</td>
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<tr>
<td>NE 455</td>
<td>NE 545</td>
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<tr>
<td>NE 445*</td>
<td>NE 554</td>
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<tr>
<td>NE 481</td>
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<td>NE 520</td>
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<td>NE 599</td>
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### Group 2

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<tbody>
<tr>
<td>PS 222#</td>
<td>NE234#</td>
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<tr>
<td>NE 338</td>
<td>NE 323*#</td>
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<tr>
<td>NE 528</td>
<td>NE 333#</td>
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<tr>
<td>NE 529</td>
<td>NE 337</td>
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<td>NE 544</td>
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### Group 3

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<th>Fall</th>
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<tr>
<td>NE 360*/HS 361*</td>
<td>NE 3X0*</td>
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<tr>
<td>MA 565*</td>
<td>NE 530</td>
</tr>
<tr>
<td>CS 565</td>
<td>MA 578</td>
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<tr>
<td>MA 421*</td>
<td>CS 542</td>
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<tr>
<td>CN 500*</td>
<td>CN 510</td>
</tr>
<tr>
<td>CN 520</td>
<td>CN 530-580</td>
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<tr>
<td></td>
<td>BI 502</td>
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## Restricted

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

1. Breadth Requirement: One of the five required electives must come from a second group.
2. Up to two electives may come from the Restricted list (which will not satisfy Breadth Requirement).

## Lab Requirement:
3. Successful completion of NE102 and NE203 -OR-
4. One of the five Required Electives with laboratory component. -OR-
5. Up to two consecutive semesters of research (during Junior or Senior year); in this instance only four electives will be required.

## RESEARCH:
- Directed Study (2 semesters)
  - NE 391 ______
  - NE 392 ______
  - NE 491 ______
  - NE 492 ______

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

-and-
- Research Seminar (Fall semester only)
  - NE 495 ______
**Neuroscience**
- NE 101 Introduction to Neuroscience
- NE 102* Intro to Cell and Molecular Biology with Lab
- NE 202 Intro to Cognitive Neuroscience
- NE 203* Principles of Neuroscience with Lab
- NE 204* Intro to Computational Models of Brain & Behavior

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

**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

**Biology**
- BI 203 Cell Biology
- BI 315 Systems Physiology
- BI 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 554 Neuroendocrinology
- BI 599 Neurobiology of Synapses

**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

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

**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**

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<thead>
<tr>
<th></th>
<th>Fall</th>
<th>Spring</th>
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<tbody>
<tr>
<td></td>
<td>First Year</td>
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<tr>
<td></td>
<td>1. 32 Courses (128 credits) required to graduate.</td>
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<tr>
<td></td>
<td>2. 17 courses for the Neuroscience Major.</td>
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<tr>
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<td>3. Five free electives.</td>
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* 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 Cummington Street (palipton@bu.edu; 617-358-5150), or Lindsey Clarkson, Program Administrator, 109, 2 Cummington Street (lclarkso@bu.edu)