# Bachelor of Arts in Neuroscience

**Course worksheet for Neuroscience majors transferring in to BU on or after Fall 2020**

## 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+ Intro to Neuroscience
- NE 203 Principles of Neuroscience or NE 218+ ISE II
- NE 203 Intro to Cell & Molecular Biology or NE 116+ ISE I
- NE 202 Intro to Cognitive Neuroscience
- NE 204 Intro to Comp. Models of Brain and Behavior

### Spring Semester
- NE 102 Intro to Neuroscience
- NE 203 Principles of Neuroscience or NE 218+ ISE II
- NE 202 Intro 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

### Directed Study
- NE 391
- NE 392
- NE 491
- NE 492

### Senior Thesis
- NE 401
- NE 402

## ELECTIVE REQUIREMENTS
- ✔️ Students must complete at least 5 electives total from at least 2 groups (Neurobiology, Cognitive and Computational)
- ✔️ A maximum of 2 of the 5 electives may come from the Restricted List.
- ✔️ Two consecutive semesters of research for credit totaling 8 credits during Junior or Senior year counts as one elective.

## GROUP 1: Neurobiology
- NE 230 Behavioral Endocrinology
- NE 322+ Exp. Psych: Physiology
- NE 349 Neurotoxins
- NE 445+ Neurophysiology
- NE 455 Developmental Neurobiology
- NE 481 Molecular Neurobiology
- NE 520 Sensory Neurobiology
- NE 525+ Neurodegenerative Diseases
- NE 535 Translational Research in Alzheimer’s disease
- NE 542 Neuroethology
- NE 545 Neurobiology of Motivated Behavior
- NE 598 Neural Circuits
- MET BI 566+ Neurobiology of Consciousness
- BI 599 Physiology of the Synapse

## GROUP 2: Cognitive
- NE 234+ Psych of Learning
- NE 323+ Exp. Psych: Learning
- NE 327+ Exp. Psych: Perception
- NE 328+ Exp. Psych: Memory
- NE 329+ Exp. Psych: Cog Neuro
- NE 333+ Drugs & Behavior
- NE 337 Memory Systems
- NE 338 Neuropsychology
- NE 499 Clinical Neuroanatomy
- NE 521 Animal Models in Behavioral Neurobiology
- NE 528 Human Brain Mapping
- NE 529 Neurolasticity
- NE 544 Developmental Neuropsychology

## GROUP 3: Computational
- NE 340+ Comp Models of Skilled Action
- NE 449+ Neuroscience Design Lab
- NE 526 Neural Control of Movement
- NE 530 Neural Models of Memory
- MA 421+ Stat Modeling & Data Analysis
- MA 578 Bayesian Statistics
- MA 579 Systems Physiology
- CN 500+ Techniques in Modeling
- CN 510 Cognition & Neural Models I
- CN 520 Cognition & Neural Models II
- CS 542 Machine Learning
- CS 565 Data Mining

## CHEMISTRY* (2 courses)
- Choose one sequence
  - CH 101
  - CH 102 or CH 116
  - 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
  - NE 212
  - MA 115
  - MA 116
  - MA 213
  - MA 214

## CHEMISTRY* (2 courses)
- Choose one sequence
  - CH 101
  - CH 102 or CH 116
  - 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
  - AP Calculus BC

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

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Not all electives are offered every semester or every year. Refer to the Student Link for the most up to date information of what is offered by semester. For more information, contact Becca Reynolds (treyn@bu.edu) | 2 Cummingston, Room 212). | Updated 12/18/19

Key: *Lab Course, †Offered Summer Term, ‡Offered Either Semester

bu.edu/neuro
**BU HUB REQUIREMENTS**

- Students must complete a total of **10 units** in the different areas 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

### PHILosophical, AESThetic, & Historical INterpretation (1 unit) Choose one of the following

- **Philosophical Inquiry & Life’s Meanings (PLM)**
  - CL 101
  - RN 100
  - CC 202

- **Aesthetic Exploration (AEX)**
  - AH 111
  - CC 101
  - RN 101

- **Historical Consciousness (HCO)**
  - CC 211
  - AR 100
  - CL 101

### DIVERSITY, CIVIC ENGAGEMENT, & GLOBAL CITIZENSHIP (1 unit) Choose one of the following

- **The Individual in Community (IIC)**
  - LX 110
  - PH 256
  - SO 100

- **Global Citizenship & Intercultural Literacy (GCI)**
  - AN 101
  - CC 101
  - CC 112

- **Ethical Reasoning (ETR)**
  - NE 102
  - PS 101
  - CC 202

### SCIENTIFIC & SOCIAL INQUIRY (2 units) Choose one from each of the following

- **Social Inquiry I or Social Inquiry II (SO1, SO2)**
  - NE 234
  - SO 100
  - PS 101

- **Scientific Inquiry I or Scientific Inquiry II (SI1, SI2)**
  - CH 101
  - NE 101
  - NE 102

### QUANTITATIVE REASONING (1 unit)

- **Quantitative Reasoning II (QR2)**
  - MA 121
  - MA 115
  - PY 106

### COMMUNICATION (1 unit) Choose one of the following

- **Writing, Research, & Inquiry (WRI)**
  - WR 150 (or equivalent)

- **Writing Intensive Course (WIN)**
  - NE 102
  - NE 203
  - CC 202

### INTELLECTUAL TOOLKIT (4 units) Choose one from each of the following

- **Critical Thinking (CRT)**
  - PY 105
  - PS 101
  - NE 212

- **Research & Information Literacy (RIL)**
  - WR 150, 151, 152
  - NE 203

- **Teamwork/Collaboration (TWC)**
  - NE 102
  - NE 203
  - CC 111

- **Creativity/Innovation (CRI)**
  - EN 170
  - RN 100
  - CS 111

### PRE-MED REQUIREMENTS

- AP courses do not satisfy any pre-med requirements with the exception of AP Calculus AB/BC.

- Neuroscience majors are not required to take BI 107. The Pre-Health office recommends that Neuroscience majors take NE 102 or NE 116 and BI 203 or BI 213 (Cell Biology) and BI 315 (Systems Physiology) to complete the pre-med biology requirement.

- This check list is for guidance only and does not substitute an appointment with the Pre-Professional Advising Office.

- One year of biology with lab (NE 102 or NE 116 & BI 315)
- One semester of Calculus
- One semester of Statistics
- One year of Organic Chemistry with lab
- One semester of Biochemistry (CH 373)
- One semester of Psychology (PS 101 or PS 261)
- One semester of Sociology (SO 100 or SO 215)

### PROPOSED COURSE OF STUDY

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For more information, contact Becca Reynolds (prevm@bu.edu) | 2 Cummingston, Room 212). | Updated 12/18/19

Key: *Satisfied by Neuroscience major requirements, electives, or Pre-med requirements