Course Worksheet for Neuroscience Concentration

REQUIRED BASIC SCIENCE COURSES (7):

CH 101 _____                 CH 102 _____
(or CH 109)       (or CH 110)
PY 105 _____                 PY 106 _____
(or equivalent)        (or equivalent)
MA 123 _____                 MA 124 _____
(or MA 121)        (or MA 122)
PS 211 _____
(or MA 115/116
or MA 213/214)

NEUROSCIENCE CORE COURSES (5):

Fall       Spring
NE 101        NE 102*_____    NE 203*_____       NE 202_____       NE 204*_____    
NE 203*_____       NE 202_____       NE 204*_____        

REQUIRED ELECTIVES (5):

Group 1

Fall       Spring
NE 230_____        NE 322*_____     NE 444#*_____     NE 545_____        
NE 455_____        NE 554_____        NE 481_____     NE 445*_____        
NE 520_____        BI 599_____        NE 525#_____        

Group 2

Fall       Spring
NE 337_____        NE 234#_____     NE 338_____     NE 323#*_____     
NE 528_____        NE 333#_____        NE 529_____     PS 222#_____        
NE 544_____        

Group 3

Fall       Spring
SAR HS361/NE 360*____       NE 340*_____     MA 565#_____       NE 530_____        
MA 565#_____       NE 530_____        CS 565_____       MA 578_____        
MA 421**_____       CS 542_____        CN 500*_____       CN 510_____        
NE 520_____       CN 530-580_____       BI 502_____        

CAS REQUIREMENTS* (10):

WR 100______     WR 150______     Language 1_____     Language 2_____     
Language 3_____     Language 4_____     

Divisional Courses
HU 1_____       HU 2_____       SS 1_____       SS 2_____       

Restricted

Fall       Spring
BI 203_____        MA 226#_____     CH 203_____     MA 242#_____     
MA 416_____        BI 315#_____        CS 111#_____     CS 112#_____     
(or equivalent)  (or equivalent)        
ENG EK 127#_____        CS108#_____        

*see CAS website for all degree policies and requirements

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).
3. Only 1 of the NE337 and NE338 electives may count toward your total
4. A total of 128 CAS credits are required for graduation

Research Requirement:
4. Successful completion of NE102 and NE203
-OR-
5. One of the five Required Electives with laboratory component.
-OR-
6. 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______

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

12/2013
**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 525 Biology of Neurodegenerative Diseases
- 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
- CS 108 Python

**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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| **Second Year** |  |
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| **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.

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