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* 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

- Senior Thesis
  - NE 401
  - NE 402

CHEMISTRY* (2 courses) Choose one sequence

- CH 101
- CH 102 or CH 116
- CH 109
- 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
- MA 124

STATISTICS (1 course) Choose one sequence

- NE 212
- MA 115
- MA 116
- 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 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
- 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 EE 127 Intro to Engineering Computation

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 (rrevn@bu.edu) | 2 Cummings, Room 212). | Updated 10/31/19

Key: *Lab Course, *Offered Summer Term, *Offered Either Semester
**PHILOSOPHICAL, AESTHETIC, & HISTORICAL INTERPRETATION**

Philo-Eth Hist (PLH, 1 unit)
- CL 101
- CC 110

**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 (SOI1, 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

**QUANTITATIVE REASONING**

Quantitative Reasoning I (QR1, 1 unit)
- CH 101
- NE 212
- PY 105

Quantitative Reasoning II (QR2, 1 unit)
- MA 121
- MA 115
- PY 106

**COMMUNICATION**

First-Year Writing Seminar (FYW, 1 unit)
- EN 120
- WR 120
- CC 102

Writing, Research, & Inquiry (WRI, 1 unit)
- WR 150, 151, 152
- CC 201

Writing Intensive Course (WIN, 2 units)
- NE 102
- NE 203
- CC 202

Oral and/or Signed Communication (OSC, 1 unit)
- WR 151
- CC 102
- EN 142

Digital/Multimedia Expression (DME, 1 unit)
- WR 152
- CS 101
- EN 175

**INTELLECTUAL TOOLKIT**

Critical Thinking (CRT, 2 units)
- PY 105
- PS 101
- CC 112

Research & Information Literacy (RIL, 2 units)
- WR 150, 151, 152
- CC 201

Teamwork/Collaboration (TWC, 2 units)
- NE 102
- NE 203
- CC 111

Creativity/Innovation (CRI, 2 units)
- EN 150
- RN 100
- CC 101

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

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