Bachelor of Arts in Neuroscience

Course worksheet for Neuroscience majors entering BU prior to Fall 2018 or as transfer students

**GENERAL REQUIREMENTS**

- 17 courses with ‘C’ or higher required for credit towards Neuroscience major.
- 128 credits (excluding PDP, ROTC, FY, and SY) units required to graduate from BU.
- 4th semester of foreign language proficiency and completion of Divisional Studies 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
- **Spring Semester**
  - NE 102* 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

**RESEARCH REQUIREMENT** Choose one of the following

- 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

**CHEMISTRY* (2 courses)** Choose one sequence

- CH 101
- CH 102 or CH 116

**PHYSICS* (2 courses)** Choose one sequence

- PY 105
- PY 106

**CALCULUS (2 courses)** Choose one sequence

- MA 121
- MA 122
- AP Calculus BC

**STATISTICS (1 course)** Choose one sequence

- NE 212
- MA 115
- MA 213
- MA 214

**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.
- 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: 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 232* 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 Neuropasticity
- 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 582 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

**Restricted Electives**

- BI 203 Cell Biology
- BI 213 Intensive Cell Biology
- BI 315* Systems Physiology
- CH 203* Organic Chemistry I
- CH 218* ISE II
- CS 111* Intro. to CS I
- CS 112* Intro. to CS II
- MA 226* Differential Equations
- MA 242 Linear Algebra
- MA 416 Analysis of Variance
- ENG EK 127 Intro to Engineering Computation

For more information, contact Becca Reynolds (reyn@bu.edu) | 2 Cummington, Room 212. | Updated 10/31/19

Key: *Lab Course, *Offered Summer Term, *Offered Either Semester
**COLLEGE OF ARTS AND SCIENCES DIVISIONAL STUDIES REQUIREMENTS**

**LANGUAGE REQUIREMENT** Choose one of the following

- 560 or above on SAT Language Test (no listening required)
- Qualifying score (4 or 5) on AP Language Test
- Native proficiency in foreign language (in-person test required)

- Fourth semester language course
  - Language 1 ________  
  - Language 2 ________  
  - Language 3 ________  
  - Language 4 ________

**HUMANITIES REQUIREMENT** Two semesters of humanities courses

- Humanities 1 ________  
- Humanities 2 ________

**SOCIAL SCIENCE REQUIREMENT** Two semesters of social science courses

- Social Science 1 ________  
- Social Science 2 ________

**NATURAL SCIENCE REQUIREMENT** Fulfilled by Neuroscience major

**MATH & COMPUTER SCIENCE REQUIREMENT** Fulfilled by Neuroscience major

**WRITING REQUIREMENT** Two semesters of writing courses

- WR 100/120  
- WR 150/WR 151/WR 152

**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 Neuro 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 Calculus AB/BC
- 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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