NEUROSCIENCE (NSC)

NSC 170 Special Topics in Neuroscience (3 credits)
Concentrated focus on a selected topic in Neuroscience. Topic and content vary from semester to semester.
Attributes: Undergraduate

NSC 190 Neuroscience Orientation (0 credits)
Introduction to the neuroscience program, including current developments and future prospects. Designed to preparestudents for current studies and future careers. Required for all first-year neuroscience students; open to all interestedstudents.
Restrictions: Enrollment is limited to Undergraduate Day Division level students.
Attributes: Undergraduate

NSC 205 Introduction to Neuroscience (3 credits)
Introduction to neuron structure and function, synaptic transmission, organization of the nervous system, brain-behaviorrelationships, and current neuroscience methods.
Prerequisites: BIO 102 or BIO 119 or BIO 133 or PSY 201
Restrictions: Enrollment is limited to Undergraduate Day Division level students.
Attributes: Undergraduate

NSC 206 Intro. to Neuroscience II (3 credits)
This course focuses on the biological foundations of behavior and cognition. Fundamental methods and processes of thebehavioral neuroscience will be emphasized including motivation, emotion, language, attention, memory, and mentalillness.
Prerequisites: (NSC 205 or BS 260 or PS 260 or NS 260) and (PSY 100 (may be taken concurrently) or PSY 101 (may be taken concurrently) or PS 101 or PS 111)
Attributes: Undergraduate

NSC 270 Special Topics in Neuroscience (3 credits)
Concentrated focus on a selected topic in Neuroscience. Topic and content vary from semester to semester.
Attributes: Undergraduate

NSC 290 Neuroscience Colloquium (1 credit)
This course will introduce students to Neuroscience faculty, research, and career options. Students will read primaryliterature in the field, attend related seminars, and submit reflections or reports based on these activities.
Restrictions: Enrollment is limited to students with a major in Neuroscience.
Attributes: Undergraduate

NSC 340 Intro: Neuropsychopharmacology (3 credits)
This course will provide a working knowledge of the neurobiological and neurochemical basis of behavior and the mechanism by which drugs influence synaptic neurotransmission to alter behavior and function in neurologic and psychiatric disorders.
Prerequisites: NSC 205 or PSY 205 or PSY 201 or BIO 205 or BS 260 or BS 206 or BS 311 or NS 260 or PC 303
Attributes: Undergraduate

NSC 370 Special Topics in Neuroscience (3 credits)
Concentrated focus on a selected topic in Neuroscience. Topic and content vary from semester to semester.
Attributes: Undergraduate

NSC 422 Neurodevelopment Disorders (3 credits)
An introduction of Neurodevelopmental Disorders, with an emphasis on autism spectrum disorder and attention deficit-hyperactivity disorder. This course aims to expose students to clinical and scientific thinking about atypical childdevelopment. This course will include material on clinical diagnosis and treatment, as well as brain-behavior relationships.
Prerequisites: PS 101
Attributes: Undergraduate

NSC 424 Developmental Cognitive Neuros (3 credits)
This course examines the relations between neural and cognitive development from birth through adolescence. Topics willinclude: principles of brain development, developmental elasticity, neurocognitive development in various domains (e.g.,attention, memory, language), neurodevelopmental disorders, and implications for education.
Prerequisites: (NS 261 or PS 261) and (PS 200 or PS 329)
Attributes: Undergraduate

NSC 425 Biophysics of the Brain (3 credits)
This course introduces biophysical models of the brain and the nervous system functioning. In particular the physics of theneocortex is presented through the analysis of EEG studies. Simulations with software packages are employed to illustratewith various examples the models and their results. Linear electrical analogs and some basics of neural network theory arepart of the course content. Elements of Biophysics of consciousness are also presented and a set of case studies is analyzedand discussed.
Prerequisites: PY 202 or PY 212
Attributes: Undergraduate

NSC 428 Neuropsychology (3 credits)
This course is designed to introduce upper-level students interested in careers in medicine, clinical psychology, and related health science disciplines to the structure-function relationships of the human brain. The course emphasizes adult brainanatomy and function. The behavioral effects of brain damage (e.g., agnosia, neglect, aphasia, apraxia, amnesia) will berelated to neuropsychological theories of brain function and examined in depth through readings, case material, and presentations.
Prerequisites: (PSY 100 or PSY 101 or PS 101 or PS 111) and (BIO 102 or BS 119 or BS 133 or PSY 201)
Attributes: Undergraduate

NSC 432 Genes and Brains (3 credits)
Advances in the fields of neuroscience and genetics have begun to unravel complex ways in which our genes control proper functioning and dysfunctioning of our brains. In this course-based undergraduate research experience (CURE), students investigate emerging ideas in neurogenetics through rigorous and collaborative laboratory-based research. Students apply the scientific method to test hypotheses, collect and interpret data, and examine broader relevance of their experiments through analysis of primary literature.
Prerequisites: BS 260 or NS 260
Attributes: Undergraduate

NSC 455 Molec Basis Neuro Disorders (3 credits)
In this course, students will practice reading and interpreting primary scientific literature focused on the molecular basis of neurological disorders and neurodevelopmental disorders. Students will be challenged to draw connections between known and proposed molecular bases for these varied conditions, propose models and techniques for studying them, and to identify potential targets for treatments. and draw connections between studies and mechanisms and to propose novel experiments, treatments, and avenues of research.
Prerequisites: BS 260 or NS 260 or PS 260 or NSC 205
Attributes: Undergraduate

NSC 460 Neurobiology (3 credits)
In-depth study of the molecular and cellular components of neurons and neural networks. Neuronal functions includingsynaptic transmission, neurotransmitter release, signaling pathways, and gene expression will be covered. Primaryliterature will be used to analyze the cellular mechanisms and components regulating neural systems including sensation,integration, sleep, learning, and memory.
Prerequisites: BS 260 or NS 260 or PS 260 or NSC 205
Attributes: Undergraduate

NSC 470 Special Topics in Neuroscience (3 credits)
Topics will vary according to the semester in which the class is offered.

NSC 490 Seminar in Neuroscience (1 credit)
This course focuses on current research and techniques in the field of Neuroscience through primary literature review,discussion, and analysis. Topics will be chosen based on current discoveries and advancements in the field.
Prerequisites: BS 260 or NS 260 or PS 260 or NSC 205
Attributes: Undergraduate

NSC 491 Neuroscience Capstone (1 credit)
This course is the culmination of student directed research or independent study. Students will present and discussresearch with the class. Students will justify research predictions and design, explain primary findings, anddefend conclusions in the field of neuroscience.
Prerequisites: NS 495 or NSC 490
Restrictions: Enrollment is limited to students with a major in Neuroscience.
Attributes: Undergraduate

NSC 492 Neuroscience Internship (3 credits)
Internships enable the student to gain first-hand experience working in some field of neuroscience. Interns should work a minimum of 10 hours weekly for 12 weeks to earn credit for a single course. Permission to take an internship for course credit must be obtained prior to beginning the internship.
Prerequisites: (NS 260 and NS 261) or (NSC 205 and NSC 206)
Attributes: Undergraduate

NSC 493 Neuroscience Internship II (3 credits)
Internships enable the student to gain first-hand experience working in some field of neuroscience. Interns should work a minimum of 10 hours weekly for 12 weeks to earn credit for a single course. Permission to take an internship for course credit must be obtained prior to beginning the internship. Permission of the Neuroscience program is required.
Prerequisites: NSC 492
Attributes: Undergraduate

NSC 494 Undergraduate Research (1-6 credits)
Laboratory or field work in neuroscience on a specific problem in cooperation with a faculty member of the department. Normally requires three hours of work per week for each unit of credit. This course may be taken for credit multiple semesters but only one semester counts as a neuroscience elective. In subsequent semesters this course will count as a general elective. Students need to complete the application form for independent study and have the approval of the program and Associate Dean.
Prerequisites: (NS 260 and NS 261) or (NSC 205 and NSC 206)
Attributes: Undergraduate

NSC 495 Undergraduate Research II (1-6 credits)
Laboratory or field work in neuroscience on a specific problem in cooperation with a faculty member of the department. Normally requires three hours of work per week for each unit of credit. This course may be taken for credit multiple semesters but only one semester counts as a neuroscience elective. In subsequent semesters this course will count as a general elective. Students need to complete the application form for independent study and have the approval of the program and Associate Dean.
Prerequisites: NSC 494
Attributes: Undergraduate