NEUROSCIENCE MINOR

Neuroscience embodies the liberal arts experience because it draws on techniques and findings from several academic disciplines including biology, chemistry, computer science, exercise and sports science, mathematics, physics, and psychology. The neuroscience minor provides undergraduate students the opportunity to obtain fundamental knowledge and exposure needed to pursue careers and post-graduate studies in fields related to psychology, human development and aging, health and disease, rehabilitation, biotechnology, biomedical research, human-machine interactions, and other emerging disciplines.

The minor is open to all students, including psychology majors. However, students should note that they are limited to no more than 45 credit hours within a specific department. Students must earn a grade of C or better in at least four of the five courses.

Requirements

In addition to the program requirements listed below, students must:

- take at least nine hours of their minor "core" requirements at UNC–Chapel Hill
- earn a minimum cumulative GPA of 2.000 in the minor core requirements. Some programs may require higher standards for minor or specific courses.

For more information, please consult the degree requirements section of the catalog (https://catalog.unc.edu/undergraduate/degree-requirements/).

Code	Title	Hours
Core Requirements		
NSCI 175	Introduction to Neuroscience (with a grade of C or better) [F]	3
Four courses distributed over at least three academic departments, selected from the following lists:		12
Psychology and Neuroscience:		
NSCI 221	Neuropsychopharmacology	
NSCI 222	Learning [H]	
NSCI 225	Sensation and Perception [H]	
Any NSCI course numbered between 300-699 [1]		
PSYC 245	Psychopathology [H]	
PSYC 404	Clinical Psychopharmacology	
PSYC 469	Evolution and Development of Biobehavioral Systems	
PSYC 517	Addiction	
PSYC 533	The General Linear Model in Psychology [H]	
PSYC 535	Programming for Psychologists: Computational Tools for Psychological Research	
PSYC 559	Applied Machine Learning in Psychology	
PSYC 602	Evolutionary Psychology	
Applied Physical Sciences:		
APPL 101	Exploring Engineering	
APPL 240	Electronics from Sensors to Indicators: Circuits that Interact with the Physical World	
APPL 350	Data Science for Applied Science and Engineering	
APPL 430	Optoelectronics from Materials to Devices	
APPL 435	Nanophotonics	
Biology:		
BIOL 205	Cellular and Developmental Biology [H]	
BIOL 224H & BIOL 224L	The Mathematics of Life and The Mathematics of Life Laboratory	
BIOL 226 & 226L	Mathematical Methods for Quantitative Biology and Mathematical Methods for Quantitative Biology Laboratory	
BIOL 240	Cell Biology [H]	
BIOL 425	Human Genetics	
BIOL 431	Biological Physics	
BIOL 440	Stem Cell Biology	
BIOL 450	Neurobiology	
BIOL 451	Comparative Physiology	
BIOL 453	Molecular Control of Metabolism and Metabolic Disease	
BIOL 455	Behavioral Neuroscience	
BIOL 458	Sensory Neurobiology and Behavior	
BIOL 523	Sex Differences in Human Disease	
BIOL 544L	Laboratory in Diseases of the Cytoskeleton	
BIOL 545	Exploring Brain, Gut, and Immunity [H]	
BIOL 547	Synaptic Plasticity: Analysis of Primary Literature	
BIOL 552	Behavioral Endocrinology	
BIOL 553	Mathematical and Computational Models in Biology	
BIOL 554	Introduction to Computational Neuroscience	
BIOL 542	Light Microscopy for the Biological Sciences	
Biomedical Engineering:		
BMME 207	Biomedical Electronics	
BMME 301	Human Physiology: Electrical Analysis	
BMME 545	Systems Neuroscience	
BMME 550	Medical Imaging I: Ultrasonic, Optical, and Magnetic Resonance Systems	
Chemistry:		
CHEM 430	Introduction to Biological Chemistry [H]	
Computer Science:		
COMP 110	Introduction to Programming and Data Science [H]	
or COMP 11(	Introduction to Scientific Programming	
COMP 210	Data Structures and Analysis	
COMP 211	Systems Fundamentals	
COMP 301	Foundations of Programming	
COMP 311	Computer Organization	
COMP 283	Discrete Structures [H]	
COMP 555	Bioalgorithms	
COMP 560	Artificial Intelligence	
COMP 562	Introduction to Machine Learning [H]	
COMP 576	Mathematics for Image Computing	
COMP 581	Introduction to Robotics [H]	
COMP 631	Networked and Distributed Systems	
COMP 633	Parallel and Distributed Computing	

COMP 651	Computational Geometry
COMP 665	Images, Graphics, and Vision
Exercise and Sport Science:	
EXSS 155	Human Anatomy and Physiology I [F]
EXSS 175	Human Anatomy [F]
EXSS 256	Human Anatomy and Physiology II
EXSS 276	Human Physiology
EXSS 380	Neuromuscular Control and Learning
EXSS 580	Neuromechanics of Human Movement
Mathematics:	
MATH 210	Mathematical Tools for Data Science
MATH 233	Calculus of Functions of Several Variables [H, F]
MATH 235	Mathematics for Data Science
MATH 347	Linear Algebra for Applications
MATH 383	First Course in Differential Equations [H]
MATH 523	Functions of a Complex Variable with Applications
MATH 528	Mathematical Methods for the Physical Sciences I
MATH 529	Mathematical Methods for the Physical Sciences II
MATH 535	Introduction to Probability
MATH 553	Mathematical and Computational Models in Biology
MATH 555	Introduction to Dynamics
MATH 564	Mathematical Modeling in the Life Sciences
MATH 566	Introduction to Numerical Analysis
MATH 577	Linear Algebra
MATH 594	Nonlinear Dynamics
MATH 661	Scientific Computation I
MATH 662	Scientific Computation II
MATH 668	Methods of Applied Mathematics I
MATH 669	Methods of Applied Mathematics II
Physics:	
PHYS 405	Biological Physics
PHYS 461	Introduction to Medical Physics
Statistics and Operations Research:	
STOR 215	Foundations of Decision Sciences
STOR 235	Mathematics for Data Science
STOR 320	Introduction to Data Science
STOR 415	Introduction to Optimization
STOR 435	Introduction to Probability
STOR 445	Stochastic Modeling
STOR 455	Methods of Data Analysis
STOR 535	Probability for Data Science
STOR 555	Mathematical Statistics
STOR 556	Time Series Data Analysis
STOR 565	Machine Learning
Total Hours	**15**

H Honors version available. An honors course fulfills the same requirements as the nonhonors version of that course. Enrollment and GPA restrictions may apply.

F FY-Launch class sections may be available. A FY-Launch section fulfills the same requirements as a standard section of that course, but also fulfills the FY-SEMINAR/FY-LAUNCH First-Year Foundations requirement. Students can search for FY-Launch sections in ConnectCarolina using the FY-LAUNCH attribute.

[1] Except NSCI 395, NSCI 493, NSCI 693H, and NSCI 694H
[2] Many courses in this list require a prerequisite(s). Please review prerequisite information carefully when planning your course selection.

Department Programs

Majors

- Neuroscience Major, B.S. (https://catalog.unc.edu/undergraduate/programs-study/neuroscience-major-bs/)
- Psychology Major, B.A. (https://catalog.unc.edu/undergraduate/programs-study/psychology-major-ba/)
- Psychology Major, B.S. (https://catalog.unc.edu/undergraduate/programs-study/psychology-major-bs/)

Minors

- Neuroscience Minor (p. 1)

Graduate Programs

- M.A. in Psychology (https://catalog.unc.edu/graduate/schools-departments/psychology-neuroscience/)
- Ph.D. in Psychology (https://catalog.unc.edu/graduate/schools-departments/psychology-neuroscience/)

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