

Course worksheet for Neuroscience majors transferring into BU in or after Fall 2024.

CORE NEUROSCIENCE COURSES (5 COURSES)

- NE 101^{##} Intro to Neuroscience
- NE 102^{*} Intro to Cell & Molecular Biology or NE 116^{*} ISE I
- NE 202 Intro to Cognitive Neuroscience
- NE 203^{*} Principles of Neuroscience or NE 218^{*} ISE II
- NE 204 Intro to Comp. Models of Brain and Behavior

*NE 203 is only offered in the Fall semester. NE 102, NE 202, and NE 204 are only offered in the Spring semester.

REQUIRED BASIC SCIENCE COURSES

CHEMISTRY REQUIREMENT (2 COURSES) Choose one sequence.

CH 101	CH 109
CH 102 <u>or</u> CH 116	CH 110 <u>or</u> CH 112

PHYSICS REQUIREMENT (2 COURSES) Choose one sequence.

PY 105	PY 211	PY 241
PY 106	PY 212	PY 242

CALCULUS, COMPUTER SCIENCE & DATA SCIENCE REQUIREMENT (2 COURSES) Choose one from each list.

List 1: <u>Calculus</u>	List 2: <u>Calculus, Computer Science & Data Science</u>
MA 121	MA 122 CS 111 DS 110
MA 123	MA 124 DS 100

*If using CS 111 or DS 110 towards this requirement, the course cannot be used as a Restricted Elective.

STATISTICS REQUIREMENT (1 COURSE or 2 COURSES) Choose one option.

NE 212	MA 115	MA 213
	MA 116	MA 214

RESEARCH REQUIREMENT Choose one of the following.

- Completion of NE 102/116 and NE 203/218
- One** upper-level lab course **not** from Restricted List
- One** semester of research for credit totaling 4 credits during Junior or Senior year

*A maximum of one faculty-mentored independent research course (4 credits) taken Junior or Senior year can be used toward the elective requirement for the major.

*Students may complete a maximum of 12 credits in research for credit while at CAS.

RESEARCH FOR CREDIT COURSES (OPTIONAL)

<u>JR/SR Research in Neuroscience</u>		<u>Honors Research</u>
NE 391	NE 491	NE 401
NE 392	NE 492	NE 402
NE 393	NE 493	

*Note that electives may not be offered every semester or every year. Please refer to MyBU Student for the most up to date information on class scheduling for the current/upcoming semesters. | Updated 5/22/2024

Key: *Lab Course, #Offered Summer Term, ^Offered Either Semester

NEUROSCIENCE ELECTIVE REQUIREMENT

- ✓ 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.
- ✓ One faculty-mentored independent research course (4 credits) taken Junior or Senior year counts as one elective.

GROUP 1: NEUROBIOLOGY

NE 230 Behavioral Endocrinology	NE 535 Translational Research in Alzheimer's disease
NE 349 Neurotoxins	NE 542 Neuroethology
NE 445 [*] Neurophysiology	NE 556 Drug Discovery in Neuro
NE 455 Developmental Neurobiology	NE 561 [*] Proteostasis in the Bio.of Neurodegen. Diseases
NE 481 Molecular Neurobiology	NE 589 Neural Impacts on Tumorigenesis
NE 503 Neuroimmunology	NE 594 [*] Topics in Neurobiology
NE 520 Sensory Neurobiology	NE 598 Neural Circuits
NE 525 ^{##} Neurodegenerative Diseases	BI 599 Physiology of the Synapse

GROUP 2: COGNITIVE

NE 234 ^{##} Psych of Learning	NE 521 Animal Models in Behavioral Neurobiology
NE 323 [*] Exp. Psych: Learning	NE 528 Human Brain Mapping
NE 327 [*] Exp. Psych: Perception	NE 529 Neuroplasticity
NE 328 [*] Exp. Psych: Memory	NE 531 Imaging & Manipulating Memories
NE 329 [*] Exp. Psych: Cog Neuro	NE 532 Neurobiology of Motivation, Decision Making, & Learning
NE 333 ^{##} Drugs & Behavior	NE 544 Developmental Neuropsychology
NE 337 Memory Systems	NE 592 Topics in Cognitive Neuroscience
NE 338 Neuropsychology	
NE 456 Neurobiology of Sex & Aggression	

GROUP 3: COMPUTATIONAL

NE 449 [*] Neuro. Design Lab	MA 578 Bayesian Statistics
NE 530 Neural Models of Memory	CN 510 Cognition & Neural Models I
NE 593 Topics in Computational Neuro.	CN 530 Neural & Comp Models of Vision
MA 242 Linear Algebra	CS 542 [*] Machine Learning <u>OR</u>
MA 565 Math Models in Life Sci.	CDS DS 340 Intro. to Machine Learning and AI
MA 573 Qualitative Theory of Differential Equations	CS 565 [*] Data Mining

RESTRICTED ELECTIVES

BI 203 ⁺ Cell Biology <u>OR</u>	CS 112 ^{##} Intro. to CS II
BI 213 Intensive Cell Biology	MA 226 ⁺ Differential Equations
BI 315 ⁺ Systems Physiology	MA 416 Analysis of Variance
CH 203 [*] Organic Chemistry I <u>OR</u>	CDS DS 210 Programming for Data Science
CH 218 [*] ISE II	
CS 111 ^{##} Intro. to CS I <u>OR</u>	ENG EK 125 Intro to Programming for Eng.
CDS DS 110 ⁺ Intro. to DS w/ Python	

Bachelor of Arts in Neuroscience

Boston University College of Arts and Sciences
Undergraduate Program in Neuroscience

GENERAL EDUCATION REQUIREMENTS *For more details visit the [CAS Degree Overview](#) page.*

- ✓ ‘C’ or higher required for all Neuroscience major courses. ‘C-’ or higher required for general chemistry sequence.
- ✓ 128 credits (excluding PDP, ROTC, FY, and SY) and successful completion of BU Hub requirements required to graduate from BU.
- ✓ 4th semester of foreign language proficiency required to graduate from CAS.

CAS 2nd LANGUAGE REQUIREMENT: *Can be completed by one of the following.*

Proficiency through the 4th semester: I II III IV

AP or IB Credit:

Bilingual Proficiency Evaluation:

BU HUB REQUIREMENTS:

PLM <u>or</u> AEX <u>or</u> HCO	QR2	CRT
SI1 <u>or</u> SI2	IIC <u>or</u> GCI <u>or</u> ETR	RIL
SO1 <u>or</u> SO2	WRI <u>or</u> WIN	TWC
		CRI

PRE-HEALTH 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 or NE 218 (Cell Biology) and BI 315 (Systems Physiology) to complete the pre-health 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 Cell Biology (BI 203 or BI 213)
- One year of General Chemistry with lab
- One year of Physics with lab
- One year of Writing
- One semester of Calculus
- One semester of Statistics
- One year of Organic Chemistry with lab (CH 203 and CH 204)
- One semester of Biochemistry (CH 373)
- One semester of Psychology (PS 101 or PS 261)
- One semester of Sociology (SO 100 or SO 215)

*Any courses in **red** are not met through Neuroscience major requirements.
*Any courses in **blue** are Restricted Electives for the Neuroscience major. A maximum of 2 of these courses can be used toward the elective requirement for the major.

PROPOSED COURSE OF STUDY

YEAR ONE	FALL	SPRING
YEAR TWO	FALL	SPRING
YEAR THREE	FALL	SPRING
YEAR FOUR	FALL	SPRING
SUMMER COURSES		

NOTES: