

Neuroscience Minor

MINOR REQUIREMENTS

- A grade of C- or higher is required is required for all major coursework.
 - Neuroscience Minor total units = 20 units; More units may be required to fulfill prerequisites
- At least four courses (16 units) must be unique to the minor (not required to fulfill another major or minor requirement).
- At least four courses (16 units) must be outside of your major department.

NEUROSCIENCE CORE REQUIREMENTS (20 units)

Course Number	Course Name	Units
BISC 421 (fall)	Neurobiology (BISC 220L)	4
NEUR UD Elective	see list below for options	4

STATISTICS REQUIREMENT- CHOOSE ONE (4 units)

Course Number	Course Name	Units
PSYC 274L	Statistics	4
BISC 305	Introduction to Statistics for Biologists	4
BUAD 310	Applied Business Statistics	4
ECON 317	Introduction to Statistics for Economists (MATH 118 or MATH 125)	4
HP 340L	Health Behavior Statistical Methods	4
MATH 208x	Elementary Probability and Statistics (MATH 125)	4
MATH 307	Statistical Inference and Data Analysis (MATH 125)	4
MATH 407	Probability Theory (MATH 226 or MATH 227 or MATH 229)	4

CHOOSE TWO (8 units)

Course Number	Course Name	Units
BISC 407 (spring)	Cellular and Molecular Neuroscience	4
BISC 408 (spring)	Systems Neuroscience: From Synapses to Perception (BISC 421)	4
PSYC 440	Introduction to Cognitive Neuroscience (PSYC 100L)	4

NEUROSCIENCE UPPER-DIVISION ELECTIVE REQUIREMENT (4 units required)

Course Number	Course Name	Units
BISC 307L (spring)	General Physiology (BISC 220L or 221L)	4
BISC 312 (spring)	Molecular Biochemistry (BISC 220L or 221L; cannot take CHEM 350 if this course is taken)	4
BISC 313L (spring)	Evolution & Population Genetics (BISC 120L or 121L; BISC 220L or 221L)	4
BISC 320L (fall)	Molecular Biology (CHEM 105bL or 115bL)	4
BISC 325 (fall)	Genetics (BISC 120L or 121L; BISC 220L or 221L; BISC 320L; CHEM 322aL)	4
BISC 330L	Biochemistry (CHEM 322aL)	4
BISC 403 (fall)	Advanced Molecular Biology (BISC 320L)	4
BISC 406L (fall)	Biotechnology (BISC 320L)	4
BISC 410 (spring)	Applications of Molecular Biology to Medicine (BISC 330L)	4
BISC 411	Cell Biology (BISC 220L or 221L; BISC 320L)	4
BISC 423 (spring)	Epilepsy to Ecstasy: Biological Basis of Neurological Disorders (BISC 421)	4
BISC 424 (spring)	Brain Architecture (BISC 421)	4
BISC 444 (fall)	Practical Analysis of Biological Data in R	2
BISC 461 (fall)	Seminar in Molecular and Computational Biology	2
BISC 462	Seminar in Neurobiology (can be repeated twice; different topic each semester)	2
BISC 480	Developmental Biology (BISC 220L or 221L)	4
BISC 481 (fall)	Structural Bioinformatics: From Atoms to Cells	4
BISC 486 (fall)	Regenerative Medicine: Principles, Paradigms and Practice (BISC 220 or BISC 221 or BISC 320)	4
BISC 499	Neuroimmunology (No other topics)	4
BME 210 (spring)	Biomedical Computer Simulation Methods (coreq. MATH 245)	4
BME 402 (spring)	Control and Communication in the Nervous System (MATH 245; BME 210; BISC 220L or 221L)	4
CHEM 350 (fall)	Molecular Principles in Biochemistry (CHEM 105bL/115bL; coreq. CHEM 322aL; cannot take BISC 312 if this course is taken)	4

CSCI 360L	Introduction to Artificial Intelligence (CSCI 104L; CSCI 170)	4
CSCI 445L	Introduction to Robotics (CSCI 103L)	4
ECON 405	Neuroeconomics	4
GERO 310 (fall)	Physiology of Aging	4
GERO 320 (fall)	Psychology of Adult Development	4
GERO 414 (spring)	Neurobiology of Aging (BISC 220L or 221L)	4
GERO 415	Neuroaffective Disorders of Aging	4
GERO 494 (spring)	Emotion-Cognition Interactions and Aging	4
HBIO 306	Primate Social Behavior	4
HBIO 420L	Applied Human Physiology (BISC 220 or BISC 221)	4
HBIO 435	Neurobiology of Feeding Behavior and Obesity	4
HP 409	Environmental Impacts on the Brain	4
MEDS 340	The Brain in Health and Disease ((BISC 220 or BISC 221) and (CHEM 103 or CHEM 105A or CHEM 115A)	4
MEDS 350	Neurochemistry of Addiction: Drugs, Brain, and Behavior ((BISC 220 or BISC 221) and (CHEM 103 or CHEM 105A or CHEM 115A)	2
NEUR 490x	Directed Research (students must apply and be approved to register)	2-4
PSYC 301L	Cognitive Processes (PSYC 100L)	4
PSYC 304L	Sensation and Perception (PSYC 100L)	4
PSYC 305	Learning and Memory (PSYC 100L)	4
PSYC 320	Principles of Psychobiology (PSYC 100L)	4
PSYC 326	Behavioral Neuroscience (PSYC 100L)	4
PSYC 337L (spring)	Adult Development and Aging (PSYC 100L)	4
PSYC 339L (fall)	Origins of the Mind	4
PSYC 404L	Psychophysiology of Emotion (PSYC 100L; PSYC 274L; PSYC 314)	4
PSYC 420	Animal Behavior (PSYC 100L)	4
PSYC 424	Neuropsychology	4
PSYC 425	Functional Imaging of the Human Brain (PSYC 100L; PSYC 274L)	4
PSYC 426	Motivated Behaviors and Addiction (PSYC 100L)	4
PSYC 427	Neuropsychopharmacology (PSYC 100L)	4
PSYC 428	Advanced Psychobiology Seminar (PSYC 304L or PSYC 326)	4
PSYC 438	Behavioral Genetics (PSYC 274L)	4
PSYC 450 (spring)	Neural Network Models of Social and Cognitive Processes (PSYC 100L)	4
PSYC 452	Social Neuroscience (PSYC 100L)	4
RXRS 403	Neuropharmacology in Health and Disease	4
RXRS 405 (fall)	Breaking Brains: The Pharmacology of Drug Addiction	4
RXRS 412 (fall)	Ethics, Drugs and Society	4

AVAILABLE FOR UPPER-DIVISION ELECTIVE SUBSTITUTION[^]

Course Number	Course Name	Units
BPSI 405 (fall)	Organ Systems Physiology, Drug Delivery and Drug Action	4

GRADUATE-LEVEL COURSEWORK AVAILABLE FOR UPPER-DIVISION ELECTIVE SUBSTITUTION #[^]

Course Number	Course Name	Units
BISC 515	Evolution and Human Biology	4
BME 575L	Computational Neuroengineering (BME 502)	3
CSCI 564	Brain Theory and Artificial Intelligence	3
NSCI 524	Advanced Overview of Neurosciences (BISC 421)	4
PSYC 506	Learning and Cognition	4
PSYC 510	Visual Cognition	4
PSYC 540	Cognitive Neuroscience	4
PSYC 544	Psychophysiology	4
PSYC 545	Neuropsychology	4
PSYC 547	Functional Neuroanatomy	4
PSYC 551	Decision Neuroscience	4
PSYC 555	Introduction to Functional Magnetic Resonance Imaging	4

#Student must have a minimum cumulative GPA of 3.3 and receive permission to enroll from Program Director and course instructor.

[^]Only 25% of upper-division units can be substituted with CHEM, ECON, HP, NSCI, and/or RXRS coursework (7 total units)