BNB Neurobiology and Behavior

BNB 551: Writing Neuroscience
Seminar course for doctoral students in Neuroscience providing practical instruction in written communication in Neuroscience. Topics include writing effective abstracts, cover letters, figure captions, and grant specific aims, among others.
1-2 credits, Letter graded (A, A-, B+, etc.)

BNB 552: Neurobiological Techniques
A series of laboratory exercises designed to give students hands-on experience in the basic laboratory techniques of contemporary neuroscience. Includes intracellular and extracellular recording, neuronal tissue culture, neuroanatomical techniques, and integrative physiology.
Fall, 2 credits, Letter graded (A, A-, B+, etc.)

BNB 555: Laboratory Rotations in Neuroscience
Course for doctoral students in Neuroscience in which students participate in three formal laboratory rotations in program faculty laboratories during the first year. Students make oral presentations for each rotation. Instruction is provided in how to organize and present material in a seminar format, including the proper use of visual aids. Enrollment restricted to students in the Graduate Program in Neuroscience.
Fall and Spring, 1-3 credits, Letter graded (A, A-, B+, etc.)
May be repeated 2 times FOR credit.

BNB 560: Introduction to Mammalian Neuroanatomy
This course consists of visual presentations and supplemental lectures providing an overview of the structural organization of the nervous system. The mammalian nervous system and its sensory, motor and cognitive components are emphasized. Opportunities for examination of whole brains and historical sections, and some hands-on experience with basic neuroanatomical techniques may also be available.
1-2 credits, Letter graded (A, A-, B+, etc.)

BNB 561: Introduction to Neuroscience I
First of a two semester core course introducing students to basic principles of neuroscience. The major focus is cellular and molecular neuroscience. Topics covered include the ionic basis of resting potentials and electrical excitability, the structure, function and molecular biology of voltage- and ligand-gated ion channels, exocytosis, cellular networks, and gene regulation.
4 credits, Letter graded (A, A-, B+, etc.)

BNB 562: Introduction to Neuroscience II
Second of two-semester core course introducing students to basic principles of neuroscience. The major focus is systems neuroscience. Topics covered include analyses of all major sensory systems, motor systems, and systems mediating higher order, cognitive functions in the nervous system.
4 credits, Letter graded (A, A-, B+, etc.)

BNB 563: Advanced Topics in Neuroscience I
This course consists of two separate modules taught by different faculty on focused topics in neuroscience, typically focusing on synaptic plasticity and development.
1-3 credits, Letter graded (A, A-, B+, etc.)

BNB 564: Advanced Topics in Neuroscience II
This course consists of one to three separate modules taught by different faculty on focused topics in neuroscience.
Spring, 1-3 credits, Letter graded (A, A-, B+, etc.)

BNB 565: Developmental Neuroscience
A modular course introducing concepts in the development of the nervous system. Topics can include neuroembryology, neuronal differentiation, synapse formation, and specificity and plasticity of connections in vertebrates and invertebrates.
Offered Fall, 1 credit, Letter graded (A, A-, B+, etc.)
May be repeated 2 times FOR credit.

BNB 566: Neurobiology of Disease
This advanced seminar course is coordinated with the Neurobiology of Disease lecture series hosted by the Program in Neuroscience each Spring semester. The Program invites 5-6 distinguished scientists to present research seminars organized around the broad topic of neurobiological and neurological diseases. Students read and discuss papers recommended by the guest speakers. This course also provides students the opportunity to meet with the guest seminar speakers.
Offered Spring, 1 credit, Letter graded (A, A-, B+, etc.)
May be repeated 1 times FOR credit.

BNB 567: Seminar Themes
This course focuses on current research topics in neuroscience and is integrated with the Neurosciences Seminar Series. It is centered on a common research theme. Students discuss manuscripts, attend seminars and meet with outside speakers.
Offered Fall/Spring, 1 credit, Letter graded (A, A-, B+, etc.)
May be repeated 2 times FOR credit.

BNB 599: Research
Original investigation undertaken with supervision of a member of the staff.
Fall and Spring, 1-12 credits, S/U grading
May be repeated for credit.

BNB 655: Neuropharmacology
An advanced course for graduate students interested in developing an understanding of neuropharmacology and research on this topic. Following a general introduction to the nerve cell structure, synaptic and chemical transmission, three themes receptors, receptors as channels, and G-protein-coupled receptors are developed. Recent advances in cell and molecular biology provide the framework for instruction and discussion. This course is offered as both HBH 655 and BNB 655.
Prerequisite: Admission to Graduate Health Sciences Center Program.
Spring, 3 credits, Letter graded (A, A-, B+, etc.)

BNB 697: Neuroscience Seminar Series
Seminar presentations delivered by faculty, associates, students and visiting speakers.
Fall and Spring, 0-1 credits, S/U grading
May be repeated for credit.

BNB 699: Dissertation Research on Campus
Original investigations undertaken as part of the Ph.D. program under the supervision of the dissertation committee. Prerequisite: Must be advanced to candidacy (G5). Major portion of research must take place on SBU campus, at Cold Spring Harbor, or at the Brookhaven National Lab.
Fall, 1-9 credits, S/U grading
May be repeated for credit.

BNB 700: Dissertation Research off Campus - Domestic
Prerequisite: Must be advanced to candidacy (G5). Major portion of research will take place off-campus, but in the United States and/or U.S. provinces. Please note, Brookhaven National Labs and the Cold Spring Harbor Lab are considered on-campus. All international students must enroll in one of the graduate
student insurance plans and should be advised by an International Advisor.

Fall, 1-9 credits, S/U grading
May be repeated for credit.

**BNB 701: Dissertation Research off Campus - International**

Prerequisite: Must be advanced to candidacy (G5). Major portion of research will take place outside of the United States and/or U.S. provinces. Domestic students have the option of the health plan and may also enroll in MEDEX. International students who are in their home country are not covered by mandatory health plan and must contact the Insurance Office for the insurance charge to be removed. International students who are not in their home country are charged for the mandatory health insurance. If they are to be covered by another insurance plan they must file a waiver by second week of classes. The charge will only be removed if other plan is deemed comparable.

All international students must received clearance from an International Advisor.
Fall, 1-9 credits, S/U grading
May be repeated for credit.

**BNB 800: SUMMER RESEARCH**

May be repeated for credit.