# Bachelor of Arts in Neuroscience

## Course worksheet for Neuroscience majors entering BU as freshmen in or after Fall 2018

###-General Requirements-
- 17 courses with 'C' or higher required for credit towards Neuroscience major.
- 128 credits (excluding PDP, ROTC, FY, and SY) and successful completion of BU Hub units required to graduate from BU.
- 4th semester of foreign language proficiency required to graduate from CAS.

### CORE NEUROSCIENCE (5 courses)

**Fall Semester**
- NE 101++ Introduction to Neuroscience
- NE 203* Principles of Neuroscience

**Spring Semester**
- NE 102* Introduction to Cell & Molecular Biology
- NE 202 Introduction to Cognitive Neuroscience
- NE 204* Intro. to Comp. Models of Brain and Behavior

### RESEARCH REQUIREMENT
- Completion of NE 102 and NE 203
- One upper-level lab course not from Restricted List
- Two consecutive semesters of research for credit totaling 8 credits during Junior or Senior year

### CHEMISTRY (2 courses) Choose one sequence
- CH 101
- CH 102
- CH 110
- CH 112

### PHYSICS (2 courses) Choose one sequence
- PY 105
- PY 106
- PY 211
- PY 212
- PY 241
- PY 242

### CALCULUS (2 courses) Choose one sequence
- MA 121
- MA 122
- MA 123
- MA 124
- AP Calculus BC

### STATISTICS (1 course) Choose one sequence
- MA 212
- MA 115
- MA 116
- MA 213
- MA 214

### ELECTIVE REQUIREMENTS
- Students must complete at least 5 electives across all groups.
- A maximum of 2 electives may come from the Restricted List.
- All 5 electives may not be from the same group. Restricted electives do not count towards this requirement.
- Students may not count both NE 337 and NE 338 towards their electives.
- Two consecutive semesters of research for credit totaling 8 credits during Junior or Senior year counts as one elective.

### GROUP 1: Cellular & Molecular

**Fall Semester**
- NE 230 Behavioral Endocrinology
- NE 455 Developmental Neurobiology
- NE 520 Sensory Neurobiology
- NE 525+ Neurodegenerative Diseases
- NE 535 Translational Research in Alzheimer's disease

**Spring Semester**
- NE 545 Neurobiology of Motivated Behavior
- NE 598 Neural Circuits
- MET BI 566* Neurobiology Of Consciousness
- NE 322* Exp. Psych: Psychology
- NE 445* Neuropsychology
- NE 481 Molecular Neurobiology

### GROUP 2: Cognitive

**Fall Semester**
- NE 234++ Psych of Learning
- NE 327* Exp Psych: Perception
- NE 328* Exp Psych: Memory
- NE 333++ Drugs & Behavior
- NE 337 Memory Systems
- NE 338 Neuropsychology

**Spring Semester**
- NE 323* Exp. Psych: Learning
- NE 499 Clinical Neuroanatomy
- NE 521 Animal Models in Behavioral Neurobiology
- NE 528 Human Brain Mapping
- NE 529 Neuroplasticity
- NE 544 Developmental Neuropsychology

### GROUP 3: Computational

**Fall Semester**
- NE 449* Neuroscience Design Lab
- MA 421* Stat Modeling & Data Analysis
- CN 500+ Techniques in Modeling
- CN 520 Cognition & Neural Models II

**Spring Semester**
- NE 340* Comp Models of Skilled Action
- NE 526 Neural Control of Movement
- NE 530 Neural Models of Memory
- MA 578 Bayesian Statistics
- CN 510 Cognition & Neural Models I
- CS 542 Machine Learning
- CS 565 Data Mining

### Restricted Electives
- BI 203 Cell Biology
- CH 203* Organic Chemistry I
- BI 315+ Systems Physiology
- CS 111++ Intro. to CS I
- MA 416 Analysis of Variance

**Spring Semester**
- ENG EC 127 Intro to Engineering Computation
- MA 226+ Differential Equations
- MA 242 Linear Algebra
- CS 112+ Intro. to CS II

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For more information, contact Becca Reynolds (rreyn@bu.edu) / 2 Cummington, Room 212.

Key: *Lab Course, +Offered Summer Term, ++Offered Either Semester

bu.edu/neuro
**BU HUB REQUIREMENTS**
- Students must complete 1-2 units in each Hub area as indicated below.
- One 4 credit course may satisfy between 0 and 4 Hub areas.
- Possible courses to satisfy each Hub area are listed below. For a full list, visit bu.edu/hub
- SO1, SI1, and QR1 can be fulfilled by taking two courses towards SO2, SI2, and QR2, respectively.

### PHILosophical, Aesthetic, & Historical Interpretation
- **Philosophical Inquiry & Life’s Meanings (PLM, 1 unit)**
  - CL 101
  - RN 100
  - CC 202
  - ______
- **Aesthetic Exploration (AEX, 1 unit)**
  - AH 111
  - CC 101
  - RN 101
  - ______
- **Historical Consciousness (HCO, 1 unit)**
  - CC 211
  - AR 100
  - CL 101
  - ______

### DIVERSITY, Civic Engagement, & Global Citizenship
- **The Individual in Community (IIC, 1 unit)**
  - LX 110
  - PH 256
  - SO 253
  - ______
- **Global Citizenship & Intercultural Literacy (GCI, 2 units)**
  - AN 101
  - CC 101
  - CC 112
  - ______
  - Ethical Reasoning (ETR, 1 unit)
  - NE 102
  - NE 203
  - CC 202
  - ______

### Scientific & Social Inquiry
- **Social Inquiry I (SO1, 1 unit)**
  - CC 112
  - SO 100
  - PS 101
  - ______
- **Scientific Inquiry I (SI1, 1 unit)**
  - CH 101
  - NE 101
  - PY 105
  - ______
- **Scientific or Social Inquiry II (SO2, SI2, 1 unit)**
  - NE 102
  - PY 106
  - CC 211
  - ______

### Pre-Med Requirements
- AP courses do not satisfy any pre-med requirements with the exception of AP Calculus AB/BC.
- BI 108 is not required for neuroscience majors

- One year of biology with lab (NE 102 & BI 315 for neuroscience majors)
- One semester of Calculus
- One semester of Statistics
- One semester of Cell Biology (BI 203)
- One year of Organic Chemistry with lab
- One semester of Biochemistry (CH 373)
- One year of General Chemistry with lab
- One semester of Psychology (PS 101)
- One year of Physics with lab
- One semester of Sociology (SO 100)

### PROPOSED COURSE OF STUDY

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For more information, contact Becca Reynolds (breyn@bu.edu) | 2 Cummington, Room 212.

Key: ‘^’ Satisfied by Neuroscience major requirements, electives, or Pre-med requirements  ‘Core Curriculum courses

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