NEUROSCIENCE (NEUR)

NEUR*2000 Foundations in Neuroscience Fall Only (LEC: 3) [0.50]
This course emphasizes the structure and function of the human brain. General principles of the function and organization of nervous systems will be discussed, providing both an overview of the subject and a foundation for advanced courses. Topics will include the physical and chemical bases for action potentials, synaptic transmission, and sensory transduction; anatomy; development; sensory and motor pathways; and the neuroscience of brain diseases.
Prerequisite(s): BIOL*1090, PSYC*1000
Restriction(s): PSYC*2410. This is a Priority Access Course. Enrolment may be restricted to particular programs or specializations or semester levels during certain periods.
Department(s): Department of Psychology
Location(s): Guelph

NEUR*3100 Molecular Mechanisms of Neurological Disorders Fall Only (LEC: 3) [0.50]
This course will follow the life of nervous system cells from birth, through their functional life, and ending in ageing and degenerative disease. Focus will be on the molecular and cellular events that govern these processes and the diseases and pathologies, such as Parkinson’s and Alzheimer’s, that arise as a consequence of their dysfunction. Finally, students will be introduced to the new and rapidly advancing field of adult neurogenesis, and demonstrations. A diversity of vertebrate and invertebrate model systems in the brain, followed by current pharmacological interventions for selected brain disorders, and the use and abuse of common pharmacological agents.
Prerequisite(s): MCB*2050, (NEUR*2000 or PSYC*2410), (1 of BIOL*3200, HK*2810, ZOO*3600)
Restriction(s): This is a Priority Access Course. Enrolment may be restricted to particular programs or specializations or semester levels during certain periods.
Department(s): Department of Molecular and Cellular Biology
Location(s): Guelph

NEUR*3500 Techniques in Neuroscience Winter Only (LEC: 2, LAB: 3) [1.00]
This course provides an introduction to selected techniques used in Neuroscience. Students will investigate and learn key methods in neurophysiology and biomechanics, neuroanatomy, cognitive neuroscience, and molecular and cellular neurobiology, used to address contemporary problems in this multidisciplinary field. These techniques will be introduced through literature review, hands-on laboratory exercises and demonstrations. A diversity of vertebrate and invertebrate model organisms will be considered as well as the ethical considerations that accompany the use of animals or human subjects in research.
Prerequisite(s): MCB*2050, PSYC*3270, (NEUR*2000 or PSYC*2410), (1 of BIOL*3200, HK*2810, ZOO*3600)
Restriction(s): This is a Priority Access Course. Enrolment may be restricted to particular programs (BSCH.NEUR minor) or semester levels during certain periods.
Department(s): Department of Molecular and Cellular Biology, Department of Biomedical Sciences, Department of Psychology, Department of Human Health and Nutritional Sciences
Location(s): Guelph

NEUR*4000 Current Issues in Neuroscience Fall Only (LEC: 3) [0.50]
This course will consist of guest lectures offered by faculty who are working in the field and will complement the seminars given by the students on topics that they have prepared in studying the primary literature. Students will also prepare a major paper on a neuroscience topic.
Prerequisite(s): 14.00 credits
Restriction(s): Enrolment restricted to BSC.NEUR major and minor.
Department(s): Department of Biomedical Sciences
Location(s): Guelph

NEUR*4100 Neuropharmacology Fall Only (LEC: 4) [0.50]
This course will explore pharmacological manipulation of the nervous system. Content will focus on the physiology of major neurotransmitter systems in the brain, followed by current pharmacological interventions for selected brain disorders, and the use and abuse of common pharmacological agents.
Prerequisite(s): BIOM*3090, (NEUR*2000 or PSYC*2410)
Restriction(s): This is a Priority Access Course. Enrolment may be restricted to particular programs or specializations or semester levels during certain periods: (e.g. BSC.NEUR major, minor, and BSC.BIOM).
Department(s): Department of Biomedical Sciences
Location(s): Guelph

NEUR*4401 Research in Neurosciences Summer, Fall, and Winter (LAB: 6) [0.50]
This is the first part of the two-semester course NEUR*4401/2. In this course, students will conduct independent research of a current topic in any of the biomedical neurosciences: (such as anatomy, physiology, pharmacology, toxicology, molecular biology, biochemistry). Students work under the supervision of individual faculty. Faculty consent must be obtained prior to being admitted into the course by the course coordinator. This is a two-semester course offered over consecutive semesters. When you register for this course you must select NEUR*4401 in the first semester and NEUR*4402 in the second semester. A grade will not be assigned in NEUR*4401 until NEUR*4402 has been completed.
Prerequisite(s): 14.00 credits
Restriction(s): BIOM*4510, BIOM*4521, BIOM*4522, NEUR*4450.
Instructor consent required. Enrolment restricted to BSC.NEUR major and minor.
Department(s): Department of Biomedical Sciences
Location(s): Guelph

NEUR*4402 Research in Neurosciences Summer, Fall, and Winter (LAB: 6) [0.50]
This is the second part of the two-semester course NEUR*4401/2.. In this course, students will conduct independent research of a current topic in any of the biomedical neurosciences: (such as anatomy, physiology, pharmacology, toxicology, molecular biology, biochemistry). Students work under the supervision of individual faculty. Faculty consent must be obtained prior to being admitted into the course by the course coordinator. This is a two-semester course offered over consecutive semesters. When you register for this course you must select NEUR*4401 in the first semester and NEUR*4402 in the second semester. A grade will not be assigned in NEUR*4401 until NEUR*4402 has been completed.
Prerequisite(s): NEUR*4401
Restriction(s): BIOM*4510, BIOM*4521, BIOM*4522, NEUR*4450.
Enrolment restricted to BSC.NEUR major and minor.
Department(s): Department of Biomedical Sciences
Location(s): Guelph
**NEUR*4450 Research in Neurosciences**  Summer, Fall, and Winter  (LAB: 12)  [1.00]

In this course, students will conduct independent laboratory research on a current topic in any of the biomedical neurosciences (such as anatomy, physiology, pharmacology, toxicology, molecular biology, biochemistry). Students work under the supervision of individual faculty. Faculty consent must be obtained prior to being admitted into the course by the course coordinator.

**Prerequisite(s):** 14.00 credits

**Restriction(s):**  BIOM*4510, BIOM*4521, BIOM*4522, NEUR*4401, NEUR*4402. Instructor consent required. Enrolment restricted to BSC.NEUR major and minor.

**Department(s):** Department of Biomedical Sciences

**Location(s):** Guelph