

NEUROSCIENCE (NSCI)

NSCI 1005 Intro to NSCI Lab (1 Credit Hour)

This is a lab course that introduces high-school students to procedures in neuroanatomy, behavioral neuroscience, animal learning and memory, human sensation and perception, and bench science. Statistical analyses and scientific writing is included. Limited to high school students.

NSCI 1015 Basic Neuroscience with Lab (3 Credit Hours)

Introduction for high school students enrolled in the TSSP summer program.

NSCI 1940 Transfer Coursework (1-3 Credit Hours)

NSCI 2890 Service Learning (0-1 Credit Hours)

Service learning component to NSCI courses. See Schedule of Classes each semester for offerings. 20 or 40 hours of public service with a CPS approved community partner.

NSCI 2940 Transfer Coursework (1-3 Credit Hours)

NSCI 3010 Physical Dimensions of Aging (3 Credit Hours)

This course is designed to introduce students to the physiological, behavioral, and cognitive changes associated with aging. In particular, we will focus on the effects of exercise on the aging human system. We will also discuss what it means to become older within a community, what can a person expect during the aging process, and what kind of control a person has over his/her aging body. Does not count as a NSCI lecture elective.

Prerequisite(s): CELL 1010, 1010, 1010 or 1010 and (EBIO 1010, 1010, 1010, 1010, 1110, 1110, 1110 or 1110) or EBIO 1015, 1015, 1015 or 1015.

NSCI 3300 Brain and Behavior (3 Credit Hours)

Lectures cover the function and structure of the nervous system and the role of brain activity in the regulation of behavior. This course provides Neuroscience majors with a first exposure to the biological bases of behavior and should be taken prior to other Neuroscience courses at the 3000-level and above.

Prerequisite(s): PSYC 1000, 1000, 1000 or 1000.

NSCI 3310 Cellular Neuroscience (3 Credit Hours)

In-depth coverage of the basic principles of cellular neuroscience, including the biophysical basis of the membrane potential, action potential generation and propagation, and synaptic signaling. Students also will be introduced to the synaptic organization of higher neural systems, such as the visual, auditory and somatic sensory systems.

Prerequisite(s): CELL 1010, 1010, 1010 or 1010.

NSCI 3315 Cellular Neuroscience Lab (1 Credit Hour)

This is an interactive lab class giving students hands-on experience working with techniques used in the study of cellular neuroscience. Techniques include: behavioral testing using invertebrates, tissue staining, immunocytochemistry, and intracellular electrophysiological recordings.

Prerequisite(s): CELL 3310 or NSCI 3310.

NSCI 3320 Systems Neuroscience (3 Credit Hours)

The subject of this course is the human nervous system, its anatomy, connectivity and function. Discusses the normal structure of the nervous system and the relationship of that structure to physiological function. The course is taught from a practical, clinical point of view and is intended to prepare students for further study in the neurosciences.

Prerequisite(s): CELL 3310 or NSCI 3310.

NSCI 3325 Neuroanatomy Lab (1 Credit Hour)

The subject of this course is the anatomy of the human nervous system. Students will learn to identify and map the structure and position of nuclei, pathways, and anatomical divisions of the brain and spinal cord. The course is a practical correlate to Systems Neuroscience (NSCI 3320), and is intended to prepare students for further study in the neurosciences.

Prerequisite(s): CELL 3320*, 3320, 3320, 3320, NSCI 3320*, 3320, 3320 or 3320.

* May be taken concurrently.

NSCI 3360 Neuroanatomy & CNS Dissection (3 Credit Hours)

The course emphasis is extracting intact Central Nervous System (CNS) structures with connecting peripheral nerves. The course will look at specific pathways (afferent, efferent, dermatomes) and discuss related clinical manifestations associated with lesions to the individual CNS and peripheral nerve structures. Team dissection will attempt to save substantial segments of cranial nerves and will explore the structures with which they communicate. As student progress through the dissection they will: 1) identify structures that surround and or cover the CNS; 2) log them in a course notebook and then dissect appropriate structures. Grading will be based upon participation, complete notebooks and final dissection results. (e.g., why do you remove the brain, spinal cord, and peripheral nerves as a single unit in reasonable condition?)

NSCI 3660 Special Topics (1-4 Credit Hours)

Courses offered by visiting professors or permanent faculty primarily for undergraduates. For description, consult department.

Corequisite(s): NSCI 3661.

NSCI 3665 Special Topics Lab (1-3 Credit Hours)

Special Topics Lab.

NSCI 3770 Sensation & Perception (3 Credit Hours)

Course provides the student with an appreciation for the different senses and the psychological phenomena associated with each sense. Topics include the major theories and experimental methods and findings associated with each of the sensory systems. Emphasis is placed on understanding sensory functions from an evolutionary perspective. The objective is for the student to obtain a firm understanding of the sensory functions and psychological phenomena associated with each sense.

Prerequisite(s): NSCI 3300 or PSYC 3300.

NSCI 3775 Sensation & Percptn Lab (1 Credit Hour)

Course provides the student with hands on activities in order to gain a deeper understanding for the different senses and the methods used to study psychological phenomena associated with each sense. Satisfies neuroscience laboratory requirement.

Prerequisite(s): NSCI 3300 or PSYC 3300.

NSCI 3880 Writing Intensive (0-1 Credit Hours)

Course to be attached to regular courses that incorporate a writing component within the regular course. Register within department.

NSCI 3890 Service Learning (0-1 Credit Hours)**NSCI 3940 Transfer Coursework (1-3 Credit Hours)****NSCI 3945 Transfer Course Work Lab (1-3 Credit Hours)****NSCI 4060 Behavioral Endocrinology (3 Credit Hours)**

An introduction to the roles of steroid and peptide hormones in physiology and behavior. Lectures focus on the hormonal mechanisms that control reproductive and regulatory functions in human and infrahuman species.

Prerequisite(s): (NSCI 3300, 3300, 3300 or 3300) or (NSCI 3670, 3670, 3670 or 3670) or (PSYC 3300, 3300, 3300 or 3300) or (PSYC 3670, 3670, 3670 or 3670).

NSCI 4065 Behavioral Endocrinology Lab (1 Credit Hour)

Laboratories provide demonstration and hands-on experience in research methods used in contemporary neuroendocrinology including hormonal manipulation, behavioral measurement, data analysis, and manuscript preparation.

Prerequisite(s): (NSCI 3300 or PSYC 3300) and (NSCI 4060* or PSYC 4060*).

* May be taken concurrently.

NSCI 4110 Brain and Language (3 Credit Hours)

The goal of this course is to learn how the brain is organized to produce and comprehend language and to understand linguistic disorders attendant on brain damage. There is an optional service learning component in which students can work with a speech therapist at a local health-care provider.

Prerequisite(s): NSCI 3300 or PSYC 3300.

NSCI 4130 Sport Rel Brain Injury (3 Credit Hours)

This course will provide students with a conceptual and practical appreciation of contemporary neuroscience techniques that are utilized for the assessment and rehabilitation of athletes that suffer sport related concussion(s), including both strengths and limitations. The course will provide an innovative and engaging environment within the community for supervised exploration of specific components of sport concussion management including education/prevention and baseline testing. The students will also communicate research findings in oral and written formats. Course grades will be determined by the students' performance on test(s), scientific article critiques, student lead class discussions, and a group project. In lieu of a final exam, students will submit a group project that will simulate the process to complete a clinical research project. All undergraduate students who register for the course are required to register and to participate in the Service Learning course.

Prerequisite(s): NSCI 3300 or PSYC 3300.

NSCI 4200 General Endocrinology (3 Credit Hours)

This course explains the basics of hormone action and hormone interactions with their receptors, with an emphasis on the molecular mechanisms by which homeostasis is maintained in multicellular organisms. Physiological outcomes of hormone actions on different organs, as well as aberrant hormone action will be covered.

Prerequisite(s): CELL 3030 or 3750.

NSCI 4330 Neurobiol Learn & Memory (3 Credit Hours)

An introduction to the study of the neural mechanisms involved in learning and memory. The course involves detailed study of the memory systems of the brain as well as historical trends, theoretical perspectives and empirical findings that are associated with the neurobiology of learning and memory.

Prerequisite(s): NSCI 3300 or PSYC 3300.

NSCI 4340 Neurobiology of Disease (3 Credit Hours)

Advanced course on the higher neural functions of the nervous system and neurological diseases resulting from disruption of these functions. An emphasis is placed on the physiology of the nervous system and neural dysfunction caused by inherited and acquired diseases. Topics range from motor control and neuromuscular diseases to high cognitive function and dementia. Clinical interventions as well as current research are discussed.

NSCI 4350 Developmental Neurobiol (3 Credit Hours)

A broad overview of the different stages of neural development. Examination of the molecular aspects of developmental neurobiology, with reference to some important signaling pathways involved in neural growth and specification. Particular attention will be given to those active research fields, such as growth cone guidance and collapse and activity-dependent development, and applications of these to injury and disease.

Prerequisite(s): CELL 3010, 3750, 3110, 3030, 3310 or NSCI 3310.

NSCI 4370 Molecular Neurobiology (3 Credit Hours)

Introduction to the molecular biology of neurons and neuronal function. Topics of study will include: the molecular composition of nerve cells, and how this provides a basis for their functional properties; their synaptic connectivity; how they receive, transmit and retain information at a molecular level. Studies will focus on current research in the field of molecular neurobiology.

Prerequisite(s): CELL 3310, 3320, NSCI 3310 or 3320.

NSCI 4380 Cognitive Neuroscience (3 Credit Hours)

An introduction to the study of human behavior and cognition using neuroscience methods. The course will examine the neural basis of perception, attention, memory, language, motor control, and emotions.

Prerequisite(s): NSCI 3300, 3300, 3300, 3300, PSYC 3300, 3300, 3300 or 3300.

NSCI 4385 Cognitive Neuroscience Lab (1 Credit Hour)

A laboratory course that provides training in experimental design and ethical issues, data collection, analysis, and manuscript preparation for cognitive neuroscience experiments. Methods used in cognitive neuroscience research, such as event-related potentials, structural and functional MRI, also will be discussed. Students will conduct their own studies using behavioral and brain electrical activity measures. Note: Satisfies psychology and neuroscience laboratory requirement. Fulfills college laboratory requirement.

Prerequisite(s): (NSCI 3300, 3300, 3300, 3300, 3670, 3670, 3670, 3670, PSYC 3300, 3300, 3300, 3300, 3670, 3670, 3670 or 3670) and NSCI 380*.

* May be taken concurrently.

NSCI 4450 Genome Biology (3 Credit Hours)

Genome-level science is changing the pace of biomedical research and medicine. This course will examine how whole genomes, transcriptomes, and proteomes are studied, and what we are learning about the biology of multiple organisms using these novel techniques. Epigenetics, genomics, and proteomics will be covered in the context of disease and the development of novel therapeutics. NOTE: Cross-listed as CELL/NSCI 4450/ 6450/ 7450.

Prerequisite(s): NSCI 4370 or CELL 3030.

NSCI 4500 Adv Molec Neurobiology (3 Credit Hours)

This course provides detailed description and in-depth discussion of current techniques and experimental topics in the field of molecular neurobiology.

Prerequisite(s): NSCI 4370 or CELL 4370.

NSCI 4510 Biological Psychology (3 Credit Hours)

A survey of biological psychology with an emphasis on neuroanatomy and research methods used to study mechanisms of learning and memory, mental disorders, emotion, stress, and other psychological phenomena.

Prerequisite(s): NSCI 3300 or PSYC 3300.

NSCI 4513 Music and Brain (3 Credit Hours)

An introduction to current research linking music education to brain development and function. Fulfills writing intensive and service-learning requirements. NOTE: Cross-listed with PSYC 4513.

Prerequisite(s): NSCI 3300 or PSYC 3300.

NSCI 4515 Biological Psyc Lab (1 Credit Hour)

A laboratory course providing training in behavioral and neurobiological methods, experimental design, data collection and analysis and preparation of research reports. Fulfills the writing intensive requirement.

Prerequisite(s): PSYC 4510* or NSCI 4510*.

* May be taken concurrently.

NSCI 4530 Psychopharmacology (3 Credit Hours)

An introduction to the effects of psychoactive agents on the nervous system. Lectures emphasize the mechanisms by which drugs regulate neurotransmitter systems to alter psychological and physical states.

Prerequisite(s): NSCI 3300 or PSYC 3300.

NSCI 4535 Psychopharmacology Lab (1 Credit Hour)

Optional laboratory that fulfills laboratory requirement for Neuroscience and Psychology majors.

Prerequisite(s): NSCI 4530* or PSYC 4530*.

* May be taken concurrently.

NSCI 4560 Internship Fall (3 Credit Hours)

An experiential learning process coupled with pertinent academic course work. Open only to juniors and seniors in good standing. Apply through the Center for Public Service for the three credit internship that fulfills the Second Tier service requirement. Registration is completed with the Neuroscience Program.

NSCI 4570 Internship Neuroscience Spring (3 Credit Hours)

An experiential learning process coupled with pertinent academic course work. Open only to juniors and seniors in good standing. Apply through the Center for Public Service for the three credit internship that fulfills the Second Tier service requirement. Registration is completed with the Neuroscience Program.

NSCI 4580 Internship (1-3 Credit Hours)

An experiential learning process coupled with pertinent academic course work. Registration is completed with the Neuroscience Program. Notes: Does not fulfill either the Neuroscience Elective Lecture or Neuroscience Laboratory requirement. Graded S/U.

NSCI 4590 Stress & Trauma (3 Credit Hours)

This course provides an overview of the psychobiological bases of stress and trauma reactions and related psychological disorders.

NSCI 4660 Special Topics in Neuroscience (1-4 Credit Hours)

Various topics in Neuroscience based on faculty and student interest.

NSCI 4665 Special Topics Lab (1-3 Credit Hours)

Special Topics Lab.

NSCI 4890 Service Learning: NSCI 4060 (0-1 Credit Hours)

Optional service learning component of Psychopharmacology in which students complete 40 hours of service during the semester at a substance abuse treatment facility to be arranged by the Center for Public Service.

NSCI 4910 Independent Study (1-3 Credit Hours)

Laboratory research under direction of a faculty member. Registration is completed with the Neuroscience Program. A three-credit independent study may be used to fulfill a neuroscience laboratory requirement.

NSCI 4920 Independent Study (1-3 Credit Hours)

Laboratory research under direction of a faculty member. Registration is completed with the Neuroscience Program. May be used to fulfill a neuroscience laboratory requirement. Graded S/U grade.

NSCI 4940 Transfer Coursework (1-3 Credit Hours)**NSCI 4945 Transfer Course Work Lab (1-3 Credit Hours)****NSCI 4990 Honors Thesis (3 Credit Hours)**

Honors thesis research, first semester. Register in department.

NSCI 5000 Honors Thesis (4 Credit Hours)

Honors thesis research, second semester. Register in department.

NSCI 5380 Study Abroad (1-20 Credit Hours)

Courses taught abroad by non-Tulane faculty. Does not count toward Tulane GPA.

NSCI 5390 Study Abroad (1-20 Credit Hours)

Courses taught abroad by non-Tulane faculty. Does not count toward Tulane GPA.

NSCI 6010 Physical Dimensions of Aging (3 Credit Hours)

This course is designed to introduce students to the physiological, behavioral, and cognitive changes associated with aging. In particular, we will focus on the effects of exercise on the aging human system. We will also discuss what it means to become older within a community, what can a person expect during the aging process, and what kind of control a person has over his/her aging body.

Prerequisite(s): (CELL 1010, 1010, 1010 or 1010) and (EBIO 1010, 1010, 1010 or 1010).

NSCI 6030 Brain Institute Seminar (1 Credit Hour)

Students attend weekly departmental seminars as an introduction to research hypotheses, techniques and presentations.

NSCI 6040 Trends In Neuroscience (1 Credit Hour)

Students select, analyze, present, and discuss recent empirical articles in the field of Neuroscience. During most weeks, an article authored by a neuroscientist who is presenting a departmental colloquium will be selected to facilitate understanding of the presentation. Therefore, students are required to enroll in the companion course NSCI 6030, Neuroscience Seminar.

NSCI 6060 Behavioral Endocrinology (3 Credit Hours)

An introduction to the roles of steroid and peptide hormones in physiology and behavior. Lectures focus on the hormonal mechanisms that control reproductive and regulatory functions in human and infrahuman species.

NSCI 6070 Neurobiology of Aging (3 Credit Hours)

This course will survey the current literature in clinical and research journals regarding the Neurobiology of the aging process. Emphasis is placed on the state of research in aging, looking at experimental design issues as well as published results. Connections will be drawn between the research literature and current clinical practice, as well as what the research literature says regarding aging and lifestyle.

NSCI 6110 Brain and Language (3 Credit Hours)

The goal of this course is to learn how the brain is organized to produce and comprehend language and to understand linguistic disorders attendant on brain damage. There is an optional service learning component in which students can work with a speech therapist at a local healthcare provider.

NSCI 6130 Sport Rel Brain Injury (3 Credit Hours)

This course will provide students with a conceptual and practical appreciation of contemporary neuroscience techniques that are utilized for the assessment and rehabilitation of athletes that suffer sport related concussion(s), including both strengths and limitations. The course will provide an innovative and engaging environment within the community for supervised exploration of specific components of sport concussion management including education/prevention and baseline testing. The students will also communicate research findings in oral and written formats. Course grades will be determined by the students' performance on test(s), scientific article critiques, student lead class discussions, and a group project. In lieu of a final exam, students will submit a group project that will simulate the process to complete a clinical research project.

NSCI 6150 Methods in Neuroscience (3 Credit Hours)

A lecture course exposing students to contemporary theories and techniques used in cellular and behavioral neuroscience by Tulane neuroscientists in their own research programs. The course is taught by faculty members representing several departments from both the uptown and downtown campus and the Health Sciences Center.

NSCI 6200 General Endocrinology (3 Credit Hours)

This course explains the basics of hormone action and hormone interactions with their receptors, with an emphasis on the molecular mechanisms by which homeostasis is maintained in multicellular organisms. Physiological outcomes of hormone actions on different organs, as well as aberrant hormone action will be covered. Open to undergraduates by petition who plan to transfer credit to the 4+1 Program in Neuroscience.

NSCI 6220 Neural Microengineering (3 Credit Hours)

In recent years, a number of technologies have been developed and utilized for probing the nervous system. This course will focus on microscale tools, technologies, and techniques employed for the control, manipulation, and study of the nervous system in vitro. Course material will be presented primarily by students who prepare presentations from extensive background literature review. A number of projects will be assigned as design challenges in which multiple interdisciplinary groups will research and present proposed solutions to the same challenge. No background in engineering or math is required. Generally offered every other Spring.

NSCI 6310 Cellular Neuroscience (3 Credit Hours)

In-depth coverage of the basic principles of cellular neuroscience, including the biophysical basis of the membrane potential, action potential generation and propagation, and synaptic signaling. Students also will be introduced to the synaptic organization of higher neural systems, such as the visual, auditory and somatic sensory systems. In addition, a term paper is required. Open to graduate students only. Students are required to take NSCI 6360, Topics in Cellular Neuroscience, to obtain graduate credit.

NSCI 6320 Systems Neuroscience (3 Credit Hours)

The subject of this course is the human nervous system, its anatomy, connectivity and function. Discusses the normal structure of the nervous system and the relationship of that structure to physiological function. The course is taught from a practical, clinical point of view and is intended to prepare students for further study in the neurosciences. In addition, a term paper is required.

Prerequisite(s): CELL 3310 or NSCI 3310.

NSCI 6330 Neurobiol Learn & Memory (3 Credit Hours)

An introduction to the study of the neural mechanisms involved in learning and memory. The course involves detailed study of the memory systems of the brain as well as historical trends, theoretical perspectives and empirical findings that are associated with the neurobiology of learning and memory. Open to undergraduates by petition who plan to transfer credit in Neurobiology of Learning and Memory to the 4+1 Program in Neuroscience.

NSCI 6340 Neurobiology of Disease (3 Credit Hours)

Advanced course on the higher neural functions of the nervous system and neurological diseases resulting from disruption of these functions. An emphasis is placed on the physiology of the nervous system and neural dysfunction caused by inherited and acquired diseases. Topics range from motor control and neuromuscular diseases to high cognitive function and dementia. Clinical interventions as well as current research are discussed. In addition, a term paper is required. Open to undergraduates by petition who plan to transfer credit in Neurobiology of Disease to the 4+1 Program in Neuroscience.

NSCI 6350 Developmental Neurobiol (3 Credit Hours)

A broad overview of the different stages of neural development. Examination of the molecular aspects of developmental neurobiology, with reference to some important signaling pathways involved in neural growth and specification. Particular attention will be given to those active research fields, such as growth cone guidance and collapse and activity-dependent development, and applications of these to injury and disease. In addition, a term paper is required. Open to undergraduates by petition who plan to transfer credit to the 4+1 Program in Neuroscience.

NSCI 6362 Neuroscience & CNS Dissection (3 Credit Hours)

The course emphasis is extracting intact Central Nervous System (CNS) structures with connecting peripheral nerves. The course will look at specific pathways (afferent, efferent, dermatomes) and discuss related clinical manifestations associated with lesions to the individual CNS and peripheral nerve structures. Team dissection will attempt to save substantial segments of cranial nerves and will explore the structures with which they communicate. As student progress through the dissection they will: 1) identify structures that surround and or cover the CNS; 2) log them in a course notebook and then dissect appropriate structures. Grading will be based upon participation, complete notebooks and final dissection results. (e.g., did you remove the brain, spinal cord, and peripheral nerves as a single unit in reasonable condition?) Notes: Satisfies neuroscience laboratory requirement. Cross-listed with NSCI 3360.

NSCI 6370 Molecular Neurobiology (3 Credit Hours)

Introduction to the molecular biology of neurons and neuronal function. Topics of study will include: the molecular composition of nerve cells, and how this provides a basis for their functional properties; their synaptic connectivity; how they receive, transmit and retain information at a molecular level. Studies will focus on current research in the field of molecular neurobiology. In addition, a term paper is required. Open to undergraduates by petition who plan to transfer credit to the 4+1 Program in Neuroscience.

NSCI 6380 Cognitive Neuroscience (3 Credit Hours)

An introduction to the study of human behavior and cognition using neuroscience methods. The course will examine the neural basis of perception, attention, memory, language, motor control, and emotions. Open to undergraduates by petition who plan to transfer credit to the 4+1 Program in Neuroscience.

NSCI 6400 Neuroscience Applied (3 Credit Hours)

This course is designed for neuroscience graduate students to help them utilize and apply their skills and knowledge of neuroscience and to help prepare them for their future professions. The course consists of individual and group presentations, discussion of selected readings, career preparation activities, invited speakers, evaluation/feedback, and a final project as students develop their critical thinking, analytical, and communication skills. For Graduate Students only.

NSCI 6450 Genome Biology (3 Credit Hours)

Genome-level science is changing the pace of biomedical research and medicine. This course will examine how whole genomes, transcriptomes, and proteomes are studied, and what we are learning about the biology of multiple organisms using these novel techniques. Epigenetics, genomics. and proteomics will be covered in the context of disease and the development of novel therapeutics. NOTE: Cross-listed as CELL/NSCI 4450/ 6450/ 7450.

Prerequisite(s): NSCI 4370 or CELL 3030.

NSCI 6500 Adv Molec Neurobiology (3 Credit Hours)

This course provides detailed description and in-depth discussion of current techniques and experimental topics in the field of molecular neurobiology.

NSCI 6530 Psychopharmacology (3 Credit Hours)

An introduction to the effects of psychoactive agents on the nervous system. Lectures emphasize the mechanisms by which drugs regulate neurotransmitter systems to alter psychological and physical states. Open to graduate students. Open to undergraduates by petition who plan to transfer credit in Psychopharmacology to the 4+1 Program in Neuroscience.

NSCI 6550 Syn Org of the Brain (3 Credit Hours)

The goal of this course is to discuss and understand functional connections within and between areas of the brain to lead to a greater understanding of brain function and behavior. We will focus on limbic and memory systems. A strong emphasis will be placed on in-class discussions and student presentations to enhance critical thinking and oral presentation skills.

NSCI 6590 Stress & Trauma (3 Credit Hours)

This course provides an overview of the psychobiological bases of stress and trauma reactions and related psychological disorders.

NSCI 6630 Cellular Neurophysiology (3 Credit Hours)

Survey of current topics and techniques in the physiology of neurons and neuronal circuits, concentrating primarily on electrophysiological studies.

NSCI 6660 Special Topics (1-3 Credit Hours)

Courses offered by visiting professors or permanent faculty primarily for undergraduates. For description, consult department.

NSCI 6665 Special Topics Lab (1-3 Credit Hours)

Special Topics Lab.

NSCI 6900 Graduate NSCI Internship (1-3 Credit Hours)**NSCI 6940 Transfer Coursework (1-3 Credit Hours)****NSCI 7030 Cog. Neurosc. Grad Seminar (3 Credit Hours)****NSCI 7100 Special Projects In NSCI (1-3 Credit Hours)**

Individual studies in a selected field with approval of instructor and advisor.

NSCI 7110 Graduate Neuroscience I (3 Credit Hours)

An advanced survey of cellular neuroscience team-taught by members of the Tulane Neuroscience Program faculty. Topics covered include, among others: neuronal electrogenic properties, synaptic transmission and neuromodulation, signal transduction, neurotransmitter systems, synaptic plasticity, blood-brain barrier, glia, and neuropsychiatric disorders. The objective of the course is to achieve a fluency in neuroscience that will provide a foundation for pursuing further graduate-level neuroscience study and research. Restrictions: Open only to graduate students in Neuroscience

NSCI 7120 Graduate Neuroscience II (3 Credit Hours)

This course is concerned with the structure and function of the human nervous system. In addition to lectures, this course provides hands-on examination of neuroanatomical structures. Most neuroscience research requires a working knowledge of the structural components of the nervous system as the basis of understanding conceptual aspects of nervous system function. This course is designed to provide a clear and concise account of the anatomy of the human nervous system in sufficient detail to understand the main functions and common disorders which impact the nervous system. This method will demonstrate how knowledge of neuroanatomy can aid in understanding clinical symptoms and emphasizes those areas of neuroanatomy which are particularly relevant to human neurological disorders. In addition, this course will focus on some broad aspects of human neuroscience and how they are rooted in the structure of the nervous system. Restrictions: Open only to graduate students in Neuroscience

NSCI 7130 Research Rotations (3 Credit Hours)

First-year doctoral students in Neuroscience complete research rotations in three different laboratories lead by faculty members of the Tulane Brain Institute before placement in a permanent laboratory to pursue doctoral training. The research objectives of each rotation are outlined by the supervising faculty member at the beginning of the rotation, typically 6-8 weeks in length. Three credits are earned for the first research rotation completed during the fall semester in the doctoral program and three additional credits are earned for the two research rotations completed during the spring semester. Restrictions: Open only to first-year doctoral students in Neuroscience

NSCI 7240 College Teaching Pedagogy (3 Credit Hours)

The objective of Teaching Pedagogy is to provide a structured learning experience for doctoral students in Psychology and Neuroscience to facilitate their preparation to teach at the collegiate level and to increase their competitiveness on the job market. The course focuses on strategies and techniques to teach undergraduate and graduate courses in Psychology and Neuroscience.

NSCI 7241 College Teaching Practicum (1-4 Credit Hours)

College Teaching Practicum allows doctoral students in Psychology and Neuroscience to design, prepare, and team-teach a section of an undergraduate course in their areas of expertise. Students receive supervision and mentoring based on classroom observations by Dr. Dohanich and other faculty members. Each student enrolled in the course teaches approximately 25% of an undergraduate course. Final grades are based on the effectiveness of teaching as evaluated by Dr. Dohanich using the attached rubric provided the CELT Peer Observation Program. The College Teaching Pedagogy course (PSYC/NSCI 7240) is the mandatory pre-requisite course for College Teaching Practicum.

NSCI 7260 Graduate Communications (3 Credit Hours)**NSCI 7450 Genome Biology (3 Credit Hours)**

Genome-level science is changing the pace of biomedical research and medicine. This course will examine how whole genomes, transcriptomes, and proteomes are studied, and what we are learning about the biology of multiple organisms using these novel techniques. Epigenetics, genomics, and proteomics will be covered in the context of disease and the development of novel therapeutics. NOTE: Cross-listed as CELL/NSCI 4450/ 6450/ 7450.

NSCI 7940 Transfer Credit-Grad (1-3 Credit Hours)

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NSCI 7980 Research In Neuroscience-PhD (1-9 Credit Hours)

Individual research supervised by faculty.

NSCI 7981 Research in Neuroscience -MA (1-9 Credit Hours)

Individual research supervised by faculty.

NSCI 9980 Master's Thesis Research (3 Credit Hours)

Research toward completion of a masters degree.

NSCI 9990 Dissertation Research (3 Credit Hours)

Research toward completion of a doctoral degree.